

MCQs for the Internship Examination of DVM 2015 class

FOREWORD

This booklet is comprised of multiple choice (MCQs) and short questions aimed at assessment of the knowledge and skills of outgoing DVM graduates. The MCQs and short questions in this booklet are from different areas pertaining to animal health and production, which have been developed by different Faculties of Veterinary and Animal Husbandry at University of Agriculture, Faisalabad. This is a great effort and hope would be highly significant for preparation of different degree awarding and entry exams by day 1 veterinarians. Large participation and input by the faculty members and Mr. Khurram Shahzad Afzal for composing and formatting of this booklet is gratefully acknowledged.

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Contents

Subjects/MCQs/Keys	Page #
MCQs Anatomy and Histology	3
Keys MCQs Anatomy and Histology	19
MCQs Animal Production	20
Keys MCQs Animal Production	33
CMS Section A: Medicine	34
CMS Key Section A: Medicine	41
CMS Section B: Surgery	42
CMS Key Section B: Surgery	48
IOM Section A: Veterinary Epidemiology and Public Health	49
IOM Key Section A: Veterinary Epidemiology and Public Health	54
Section B: Food Microbiology and Immunology	55
IOM Key Section A: Food Microbiology and Immunology	59
IOM Section C: Molecular Biology	60
IOM Key Section C: Molecular Biology	65
IOM Section D: General Microbiology & Bacteriology	66
IOM Key Section D: General Microbiology & Bacteriology	71
MCQs Miscellaneous Section A	72
Keys Miscellaneous Section A	91
MCQs Miscellaneous Section B	92
Key Miscellaneous Section B	104
MCQs Miscellaneous Section C	105
Key Miscellaneous Section C	115
PARA MCQs Section A: Protozoology	116
PARA Key Section A: Protozoology	120
PARA Section B: Helminthology	121
PARA Key Section B: Helminthology	126
PARA MCQs Section C: Entomology	127
PARA Key Section C: Entomology	136
MCQs Section A: Clinical Pathology	137
Keys MCQs Section A: Clinical Pathology	141
MCQs Section B: Systemic Pathology	142
Keys MCQs Section B: Systemic Pathology	150
MCQs Section C: Poultry Pathology	151
Keys MCQs Section C: Poultry Pathology	162
MCQs Section A: Physiology	163
Keys MCQs Section A: Physiology	170
MCQs Section B: Pharmacology	171
Key MCQs Section B: Pharmacology	177
MCQs Section A: Theriogenology	178
Key MCQs Section A: Theriogenology	190
MCQs Section B: Theriogenology / Animal Reproduction	191
Keys MCQs Section B: Theriogenology / Animal Reproduction	203
Short questions with answers	204

Anatomy

MCQs Anatomy and Histology

No.	Question	Choice	Answers
1	Cell is bounded by a membrane	a	Plasma membrane
		b	Nuclear membrane
		c	Basement membrane
		d	Lysosomal membrane
2	Mitochondria is mainly involved in	a	Protein synthesis
		b	Production of enzyme
		c	Generation of energy
		d	Production of hormones
3	The DNA of cell is mainly present in	a	Cytoplasm
		b	Nucleus
		c	Rough endoplasmic reticulum
		d	Lysosome
4	Melanin is a	a	Cytoplasmic organelle
		b	Cytoplasmic inclusion
		c	Enzyme
		d	Hormone
5	In case of mitosis, chromosome number remains	a	Constant
		b	Double
		c	Half
		d	None of above
6	In epithelium, junction between two cells are	a	Tight Junction
		b	Adhering junction
		c	Communicating junction
		d	None of above
7	The spermatozoa moves by	a	Cilia
		b	Flagella
		c	Microvilli
		d	None of above
8	Inside cell, protein synthesis is done by	a	Mitochondria
		b	Rough endoplasmic reticulum
		c	Lysosomes
		d	Smooth endoplasmic reticulum
9	The non-living component of cell is called	a	Inclusion
		b	Organelle
		c	Nucleus
		d	Cytoplasm
10	The mitosis comprises of following number of phases	a	1
		b	2
		c	3
		d	4
11	Animal is a	a	Unicellular organism
		b	Bi-cellular organism
		c	Multicellular organism
		d	None of above
12	Glycogen is the major storage form of	a	Protein
		b	Lipid
		c	Carbohydrate
		d	Glycoprotein
13	The study of cell is called	a	Cytology
		b	Pathology
		c	Parasitology
		d	Embryology
14	Fat is stored primarily in	a	Muscle

		b	Adipose cell
		c	Kidney
		d	None of above
15	The study of development of an organism from zygote to adult is called	a	Cytology
		b	Pathology
		c	Parasitology
		d	Embryology
16	Following germ layer(s) takes part in formation of epithelium	a	Ectoderm
		b	Ectoderm
		c	Mesoderm
		d	All of above
17	The epithelium comprises of	a	Single cell layer
		b	More than one cell layer
		c	Both a and b
		d	None of above
18	The epithelium consists of a single layer of cells is called	a	Simple
		b	Stratified
		c	Basement membrane
		d	None of above
19	The epithelium having secretary function is called	a	Simple epithelium
		b	Stratified epithelium
		c	Glandular epithelium
		d	None of above
20	The epithelium is called simple epithelium on the basis of	a	a) Number of cell layers
		b	Size of cells
		c	Shape of cells
		d	Location of cells
21	Techniques that permit direct observation of living cells include which of the following?	a	Homogenization and differential centrifugation
		b	Cryofracture and freeze etch
		c	Phase contrast microscopy and tissue culture
		d	Radioautography and transmission electron microscopy
		e	Column chromatography and isoelectric focusing
		f	Blotting and electrotransfer
		g	Polymerase chain reaction
22	Which of the following is enhanced by chemical fixation?	a	Autolysis
		b	Enzyme activity
		c	Immunohistochemical detection of tissue antigens
		d	Bacterial degradation of histologic specimens
		e	Solubility of tissue proteins
23	Which of the following techniques is mostly used to locate glycogen in cells?	a	Methylene blue staining
		b	Feulgen's reaction
		c	Periodic acid Schiff (PAS) reaction
		d	Enzyme histochemistry
		e	Eosin staining
24	Frozen sectioning may be required to avoid the removal of which of the following target substances when tissues are prepared for paraffin sectioning?	a	Basic proteins
		b	Lipids
		c	Enzymes
		d	Carbohydrates
		e	Nucleic acids

25	Which of the following enzymes is used during DNA cloning procedures to isolate specific genes by cutting DNA at specific nucleotide sequences?	a	Alkaline phosphatase
		b	DNA ligase
		c	DNA polymerase
		d	Horseradish peroxidase
		e	Restriction nuclease
		g	Reverse transcriptase
		h	RNA polymerase
26	The agents in which of the following procedures are intended to stabilize tissue structure by coagulating proteins and promoting cross-linking?	a	Clearing
		b	Dehydration
		c	Embedding
27	Which of the following best describes the appearance of a unit membrane under a transmission electron microscope?	a	Junctional complex
		b	Lipid bilayer
		c	Penta-laminar structure
		d	Porous structure
		e	Tri-laminar structure
28	The synthesis of all proteins appears to be initiated on which of the following cellular components?	a	Free polyribosome
		b	Golgi complex
		c	Nucleosomes
		d	Ribophorin
		e	RER
29	Which of the following pairs of functions is most closely associated with the Golgi complex?	a	Energy metabolism and glycogen synthesis
		b	Energy metabolism and lipid metabolism
		c	Glycogen synthesis and packaging of secretions
		d	Glycosylation and sulfation of secretory products
		e	Lipid metabolism and concentration
30	Which of the following descriptions best characterizes a phagosome?	a	Allows extracellular materials to enter cells without endocytosis
		b	Contains densely packed, inactive hydrolytic enzymes
		c	Contains aging organelles
		d	Forms by budding from a lysosome
		e	Is surrounded by membrane derived from the Golgi complex
31	Which of the following is the location of Krebs cycle enzymes and mitochondrial DNA?	a	Cristae
		b	Inner mitochondrial membrane
		c	Matrix granules
		d	Mitochondrial matrix
		e	Outer mitochondrial membrane
32	Which of the followings is the location of the electron-transport system?	a	Cristae
		b	F1 subunits
		c	Inner mitochondrial membrane
		d	Intracristal space
		e	Matrix granules
33	Which of the followings is the site of core glycosylation of secretory proteins?	a	Golgi complex
		b	Free polyribosomes
		c	Mitochondria
		d	RER
		e	SER

34	Which of the followings is the site of steroid hormone synthesis?	a	Golgi complex
		b	Free polyribosomes
		c	Mitochondria
		d	RER
		e	SER
35	Which of the followings is the site of actin and tubulin synthesis?	a	Centrioles
		b	Free polyribosomes
		c	Mitochondria
		d	RER
		e	SER
36	Which of the followings are important components of axonemes?	a	Centrioles
		b	Basal bodies
		c	Intermediate filaments
		d	Microfilaments
		e	Microtubules
37	Which of the following substances characteristically increases in abundance with increasing age in terminally differentiated cells such as neurons and muscle?	a	Cyclin
		b	Desmin
		c	Lipofuscin
		d	Osmium
		e	Phalloidin
38	Which of the followings are composed primarily of actin or actin-like proteins?	a	Basal bodies
		b	Cilia
		c	Cytochalasins
		e	Intermediate filaments
39	In rat hepatocytes, the crystalline nucleoid (dense core) of peroxisomes is believed to be composed of which of the following substances?	a	Acid phc
		b	Catalase
		c	n-Amino acid oxidase
		d	Divalent cations
		e	Urate oxidase
40	Which of the followings is true of the smooth muscles of the Iris?	a	Constrict the pupil in response to epinephrine
		b	Are incapable of graded contractions
		c	Are poorly innervated
		d	Ectodermal origin
		e	Release tension on the zonule when they contract
41	Which of the following structures is likely to contain the most vasa vasorum in its tunica media?	a	Aorta
		b	Arteriole
		c	Blood capillary
		d	Medium sized artery
		e	Thoracic duct
42	Which of the following structures contains the most elastin in its tunica media?	a	Aorta
		b	Arteriole
		c	Blood capillary
		d	Medium sized artery
		e	Thoracic duct
43	Which of the followings is true of the ventricles?	a	Are located at the base of the heart
		b	Their myocardial cells contain abundant granules
		c	Receive blood directly from the vena cava and the pulmonary veins
		d	Their walls contain the right and left bundle branches
		e	Contain more abundant elastic fibers than do the atria

44	Which of the followings is true of blood capillaries?	a	Carry lymphocytes
		b	Are blind-ended tubes
		c	Contain valves
		d	Characteristically lack occluding junctions between their lining cells
		e	Are lined by cells derived from endoderm
45	The sensory nerve fibers of arteries enter through the adventitia. Those that penetrate the farthest into the wall may extend into which of the following layers?	a	External elastic lamina
		b	Lumen
		c	Tunica adventitia
		d	Tunica intima
		e	Tunica media
46	How electrical impulses are passed from Purkinje fibers to ventricular cardiac muscle fibers?	a	Chemical synapses
		b	Diffusion through the endomysium
		c	Gap junctions
		d	Saltatory conduction
		e	Tight junctions (membrane fusion)
47	Which of the followings is the approximate life span of an erythrocyte in the circulation?	a	8 days
		b	20 days
		c	5 weeks
		d	4 months
		e	1 year
48	Which of the followings is true of the darker staining central region of platelets?	a	Contains the marginal bundle of microtubules
		b	Contains the platelet nucleus
		c	Contains the platelet granules
		d	Is termed the hyalomere
		e	Is termed the central pallor
49	Which of the followings is the biochemical constituent of the erythrocyte cell surface that is primarily responsible for determining blood type (e.g. A,B,O; M,N)?	a	Carbohydrate
		b	Lipid
		c	Nucleic acid
		d	Protein
50	Which of the followings is true of null cells?	a	Comprise 80% of circulating lymphocytes
		b	Are terminally differentiated B lymphocytes
		c	Are terminally differentiated T lymphocytes
		d	Are neither T nor B lymphocytes
		e	Are inactive helper cells
51	A differential cell count of a blood smear from a patient with a parasitic infection is likely to reveal an increase in the circulating numbers of which of the following cell types?	a	Basophils
		b	Eosinophils
		c	Erythrocytes
		d	Lymphocytes
		e	Monocytes
52	Which of the following cell types is most likely to be absent in a differential cell count of a blood smear from a normal patient?	a	Basophils
		b	Eosinophils
		c	Erythrocytes
		d	Lymphocytes
		e	Monocytes
53	Which of the following cell types is capable of returning to the circulation after leaving the blood to enter the connective tissue?	a	Basophils
		b	Eosinophils
		c	Lymphocytes
		d	Monocytes
		e	Neutrophils

54	Which of the following cell types normally is the most numerous of the circulating leukocytes?	a	Basophils
		b	Eosinophils
		c	Erythrocytes
		d	Lymphocytes
		e	Monocytes
55	Which of the following cells is an agranulocyte that becomes phagocytic after it enters the connective tissues?	a	Basophil
		b	Eosinophil
		c	Erythrocyte
		d	Lymphocyte
		e	Monocyte
		f	Neutrophil
56	Which of the following cell types has cytoplasmic granules that contain heparin and histamine?	a	Basophils
		b	Eosinophils
		c	Erythrocytes
		d	Lymphocytes
		e	Monocytes
		f	Neutrophils
		g	Platelets
57	Which of the following substances is present in higher concentrations in plasma than in serum?	a	Albumin
		b	Fibrinogen
		c	Glucose
		d	Immunoglobulin
		e	Major basic protein
		f	Serotonin
58	Which of the following terms refers to the percentage of packed erythrocytes per unit volume of blood?	a	Hemoglobin
		b	Hematocrit
		c	Hematopoiesis
		d	Hematoma
		e	Hemolysis
59	Which of the following is the predominant form of hemoglobin present in erythrocytes at birth?	a	Carboxyhemoglobin
		b	HbA
		c	HbA
		d	HbB
		e	HbF
		f	HbS
60	Which of the following cell types is more abundant in quantity?	a	Basophils
		b	lymphocytes
		c	Eosinophils
		d	Monocytes
		e	Neutrophils
61	Which of the following epidermal layers contains enucleated squamous keratinocytes and is the most superficial layer?	a	Stratum basale
		b	Stratum corneum
		c	Stratum granulosum
		d	Stratum lucidum
		e	Stratum spinosum
62	Which of the following epidermal layers is most likely to contain both desmosomes and hemidesmosomes?	a	Stratum basale
		b	Stratum corneum
		c	Stratum granulosum
		d	Stratum lucidum
		e	Stratum spinosum
63	Keratohyaline granules are particularly abundant and mitotic activity is rare in which of the following epidermal layers?	a	Stratum basale
		b	Stratum corneum
		c	Stratum granulosum
		d	Stratum lucidum
		e	Stratum spinosum

64	Which of the following epidermal layers is the most superficial layer in which keratinocyte mitosis occurs continuously and in which cells are attached to their neighbors during interphase by abundant desmosomes?	a	Stratum basale
		b	Stratum corneum
		c	Stratum granulosum
		d	Stratum lucidum
		e	Stratum spinosum
65	Which of the followings is (are) often absent in thick skin but typically present in thin skin?	a	Arrector pili muscles
		b	Meissner's corpuscles
		c	Stratum basale
		d	Stratum corneum
		e	Stratum lucidum
		f	Stratum spinosum
		g	Sweat glands
66	Which of the followings is typical of the reticular dermis but not of the papillary dermis?	a	Capillaries that nourish the epidermis
		b	Dense irregular connective tissue
		c	Loose (areolar) connective tissue
		d	Meissner's corpuscles
		e	Sweat gland ducts
		f	Type-I collagen
		g	anastomoses
67	Which of the followings is characteristic of sweat glands but not of sebaceous glands?	a	Adenomes are typically acinar in shape
		b	Adenomes contain clear cells and dark cells
		c	Adenomes have a "foamy" appearance
		d	Ducts empty mainly into hair follicles
		e	Mode of secretion is holocrine
		f	Rate of secretion is controlled by circulating androgens
		g	Secretory product is oily to waxy in nature
68	Albinism can result from an inherited defect in the gene encoding which of the following enzymes?	a	Catalase
		b	Collagenase
		c	Papain
		d	Prolyl hydroxylase
		e	Tyrosinase
69	The border between which of the followings is a significant site of arteriovenous anastomoses in the skin?	a	Dermis and epidermis
		b	Epidermis and basal lamina
		c	Papillary dermis and reticular dermis
		d	Stratum basale and stratum spinosum
		e	Stratum spinosum and stratum granulosum
70	Which of the followings best describes the composition of a renal lobule?	a	Renal pyramid and associated cortex
		b	Medullary ray and all nephrons that empty into it
		c	Renal pyramid and all nephrons that empty into it
		d	Interlobular artery and all nephrons it supplies
		e	Renal corpuscle and all associated renal tubules
71	Blood in the arcuate arteries subsequently flows into which of the following vascular channels?	a	Afferent arteriole(s)
		b	Efferent arterioles
		c	Glomerular capillaries
		d	Interlobar arteries
		e	Interlobular arteries
		f	Peritubular capillaries
		g	Stellate veins

72	Collections of cortical tissue between the medullary pyramids are called:	a	Interlobular cortex
		b	Juxtamedullary nephrons
		c	Medullary rays
		d	Renal columns of Bertin
		e	Renal lobes
73	Which of the following vessels are typically seen at the border between the renal cortex and medulla?	a	Arcuate arteries and veins
		b	Interlobar arteries and veins
		c	Interlobular arteries and veins
		d	Stellate veins
		e	Vasa recta
74	Which of the following cell types comprises the visceral layer of Bowman's capsule?	a	Endothelial cell
		b	Juxtaglomerular cell
		c	Mesangial cell
		d	Podocyte
		e	Polkissen (extra mesangial cell)
75	Which of the following types of epithelium lines the urinary bladder?	a	Pseudostratified columnar
		b	Simple columnar
		c	Simple cuboidal
		d	Stratified squamous
		e	Transitional
76	Which of the following types of epithelium comprises the parietal layer of Bowman's capsule?	a	Pseudostratified columnar
		b	Simple columnar
		c	Simple cuboidal
		d	Simple squamous
		e	Stratified cuboidal
		f	Stratified squamous
		g	Transitional
77	Which of the following types of epithelium lines the thick ascending limb of the loops of Henle?	a	Pseudostratified columnar
		b	Simple columnar
		c	Simple cuboidal
		d	Simple squamous
		e	Stratified cuboidal
		f	Stratified squamous
		g	Transitional
78	Which of the following types of epithelium lines the prostatic urethra?	a	Pseudostratified columnar
		b	Simple columnar
		c	Simple cuboidal
		d	Simple squamous
		e	Transitional
79	Which of the following types of epithelium lines the thin loop of Henle?	a	Pseudostratified columnar
		b	Simple columnar
		c	Simple cuboidal
		d	Simple squamous
		e	Stratified cuboidal
		f	Stratified squamous
		g	Transitional
80	Which of the following types of epithelium lines the proximal convoluted tubule?	a	Pseudostratified columnar
		b	Simple columnar
		c	Simple cuboidal
		d	Simple squamous
		e	Stratified cuboidal
		f	Stratified squamous
		g	Transitional
81	Lingual papillae with gustatory function are	a	Lenticular and conical
		b	Fungiform and vallate
		c	Foliate only
		d	Filiform and fungiform
		e	Fungiform, vallate and foliate

82	All but one do not contain taste buds	a	Hard palate
		b	Soft palate
		c	Epiglottis
		d	Vallate papillae
		e	Filiform papillae
83	How many cell types are present in taste buds?	a	2
		b	3
		c	4
		d	5
		e	None of above
84	Chemoreceptors of taste buds are present in	a	Type-I cells
		b	Type-II cells
		c	Type-III cells
		d	Both i and ii
		e	Both ii and iii
85	Life span of Sustentacular cells is	a	5days
		b	7days
		c	10days
		d	12days
		e	15days
86	Sustentacular role in taste buds is performed by	a	Type-I cells
		b	Type-II cells
		c	Type-III cells
		d	Both a and b
		e	Both b and c
87	Lyssa of tongue in cats is mainly comprised of	a	Skeletal muscles
		b	Smooth muscles
		c	White adipose tissue
		d	Brown adipose tissue
		e	a) Both i and ii
88	How much minerals are present in the teeth dentin?	a	40%
		b	50%
		c	60%
		d	70%
		e	80%
89	All are minor salivary glands except one, that is	a	Labial salivary gland
		b	Lingual salivary gland
		c	Buccal salivary gland
		d	Parotid salivary gland
		e	Zygomatic salivary gland
90	Striated ducts in sub-lingual salivary glands are not present in	a	Horse
		b	Ox
		c	Dog
		d	Sheep
		e	Goat
91	Stratum granulosum of ruminal mucosal epithelium has a thicknessof	a	1-5 cell layers
		b	2-3 cell layers
		c	3-4 cell layers
		d	1-3 cell layers
		e	2-4 cell layers
92	Zygomatic salivary glands are only present in	a	Horse
		b	Ox
		c	Dog
		d	Sheep
		e	Goat

93	None but one contain the molar salivary glands	a	Dog
		b	Cat
		c	Ox
		d	Horse
		e	Pig
94	Esophageal epithelium is non-keratinized stratified epithelium in case of	a	Dog
		b	Cat
		c	Ox
		d	Horse
		e	Pig
95	Lamina muscularis is absent in the cranial oesophageal part in	a	Horse
		b	Ox
		c	Dog
		d	Cat
		e	Pig
96	Gastric glands are of which type?	a	Straight tubular glands
		b	Branched tubular glands
		c	Simple alveolar glands
		d	Simple coiled tubular glands
		e	Tubulo-acinar glands
97	Most numerous cell type in gastric glands is	a	Mucous neck cells
		b	Parietal cells
		c	Endocrine cells
		d	Chief cells
		e	Goblet cells
98	Stratum corneum of gastric mucosal epithelium has a thickness of	a	1-5 cell layers
		b	5-10 cell layers
		c	10-20 cell layers
		d	2-10 cell layers
		e	1-20 cell layers
99	Shape of the cells of stratum spinosum is	a	Oval
		b	Cuboidal
		c	Stellate
		d	Polyhedral
		e	Irregular
100	Plica circularis are the circularly disposed mucosal folds present in	a	Rumen
		b	Reticulum
		c	Abomasum
		d	Small intestine
		e	Large intestine
101	Bones are bind together with the help of strong bands called as	a	Tendon
		b	Ligament
		c	Aponeurosis
		f	None of above
102	Diarthrosis is a	a	Highly moveable joint
		b	Immoveable joint
		c	Fixed joint
		d	Semi moveable joint
103	Gomphosis means	a	Inflammation of gums
		b	Implantation of teeth
		c	Removal of teeth from gum
		d	None of above
104	The coronoid processin mandible is turned caudally in	a	ox
		b	dog
		c	horse
		d	poultry

105	The tubercle of the ribs is concave in	a	Horse
		b	Ox
		c	Dog
		d	Pig
106	Tuber calcanei is grooved in	a	Horse
		b	Ox
		c	Dog
		d	Pig
107	Fossa ovalis is a remnant of	a	Umbilical artery
		b	Umbilical vein
		c	Foramen ovale
		d	Coronary sinus
108	Internal lining of the heart is called as	a	Pericardium
		b	Myocardium
		c	Endocardium
		d	Epicardium
109	The largest cranial nerve of the body is	a	Trochlear
		b	Trigeminal
		c	Oculomotor
		d	Facial
110	Tuber ischiaii on os-coxae is three sided in	a	Horse
		b	Ox
		c	Dog
		d	Goat
111	Ischial arch is narrow and deep in	a	Horse
		b	Ox
		c	Dog
		d	Goat
112	Membrane on the surface of the bone is called as	a	Endosteum
		b	Periosteum
		c	Perichondrium
		d	None of above
113	The ligament present between two horns of uterus is	a	Braad ligament
		b	Proper ligament
		c	Intercornual ligament
		d	Suspensory ligament
114	Inguinal canal has following number of openings	a	One
		b	Two
		c	Three
		d	Four
115	Urethra has	a	Pelvic part
		b	Extra-pelvic part
		c	Both a & b
		d	None of above
116	Horns are the extensions of the	a	Temporal bone
		b	Parietal bone
		c	Frontal bone
		d	None of above
117	Deltoideus muscle in ox has	a	Two parts
		b	Three parts
		c	Four parts
		d	None of above
118	Cytology is the study of	a	Cells
		b	Different sites
		c	Study under electron microscope
		d	Tissues

119	Topographic anatomy is the study of	a	Relative position of different organs
		b	Superficial study of structure
		c	Deep study of structure
		d	None of above
120	Leg contains	a	Radius and Ulna
		b	Tibia and Fibula
		c	Metacarpal
		d	Metatarsal
121	Cerebrospinal fluid (CSF) can be collected from	a	Duramater
		b	Piameter
		c	Subarachnoid space
122	Trochlea, a pulley like structure, is present in	a	Scapula
		b	Femur
		c	Humerus
123	Broad ligament in mare has attachment with	a	Lateral abdominal wall
		b	Sub lumbar region in mare
		c	With caudal wall
124	How many tarsal bones are present in horse?	a	Six
		b	Seven
		c	Eight
125	Distal articular surface is oblique in tibia of	a	Horse
		b	Ox
		c	Dog
126	How many carpal bones are present in horse?	a	Seven
		b	Eight
		c	Nine
127	How many branches of transverse process are present in sixth cervical vertebra of horse?	a	Three
		b	Four
		c	Five
128	The cranial cavity encloses the	a	Heart
		b	Brain
		c	Eyes
129	A well-developed tuber spinae is present on scapula of	a	Horse
		b	Ox
		c	Dog
130	A rounded spleen is present in the body of	a	Dog
		b	Goat
		c	Chicken
131	Ulna is a reduced bone in	a	Horse
		b	Ox
		c	Dog
132	Bicipital groove is undivided in	a	Ox
		b	Horse
		c	Dog
133	How many digits are present in ox?	a	Two
		b	Three
		c	Four
134	Tuber sacral forms a highest point than vertebral spines in	a	Horse
		b	Ox
		c	Dog
135	A symphysis mandibulae in horse is	a	Absent
		b	Present
		c	None of the above
136	Which of the followings is attached with the mesentery in abdomen?	a	Stomach
		b	Intestine
		c	Uterus

137	How many ligaments are present in the stomach of horse?	a	Five
		b	Six
		c	Seven
138	Average length of small intestine of horse is	a	70 Feet
		b	80 Feet
		c	90 Feet
139	A large rounded non articular projection is called as	a	Trochanter
		b	Tubercle
		c	Tuberosity
140	A small articular surface is called as	a	Facet
		b	Acetabulum
		c	Glenoid cavity
141	Collection of cells is called as	a	Organs
		b	Tissue
		c	System
		d	None of the above
142	Collection of Pus in the tissue is called	a	Tumor
		b	Abscess
		c	Pustules
		d	None of the above
143	Clavicles are well developed in	a	Chicken
		b	Horse
		c	Dog
		d	None of the above
144	Thoracic cavity is formed by	a	Sternum
		b	Ribs
		c	Thoracic vertebrae
		d	All of the above
145	Pneumonia is the inflammation of	a	Lungs
		b	Liver
		c	Of chest wall
		d	None of the above
146	Irregular muscular wall of the ventricles of the heart is	a	Corona radialis
		b	Tonicadortus
		c	Trabeculae cornae
		d	None of the above
147	Esophagus is more dilatable in	a	Ox
		b	Horse
		c	Dog
		d	None of the above
148	Cricoid cartilage of larynx of ox is	a	Ring shaped
		b	More compressed
		c	Very hard
		d	None of the above
149	Which of the followings is the bone in ox having two trochlea?	a	Ulnar carpal
		b	Fibular tarsal
		c	Tibial tarsal
		d	None of the above
150	How many ligaments are present in stomach of horse?	a	5 in numbers
		b	6 in numbers
		c	7 in numbers
		d	None of the above
151	Calcanean tendon is present in	a	Hind limb
		b	Fore limb
		c	Neck region
		d	None of the above

152	Kidneys are bean shaped in	a	Goat
		b	Dog
		c	Both a & b
		d	None of the above
153	How many lobes are present in liver of horse?	a	3
		b	4
		c	5
		d	None of the above
154	Ulna is a reduced bone in	a	All the animals
		b	Horse
		c	Dog
		d	Chicken
155	Scapular cartilage is not present in	a	Goat
		b	Horse
		c	Chicken
		d	None of the above
156	Greater trochantor is present on	a	Tarsal
		b	Metatarsal
		c	Humerus
		d	Femur
157	Muscle attaches with the bone with the help of	a	Ligament
		b	Aponeurosis
		c	Tendon
		d	Both b & c
158	Digastricus muscle has	a	One belly
		b	Two bellies
		c	Three bellies
		d	None of the above
159	Popliteus muscle is present on	a	Radius
		b	Ulna
		c	Tibia
		d	Femur
160	Longest muscle in the body of horse is	b	Semimembronosis
		b	Brachiocephalicos
		c	Longissimus dorsi
		d	Semitendoinosis
161	The chicken belongs to family	a	Meleagridae
		b	Phasianidae
		c	Anatidae
162	The upper jaw of birds is movable due to	a	Quadrate bone
		b	Frontal bone
		c	Jugal bar
163	The following number of bones form the lower jaw in birds	a	3
		b	5
		c	7
164	The fused thoracic vertebrae in birds are called	a	Synsacrum
		b	Notrium
		c	Sternum
165	In birds, there are following number of cervical vertebrae	a	7
		b	14
		c	16
166	The rib cage in birds is rigid due to	a	Head of rib
		b	Tubercle
		c	Uncinate process
167	The sternum of birds is also called as	a	Keel
		b	Furcula
		c	Manubrium

168	The pectoral girdle is formed by following bones in birds	a	3
		b	5
		c	7
169	The robust bone of pectoral girdle in birds is	a	Coracoid
		b	Clavicle
		c	Furcula
170	The largest wing bone in birds is	a	Humerus
		b	Scapula
		c	arpometacarpal
171	The Carpometacarpal bone in birds is formed by	a	2 bones
		b	3 bones
		c	Bone
172	The largest bone of pelvic limb in birds is	a	Oscoxae
		b	Femur
		c	Tibiotarsus
173	The os-coxae of birds have following number of foramina	a	2
		b	1
		c	3
174	There are following number of coelomic cavities in birds	a	4
		b	6
		c	8
175	The following structure is absent in birds	a	Diaphragm
		b	Pleura
		c	Pleural cavities
176	Lips and teeth are absent in birds and replaced by	a	Ramphotheca
		b	Tomium
		c	Egg tooth
177	The dorsal part of beak in birds is called	a	Tomium
		b	Culmen
		c	Egg tooth
		d	None of above
178	On the rostral part of the Culmen in newly hatched chick is a small pointed process called	a	Egg Shell
		b	Egg Tooth
		c	Tomium
		d	None of above
179	In birds, the following structure is absent	a	Hard palate
		b	Pharynx
		c	Soft palate
		d	Diaphragm
180	The mucous membrane of the palate bears following epithelium in birds	a	Stratified Squamous
		b	Simple squamous
		c	Stratified Squamous keratinized
181	The skeleton of tongue in birds is formed by	a	Hyoid bone
		b	Jugal bar
		c	Entoglossal
182	There are following no. of salivary glands in birds	a	6
		b	4
		c	8
183	The following part of esophagus is shorter in birds	a	Cervical
		b	Thoracic
		c	Pharyngeal
184	The internal lining of esophagus in birds is	a	Stratified Squamous epithelium
		b	Stratified Squamous keratinized
		c	Simple Squamous
185	The glandular stomach of birds is also called	a	Crop
		b	Gizzard
		c	Proventriculus

186	The glandular stomach of birds has a length of	a	3cm
		b	5cm
		c	2cm
187	Shape of muscular stomach in birds is like a	a	Convex lens
		b	Concave lens
		c	Biconvex lens
188	The wall of Gizzard is lined by	a	Simple Columnar
		b	Simple Squamous
		c	Stratified Columnar
189	Jejunum in birds is attached with	a	Peritoneum
		b	Mesentery
		c	Duodenum
190	A short blind remnant of the yolk sac in birds is called	a	Egg tooth
		b	Yolk
		c	Meckles diverticulum
191	In birds, following number of Ceaca are present	a	1
		b	2
		c	3
192	The Gall bladder in birds lies in following lobe of liver	a	Right lobe
		b	Left lobe
		c	None of above
193	The endocrine portion of pancreas in birds is	a	Beta Cells
		b	Islets of langerhans
		c	Alpha Cells
194	In birds, the nostrils are bounded dorsally by	a	Operculum
		b	Hairs
		c	Upper beak
195	The voice box of birds is called	a	Syrinx
		b	Larynx
		c	Pharynx
196	Following number of cartilages are present in birds	a	55
		b	126
		c	106
197	The length of lungs in birds is	a	5cm
		b	4cm
		c	7cm
198	There are following no. of air sacs in birds	a	8
		b	9
		c	10
199	The following air sac is single in birds	a	Cervical
		b	Axillary
		c	Clavicular
200	Birds can fly due to	a	Light weight
		b	Pneumatic bones
		c	Wings

Keys MCQs Anatomy and Histology

No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	A	51	A	101	B	151	A
2	C	52	D	102	A	152	C
3	B	53	E	103	B	153	A
4	B	54	E	104	A	154	B
5	A	55	B	105	B	155	C
6	A	56	A	106	B	156	D
7	B	57	D	107	C	157	D
8	B	58	B	108	C	158	B
9	A	59	A	109	B	159	C
10	D	60	E	110	B	160	C
11	C	61	B	111	B	161	B
12	C	62	A	112	B	162	A
13	A	63	C	113	C	163	B
14	B	64	E	114	B	164	B
15	D	65	A	115	C	165	B
16	D	66	B	116	C	166	B
17	C	67	B	117	A	167	A
18	A	68	E	118	A	168	A
19	C	69	C	119	A	169	A
20	A	70	B	120	B	170	A
21	C	71	E	121	C	171	B
22	B	72	D	122	B	172	C
23	C	73	A	123	B	173	C
24	D	74	D	124	B	174	C
25	C	75	E	125	A	175	A
26	D	76	D	126	B	176	A
27	E	77	C	127	A	177	B
28	A	78	E	128	B	178	B
29	D	79	D	129	A	179	C
30	C	80	C	130	C	180	A
31	D	81	E	131	A	181	C
32	C	82	D	132	A	182	C
33	D	83	E	133	C	183	A
34	E	84	C	134	B	184	A
35	B	85	C	135	A	185	C
36	D	86	D	136	B	186	B
37	C	87	C	137	A	187	C
38	E	88	D	138	A	188	A
39	E	89	D	139	C	189	B
40	D	90	C	140	A	190	C
41	A	91	D	141	B	191	B
42	D	92	C	142	B	192	A
43	A	93	B	143	A	193	A
44	D	94	A	144	D	194	A
45	C	95	C	145	A	195	A
46	D	96	B	146	C	196	B
47	C	97	D	147	A	197	C
48	A	98	E	148	B	198	A
49	D	99	D	149	C	199	C
50	B	100	D	150	A	200	B

MCQs Animal Production

No.	Question	Choice	Answer
1	Temperature of cow suffering from milk fever is:	a	96°F
		b	104°F
		c	107°F
		d	110°F
2	The pulse rate in goat is taken from the arteries:	a	Jugular and maxillary
		b	Maxillary & coccygeal
		c	Coccygeal & Jugular
		d	Pulmonary & Jugular
		e	None of these
3	Foot and mouth in cattle is due to infection by:	a	Bacteria
		b	Virus
		c	Parasite
		d	Fungus
		e	None of these
4	Mark the estrus Cycle of a healthy cow:	a	21 days
		b	18 Hours
		c	281 days
		d	30 days
		e	None of these
5	What is the heat period in buffalo?	a	2 to 8 hours
		b	4 days
		c	8 to 12 days
		d	12 to 34 days
		e	None of these
6	Udder secretion immediately after calving is called:	a	First milk
		b	Special milk
		c	Colostrum
		d	Calf starter
		e	None of these
7	Scrotal sac temperature of a bull compared to body temperature is :	a	Less
		b	Indefinite
		c	More
		d	Equal
		e	None of these
8	Dry matter required by cow of 400 kg body weight should be (per day)	a	10 kg
		b	20 kg
		c	2.5 kg
		d	0.5 kg
		e	None of these
9	Pica is caused due to the deficiency of:	a	Vitamin B ₁₂
		b	Protein
		c	Phosphorus
		d	Cystine
		e	None of these
10	Best method of milking is:	a	Suckling
		b	Knuckling
		c	Full hand milking
		d	Stripping
		e	None of these
11	Name the disease where carcass must be pitted with lime:	a	Anthrax
		b	Black quarter
		c	Tuberculosis
		d	Malaria
		e	None of the above

12	A teaser bull is maintained to:	a	Keep herd moving
		b	Detect heat
		c	Protect weak animals
		d	Inseminate cow
		e	None of the above
13	Total solid percentage of cow milk is approximately:	a	13
		b	25
		c	0.5
		d	5.0
		e	None of these
14	Total solid percentage of buffalo milk is approximately:	a	13
		b	25
		c	0.5
		d	17
		e	None of these
15	Mark the time of insemination of a cow in heat:	a	At the onset of heat
		b	Mid of estrus
		c	Between mid to late of heat
		d	Between late to end of heat
		e	None of these
16	Mark the per lactation milk yield of Sahiwal cow.	a	1100 kg
		b	1400 kg
		c	1800 kg
		d	2000 kg
		e	None of these
17	Gestation period in case of buffalo is of:	a	282 days
		b	151 days
		c	307 days
		d	335 days
		e	None of these
18	Addition of water in milk will:	a	Increase specific gravity
		b	Decrease specific gravity
		c	Increase total solids
		d	No change in specific gravity
		e	None of these
19	Flushing can increase the lamb crop by	a	50%
		b	2%
		c	30%
		d	10-20%
20	Small ruminant contribution towards total meat production of the country is	a	10%
		b	20%
		c	33%
		d	50%
21	Which one is the fat tail breed of sheep?	a	Lohi
		b	Salt Range
		c	Sipli
		d	Kajli
22	Which one is the Kharif fodder?	a	Barseem
		b	Oats
		c	Barley
		d	Sorghum
23	The most killer disease of sheep and goat is	a	H.S
		b	Foot & Mouth
		c	Rinderpest
		d	Enterotoxemia

24	Vaccination in livestock is mostly done by	a	Orally
		b	Intramuscular injection
		c	Intrauterine injection
		d	Subcutaneous injection
25	The total solids %age in goat colostrum is	a	10%
		b	40%
		c	15%
		d	20%
26	Marbling in meat is due to deposition of	a	Subcutaneous fat
		b	Intramuscular fat
		c	Intermuscular fat
		d	None of these
27	Chevon is the meat of	a	Cattle
		b	Camel
		c	Deer
		d	Goat
28	Mohair is the fleece of	a	Beetal goat
		b	Sheep
		c	Camel
		d	Angora goat
29	If cow gets excited or disturbed at milking time the "Hold-up" of milk occurs, it is due to release of:	a	oxytocin
		b	progesterone
		c	renine
		d	adrenalin
		e	None of these
30	A cow can best be judged when she:	a	Is dry
		b	Has just calved
		c	Is in full milk production
		d	5 years old
		e	None of these
31	The udder of good dairy cow should:	a	be long and narrow
		b	be wide and extend well up behind
		c	round, smooth and hard
		d	pendulous
		e	None of these
32	Yellow colour of cow milk is due to :	a	Riboflavin
		b	Carotene
		c	Casein
		d	Lactose
33	Which part of stomach is fully developed in a sucking calf?	a	Reticulum
		b	Rumen
		c	Omasum
		d	Abomasum
34	The maximum lactose content is found in the milk of:	a	Cow
		b	Buffalo
		c	Goat
		d	Woman
35	Mastitis in cattle is due to:	a	bacteria and viruses
		b	viruses and worm
		c	fungi and dry milking
		d	worms
36	A feed high in energy or protein, low in fiber and highly digestible is	a	Roughage
		b	Concentrate
		c	Silage
		d	Hay

37	The average lactation period of milch goats in Pakistan on average it is	a	120 days
		b	350 days
		c	400 days
		d	305 days
38	The standard lactation period of milch cattle is	a	305 days
		b	320 days
		c	250 days
		d	150 days
39	Name the most common disease transmitted to human through cow's milk:	a	Smallpox
		b	Malaria
		c	Tuberculosis
		d	Milk fever
40	Red Sindhi is a:	a	Draft breed
		b	Milch breed
		c	Dual purpose breed
		d	None of them
41	Mark the age of marking a calf for identification.	a	Ist day of birth
		b	One week age
		c	2 weeks age
		d	3 weeks age
		e	None of these
42	Mark the total number of all temporary teeth in both jaws of a cow.	a	10
		b	20
		c	32
		d	50
		e	None of these
43	Mark the optimum age for castration of male calves by bloodless castration method.	a	2 months
		b	2 to 3 months
		c	3 to 4 months
		d	4 to 6 months
		e	None of these
44	Castration in female calves is called:	a	Sterilization
		b	teaser
		c	vasectomization
		d	spaying
		e	None of these
45	Approx. age of sexual maturity of buffalo bull is:	a	15 months
		b	18 months
		c	20 months
		d	22 months
		e	None of these
46	Mark the optimum dry matter %age in green maize for silage making:	a	10-20
		b	20-30
		c	30-40
		d	40-50
		e	None of these
47	Mark the pH of good silage:	a	3.5-4.2
		b	4.2-4.5
		c	4.5-4.8
		d	Above 4.8
		e	None of these
48	Mark the max. moisture in fodder stored as hay:	a	18%
		b	25%
		c	30%
		d	40%
		e	None of these

49	One livestock unit is equal to body weight of:	a	300 kg
		b	400 kg
		c	500 kg
		d	600 kg
		e	None of these
50	Under hand method of milking good milker at a stretch can efficiently milk:	a	8 cows
		b	12 cows
		c	18 cows
		d	22 cows
		e	None of these
51	Which 'hormone' causes milk ejection?	a	Estrogen
		b	Oxytocin
		c	Thyroxin
		d	Parathormone
52	In a mixed farm, the minimum contribution to total income from animals should be:	a	50%
		b	40%
		c	20%
		d	10%
53	What is the number of pairs of chromosome in goat?	a	30
		b	27
		c	23
		d	21
54	What is the best basis for selection of bull calves for breeding?	a	Birth weight of male
		b	body conformation
		c	Dam's milk yield
		d	None of above
55	Mule is an example of:	a	Close breeding
		b	Line breeding
		c	Hybridization
		d	Out crossing
56	Which one of the following correctly represents the thumb rule for feeding of buffaloes?	a	One kilogram of concentrate for each half litre of milk
		b	One kilogram of concentrates for each litre of milk
		c	One kilogram of concentrate for each three litres of milk
		d	One kilogram of concentrates for each two and half litres of milk.
57	Which one of the following should not be fed urea?	a	Bull
		b	Suckling calves
		c	Heifer
		d	Cow
58	Name the organ where microbial digestion in non-ruminant animals occurs:	a	Stomach
		b	Small intestine
		c	Large intestine
		d	None of the above
59	Cereal grains by products are:	a	Rich in Ca
		b	Rich in P
		c	Low in P and rich in Ca
		d	Rich in P and low in Ca
60	How much milk should be fed per day to a calf during second week?	a	Half body weight
		b	¼ body weight
		c	1/8 body weight
		d	1/10 body weight
61	How many crossbred cows can be maintained on the green fodder available from one hectare of land?	a	Three
		b	Five
		c	Seven
		d	Ten

62	Thick yellowish discharge from the vagina of cow indicates:	a	Pyometra
		b	Heat cycle
		c	Mastitis
		d	Vaginitis.
63	For getting advantage from the male and female genotypes, which practice should be adopted?	a	Embryo transfer
		b	Artificial insemination
		c	Synchronisation of estrus
		d	Natural mating
64	Gestation period of goat is:	a	307 days
		b	145 days
		c	270 days
		d	60 days
65	Medicines which check the growth of micro-organisms but do not kill are known as:	a	Antibiotic
		b	Antiseptic
		c	Purgative
		d	Anthelmentic.
66	The duration of passive acquired immunity is:	a	10-20 days
		b	20-30 days
		c	30-40 days
		d	40-50 days
67	Indicate the period during which the intestinal mucosa of the new born animal is able to absorb antibody globulin of colostrums:	a	upto few hours after birth
		b	upto 48 hours after birth
		c	upto 96 hours after birth
		d	upto 144 hours after birth
68	The most suitable time for vaccination against H.S is:	a	October
		b	December
		c	Just before monsoon
		d	February
69	In which disease swelling in the neck and throat region is noticed?	a	Rinderpest
		b	Anthrax
		c	Bloat
		d	Haemorrhagic septicaemia.
70	Anti-foaming agents are used in the treatment of:	a	Impaction of rumen
		b	Primary ruminal tympany
		c	Secondary ruminal tympany
		d	None of the above
71	What is the casein percentage in milk of Sahiwal cow?	a	1.55
		b	2.55
		c	3.55
		d	4.55
72	Which is the unit for measuring the viscosity of milk?	a	Albumin
		b	Globulin
		c	Casein
		d	None of the above
73	The milk fat percentage is highest in which of the following animals?	a	Mare
		b	Buffalo
		c	Goat
		d	Cow
74	Which constituent affects freezing point of milk?	a	Fat
		b	Protein
		c	Lactose
		d	None of the above
75	The total solids content of cow milk is approximately:	a	12.5%
		b	14.5%
		c	15.3%
		d	10.2%

76	What is the Legal Standard for S. N. F % of buffalo milk?	a	8.0
		b	8.5
		c	9.0
		d	9.5
77	At what temperature the Gerber Butyrometer should be kept in hot water bath for determination of milk fat?	a	50 C
		b	65 C
		c	70 C
		d	75C
78	Indicate the nitrogenous substance in milk:	a	Lactose
		b	Uric acid
		c	Cholesterol
		d	Carotene.
79	In which portion of milk from udder bacteria content is highest?	a	Secretary phase
		b	Fore milk
		c	Mid milk
		d	Stripping
80	What is the function of milk veins?	a	To carry milk from different quarter of udder
		b	To supply blood from heart to udder
		c	To carry blood from udder towards the heart
		d	None of the above
81	Mark the desirable gain per day of healthy growing calf:	a	200g
		b	300 g
		c	400 g
		d	500 g
		e	None of these.
82	Water percentage of cow milk is approximately:	a	87%
		b	13%
		c	75%
		d	50 %
		e	None of these
83	Mark the heat period of a healthy goat:	a	21 days
		b	22 hours
		c	16 hours
		d	38 hours
		e	None of these
84	Mark the age at first calving of a crossbred heifer	a	20-24 months
		b	24-30 months
		c	36-40 months
		d	3-4 years
		e	None of these
85	Mark the best place of insemination of a buffalo in heat	a	Vulva
		b	Vagina
		c	Cervix
		d	Dioestrus
		e	None of these
86	Central pair of incisor in cattle start wearing off at:	a	5 to 6 years
		b	6 to 7 years
		c	7 to 8 years
		d	8 to 9 years
		e	None of these.
87	Mark the normal pulse rate per minute of a bullock:	a	60-70
		b	42-60
		c	98.6
		d	100
		e	None of these

88	Whether is the castrated animal of:	a	Cow
		b	Buffalo
		c	Sheep
		d	Goat
		e	None of these
89	Milking of cow yielding 15 kg milk/day should be completed within:	a	7 minutes
		b	10 minutes
		c	12 minutes
		d	15 minutes
		e	None of these
90	Mark the temperature suitable for normal spermatogenesis in bull:	a	36.6 C
		b	39 F
		c	42.6 F
		d	52.6 C
		e	None of these
91	A vasectomized male is called:	a	Steer
		b	Teaser
		c	Stag
		d	Bullock
		e	None of these
92	Which of the salt in mineral mix of cow prevents goiter:	a	Cobalt chloride
		b	Iron Sulphate
		c	Pot. Iodide
		d	Sodium chloride
		e	None of these
93	Best method of milking of cow is by:	a	Wet hand with water
		b	Dry hand
		c	Wet hand with oil
		d	Wet hand with milk froth
		e	None of these
94	Body temperature of bull as compared to scrotal temp is:	a	Less
		b	More
		c	Same
		d	Normal
		e	None of these
95	Best method of recording milk for true picture is to record:	a	Milk daily
		b	Milk weekly
		c	Certain days in a week
		d	Milk and feed weekly
		e	None of these
96	Dry matter per day needed by a buffalo of 500 kg body wt. should be:	a	12.5 kg
		b	15 kg
		c	20 kg
		d	25 kg
		e	None of these
97	For every kg of milk produced the water needed by the cow is:	a	1 to 1.5
		b	2 to 2.5
		c	3 to 3.5
		d	4 to 4.5
		e	None of these
98	Width of a double row system (tail to tail barn) is:	a	10 m
		b	11.5 m
		c	12.5 m
		d	15.4 m
		e	None of these

99	A double row dairy shed of 24.6 m x 11.54 m (L x W) can house cows	a	20
		b	30
		c	40
		d	50
		e	None of these
100	A constituent found in milk and blood both is:	a	Globulin
		b	Casein
		c	Albumen
		d	Minerals
		e	None of these
101	Parturient paresis can be prevented by feeding a diet prepartum:	a	High in calcium
		b	High in phosphorus and low in calcium
		c	High in calcium and low in phosphorus
		d	More salt in diet
102	Heamoglobinuria in buffaloes can be treated more effectively by:	a	Intravenous calcium
		b	Sodium acid phosphate
		c	Antifibrinolytic drugs
		d	Dextrose saline
103	H. S. occurs in the severe form in:	a	Cattle and buffalo
		b	Horse and mules
		c	Dogs and cats
		d	Pigs and rodents.
104	In domestic animals the fertilized egg reaches the uterus:	a	Immediately
		b	1 to 2 days after fertilization
		c	3 to 5 days after fertilization
		d	6 to 8 days after fertilization
105	Infection transmitted to human through milk is:	a	Salmonella
		b	Lesteria
		c	Clostridium
		d	Both A and B
106	The thermophilic bacteria in raw milk are:	a	Bacillus
		b	Lactobacillus
		c	Staphylococcus
		d	None of these
107	The protein content of Mutton is:	a	18.5 %
		b	23.0 %
		c	21.4%
		d	24.0%
108	The fertile life of ovulated bovine eggs is:	a	6 to 12 hours
		b	20 to 40 hours
		c	30 to 48 hours
		d	48 to 72 hours
109	Most of the glycogen in the animal body is present in:	a	Lung
		b	Spleen
		c	Liver
		d	Heart
110	Oxidative rancidity during frozen storage of meat gradually decreases:	a	Odour
		b	Flavor
		c	Taste
		d	Both A and B
111	The earliest pregnancy diagnosis test for bovine is:	a	Rectal Examination
		b	Progesterone Assay
		c	Ultrasound
		d	Radiography

112	Beta carotene is the source of:	a	Vitamin A
		b	Vitamin C
		c	Riboflavin
		d	Niacin
113	Which goat is reared for Mohair?	a	Angora
		b	Teddy
		c	Beetal
		d	Jamnapari
114	Calving interval is the total sum of:	a	Lactation length and gestation length
		b	Gestation length and dry days
		c	Service period and gestation days
		d	Open days and dry days
115	A common but effective disinfectant for water trough of cattle farm is:	a	Phenol
		b	Potassium permanganate
		c	Lime
		d	Washing soda
116	The daily dry matter requirement of cattle per 100 Kg body weight is:	a	5 to 7 kg
		b	3.5 to 4.5 Kg
		c	2 to 2.5 Kg
		d	1 to 1.5 Kg
117	Lucern hay contains;	a	14 to 15 % DCP and 50 % TDN
		b	50 % DCP and 10 % TDN
		c	30% DCP and 31 % TDN
		d	20 % DCP and 30 % TDN
118	Most essential vaccination in goats is:	a	Foot and mouth disease
		b	Pox
		c	Enterotoxemia
		d	Rinderpest
119	Bone meal is a good source of:	a	Carbohydrates
		b	Fat
		c	Phosphrous
		d	Calcium and phosphorus
120	The most appropriate method of dehorning (debudding) calves is:	a	Caustic potash stick
		b	Surgical removal
		c	Electric dehorner
		d	None of these
121	Mark the minimum milk production of Sahiwal breed in a lactation of 300 days as requirement for registration in central herd book.	a	1100 kg
		b	1400 kg
		c	1900 kg
		d	2000 kg
		e	None of these
122	Mark the age of marking a calf for identification.	a	Ist day of birth
		b	One week age
		c	2 weeks age
		d	3 weeks age
		e	None of these
123	Mark the total number of all temporary teeth in both jaws of a cow.	a	10
		b	20
		c	32
		d	50
		e	None of these
124	Mark the optimum age for castration of male calves by bloodless castration method.	a	2 months
		b	2 to 3 months
		c	3 to 4 months
		d	4 to 6 months
		e	None of these

125	Castration in female calves is called:	a	Sterilization
		b	teaser
		c	vasectomization
		d	spaying
		e	None of these
126	Approx. age of sexual maturity of buffalo bull is:	a	15 months
		b	18 months
		c	20 months
		d	22 months
		e	None of these
127	Mark the ovulation time after onset of heat in buffaloes:	a	5 hr
		b	7 hr
		c	10 hr
		d	13 hr
		e	None of these
128	Breeding age (years) of a crossbred heifer having attained 250 kg body weight is:	a	1.0-1.5 years
		b	1.5-2.0 years
		c	2.0-2.5 years
		d	2.5-3 years
		e	None of these
129	The control ectoparasites in growing calves spraying may be done with BHC solution of:	a	.2 %
		b	.3 %
		c	.4 %
		d	0.5 %
		e	None of these
130	At what age of heifers you would suggest vaccination for Rinderpest, T.B. and FMD	a	3 months
		b	4 months
		c	10 months
		d	6 months
		e	None of these
131	Mark the optimum calving interval for the high level of breeding efficiency in cows:	a	250 days
		b	310 days
		c	395 days
		d	450 days
		e	None of these
132	In general low percentage of infertility occurs in younger animals but increase in case of older cows which is approximately:	a	2-3 %
		b	3-4 %
		c	4-5 %
		d	5-6 %
		e	None of these
133	Mark the optimum dry matter %age in green maize for silage making:	a	10-20
		b	20-30
		c	30-40
		d	40-50
		e	None of these
134	Mark the pH of good silage:	a	3.5-4.2
		b	4.2-4.5
		c	4.5-4.8
		d	Above 4.8
		e	None of these
135	Mark the max. moisture in fodder stored as hay:	a	18 %
		b	25 %
		c	30 %
		d	40%
		e	None of these

136	One livestock unit is equal to body weight of:	a	300 kg
		b	400 kg
		c	500 kg
		d	600 kg
		e	None of these
137	Mark the age of calf when calf starter can be fed in gruel form:	a	3 days
		b	2 weeks
		c	4 weeks
		d	4.36 weeks
		e	None of these
138	Mark the temperature of electrical dehorner used for disbudding:	a	240 C
		b	340 C
		c	440 C
		d	540 C
		e	None of these
139	Mark the air space for cow sufficient to provide enough ventilation:	a	22.5 m ³
		b	33.5 m ³
		c	44.5 m ²
		d	55.6 m ³
		e	None of these
140	Mark the age of crossbred heifer when central pair of permanent incisor erupts.	a	1 year 9 months
		b	2 year 3 months
		c	2 year 9 months
		d	3 year 3 months
		e	none of these
141	Mark the minimum score points of a dairy cow judged on type and appearance by score card method:	a	90-95
		b	85-90
		c	80-85
		d	80-70
		e	60-50
142	Mark the length of tail to tail, face to face barn (including walls) for 40 crossbred cows:	a	14.6 m
		b	24.6 m
		c	34.6 m
		d	48 m
		e	None of these
143	Mark the width (including walls) of a tail to tail barn for keeping 50 crossbred cows:	a	5.54 m
		b	10 m
		c	11.54 m
		d	24.6 m
		e	None of these
144	The best kind of manger is made of cement with corners rounded and is:	a	Continuous
		b	Partitioned
		c	Covered
		d	Open
		e	None of these
145	Mark the size of stanchion stall per cow:	a	1.2 x 1.5 m
		b	1.5 x 1.7 m
		c	1.5 x 2.0 m
		d	2 x 2.5 m
		e	None of these
146	Under hand method of milking good milker at a stretch can efficiently milk:	a	8 cows
		b	12 cows
		c	18 cows
		d	22 cows
		e	None of these

147	If cow gets excited or disturbed at milking time the "Hold-up" of milk occurs, it is due to release of:	a	Oxytocin
		b	Progesterone
		c	Renine
		d	Adrenalin
		e	None of these
148	Mark the most important factor to consider in selection of bull:	a	His size
		b	His type
		c	His masculinity
		d	His dam
		e	None of these
149	The best and only basis for selecting the young untried bull is by:	a	Pedigree
		b	Conformation
		c	Disposition
		d	Breed
		e	None of these
150	A cow can best be judged when she:	a	is dry
		b	has just calved
		c	is in full milk production
		d	5 years old
		e	None of these

Keys MCQs Animal Production

No.	Answer	No.	Answer	No.	Answer
1	A	51	B	101	C
2	A	52	D	102	C
3	B	53	A	103	A
4	A	54	C	104	D
5	E	55	C	105	A
6	C	56	D	106	A
7	A	57	B	107	A
8	A	58	C	108	A
9	C	59	C	109	C
10	C	60	D	110	D
11	A	61	A	111	B
12	B	62	A	112	A
13	A	63	A	113	A
14	D	64	B	114	C
15	C	65	A	115	B
16	C	66	A	116	C
17	C	67	A	117	A
18	B	68	C	118	C
19	D	69	D	119	D
20	C	70	A	120	A
21	B	71	B	121	C
22	D	72	C	122	A
23	D	73	B	123	B
24	D	74	A	124	D
25	D	75	A	125	D
26	B	76	B	126	D
27	D	77	B	127	B
28	D	78	B	128	B
29	D	79	B	129	D
30	C	80	C	130	D
31	B	81	D	131	C
32	B	82	A	132	D
33	D	83	D	133	C
34	D	84	B	134	B
35	A	85	C	135	A
36	B	86	C	136	C
37	A	87	A	137	B
38	A	88	C	138	D
39	C	89	A	139	A
40	B	90	A	140	A
41	A	91	B	141	D
42	B	92	C	142	B
43	D	93	B	143	C
44	D	94	B	144	B
45	D	95	A	145	A
46	C	96	B	146	B
47	B	97	C	147	D
48	A	98	B	148	D
49	C	99	C	149	A
50	B	100	A	150	C

Veterinary Clinical Medicine and Surgery

CMS Section A: Medicine

No.	Question	Choice	Answer
1	The drug of choice for the treatment of babesiosis in crossbred cattle is:	a	Imidocarb dipropionate
		b	Ciprofloxacin
		c	Oxytetracycline
		d	Metronidazole
2	Which of the following organisms gain access to bovine udder during milking?	a	<i>Staphylococcus aureus</i>
		b	<i>E. coli</i>
		c	<i>Pseudomonas</i>
		d	<i>Klebsiella</i>
3	Impetigo is a superficial pustular dermatitis that usually begins on the	a	Lips
		b	Ears
		c	Udder
		d	Back
4	Signs of equine infectious anemia include:	a	intermittent fever and edema of ventral abdomen and legs.
		b	Sever, persistent, bloody diarrhea
		c	frequent urination, and urine containing large quantities of blood
		d	bleeding from the body orifices
5	Surf Field Mastitis Test (a screening test) to assess the leukocyte-count in milk and treatment to remove the organism from the infected udder before the signs of mastitis develop is an example of:	a	Primary prevention
		b	Secondary prevention
		c	Eradication
		d	Vector control
6	Equine glanders is caused by:	a	<i>Burkholderia mallei</i>
		b	<i>Burkholderia pseudomallei</i>
		c	<i>Burkholderia capaciae</i>
		d	<i>Burkholderia tialendesis</i>
7	What of the following is the most common skin tumor affecting horses?	a	squamous cell carcinoma
		b	viral papillomatosis
		c	basal cell carcinoma
		d	Melanoma
8	The best site for collection of CSF in canine is	a	Sub-occipital puncture
		b	Lumbo-sacral puncture
		c	Sacro-coccygeal puncture
		d	Thoraco-lumber puncture
9	Congenital pyloric stenosis can be treated by	a	Y-U pyloroplasty
		b	U-V pyloroplasty
		c	U-U pyloroplasty
		d	Y-Y pyloroplasty
10	The term used to describe a salivary mucocoele located ventral to the tongue is:	a	Ranula
		b	Lingnoma
		c	Cyst
		d	Cavity
11	The essential phenomena in shock are:	a	Increase in the vascular bed
		b	Decrease in effective volume of blood in circulation
		c	Imbalance between vascular bed and effective volume of blood in circulation
		d	None of the above
12	At which part of the oesophagus choking most commonly occurs in cattle	a	upper third
		b	middle third
		c	lower third
		d	gastro-oesophageal junction

13	The drug of choice in paracetamol (acetaminophen) toxicity is	a	Adrenaline
		b	N-acetylcystien
		c	Dexamethasone
		d	Physostigmine
14	Which of the following animal species has the lowest temperature in the morning?	a	Dog
		b	Cattle
		c	Camel
		d	Goat
15	Which of the following is contraindicated while drenching a cow	a	holding of tongue
		b	slow drenching
		c	moderate upward lifting of head
		d	adding a slightly bitter medicine to liquid to be drench
16	Coprophagia means:	a	ingestion of soil
		b	eating of feces
		c	eating of soap
		d	eat nothing
17	Bovine Ephemeral fever is also known as:	a	Three day sickness
		b	Parturient paresis
		c	Monday morning disease
		d	Dandy-walker syndrome
18	Clinical signs such as vesicle on lips, muzzle, dental pad, tongue, gingivae, interdigious spaces, and teats, and reluctant to eat and walk are common in cows/buffaloes with:	a	FMD
		b	BVD
		c	IBR
		d	MDC
19	Which of the following organism gain access to bovine udder during milking?	a	<i>Staphylococcus aureus</i>
		b	<i>E. coli</i>
		c	<i>Pseudomonas</i>
		d	<i>Klebsiella</i>
20	Incubation period of cow pox is:	a	3-7 days
		b	2-11 days
		c	21-27 days
		d	2-14 days
21	The <i>most likely</i> diagnosis for paresis immediately following calving in a Nilli Ravi buffalo is:	a	Ketosis
		b	Hypomagnesemia
		c	Milk fever
		d	Endotoxaemia
22	Serum elevation of the following enzyme is <i>good indication</i> of active muscle damage:	a	CPK
		b	AST
		c	ALT
		d	AP
23	Which of the following antimicrobial is effective against betalactamase producing anaerobic bacteria?	a	Penicillin
		b	Cephalexin
		c	Ceftiofur
		d	Metronidazole
24	The capacity of an agent to cause disease in a susceptible host define its:	a	Virulence
		b	Pathogenicity
		c	Infectivity
		d	Aggressivness
25	Differential diagnosis of anthrax include the following <i>except</i> :	a	Peracute black leg.
		b	Malignant edema
		c	Lightening stroke
		d	BSE

26	Concerning control of anthrax, following measures must be implemented <i>except</i> :	a	correct disposal of carcass.
		b	correct disinfection, decontamination and disposal of contaminated materials.
		c	vaccination of exposed susceptible animals and human in at risk occupation.
		d	bathing of healthy animals with a mixture of 1% formaldehyde and 3% glutaraldehyde.
27	Which of the following is an infectious but not a contagious disease?	a	Leptospirosis
		b	Tetanus
		c	Brucellosis
		d	Mucosal disease complex
28	Mange in dogs is caused by:	a	Sarcoptes
		b	Psoroptes
		c	Chorioptes
		d	Demodex
29	A correct statement about the proper storage of whole blood is that it:	a	Can be frozen for up to 1 year.
		b	Can be stored at 39.2 F - 50 F (4 C - 10 C) for up to 3 weeks
		c	Should be stored above 122 F (50 C).
		d	Does not need refrigeration for the first week of storage
30	In treating wounds of horses a prophylactic dose of anti-tetanus serum is:	a	1500 IU
		b	1500 to 3000 IU
		c	3000 to 4000 IU
		d	all above
31	BIPP is used with the concentration of :	a	1:2:8
		b	2:1:8
		c	8:1:2
		d	all above
32	A tumour is caused by:	a	purposeless multiplication of living cells
		b	purposeful multiplication of living cells
		c	purposeful restriction of living cells
		d	all above
33	The discovery that enabled W. C. Roentgen in getting first Nobel Prize in physics is:	a	Invention of X-ray Machine
		b	Discovery of X-rays
		c	Floroscopy
		d	None of above
34	The most common cryogenic agent used in veterinary medicine is	a	Liquid nitrogen
		b	Dry ice
		c	Freon
		d	Nitrous oxide
35	In treating wounds of horses a prophylactic dose of anti-tetanus serum is:	a	1500 IU
		b	1500 to 3000 IU
		c	3000 to 4000 IU
		d	all above
36	BIPP is used for :	a	fly repellent
		b	antiseptic
		c	dessicant
		d	all above
37	BIPP is used with the concentration of :	a	1:2:8
		b	2:1:8
		c	8:1:2
		d	all above

38	A scald is an injury caused by :	a	hot liquids
		b	steam
		c	both above
		d	none of the above
39	Strong electric current passing through the animal body may cause:	a	coma
		b	death
		c	both above
		d	none of the above
40	Heat stroke is more commonly seen in :	a	dog
		b	horses
		c	dog and horses
		d	none of the above
41	When intubating an animal, it is essential to remember that the:	a	pharynx is dorsal to the esophagus
		b	trachea is ventral to the esophagus
		c	esophagus is lateral to the pharynx
		d	trachea is ventral to the pharynx
42	Fluid losses through vomiting, diarrhea etc. are called as:	a	Continuing losses
		b	Insensible losses
		c	Pathological losses
		d	Sensible losses
43	Fluid losses through sweating and respiration are termed as:	a	Insensible losses
		b	Sensible losses
		c	Permanent losses
		d	Physiological losses
44	Which one of the following is not a cause of acquired megaesophagus in dogs?	a	Tumors
		b	Strictures
		c	Heavy metal poisoning
		d	Hirschprung's diseases
45	Bovine Ephemeral fever is also known as:	a	Three day sickness
		b	Parturient paresis
		c	Monday morning disease
		d	Dandy-walker syndrome
46	Haemorrhagic septicemia (HS) in buffaloes is caused by:	a	Pasteurella multocida type E
		b	Pasteurella multocida type B
		c	Pasteurella multocida type C
		d	Pasterulla multocida type O
47	Which of the following is an example of cestodes?	a	Trichuris vulpis
		b	Isospora felis
		c	Ancylostoma caninum
		d	Diphylidium caninum
48	Commonly used abbreviation in prescription writing 'BID' means	a	Give as required
		b	Give thrice a day
		c	Give twice a day
		d	Mix well before giving
49	An enlarged dilated colon is termed as:	a	Transverse colon
		b	Megacolon
		c	Cystic colon
		d	Enterocolon
50	A complete blood count include:	a	WBC, RBC, HB, HCT, and DLC
		b	RBC, WBC, Total solids, and clotting time
		c	WBC, DLC, and clot retraction time
		d	WBC, DLC, and BUN
51	The color of icteric serum is:	a	Pink
		b	Red
		c	Yellow
		d	Pale

52	Which antibiotic is the best treatment for canine ehrlichiosis?	a	Penicillin G
		b	Erythromycin
		c	Ceftiofur
		d	Doxycycline
53	Concerning endotoxins, which statement is least accurate?	a	endotoxin is the lipopolysacchride cell wall component of Gram negative bacteria
		b	lipopolysacchride is relased continuously from Gram negative bacteria
		c	Endotoxins can trigger shock, DIC, and MOD
		d	Endotoxin core structure (Lipid A) are similar through out wide range of Gram negative bacteria
54	Mannitol is indicated in the following condition except:	a	spinal cord injuries
		b	cranial surgery
		c	brain tumors
		d	head injuries
55	Treatment of choice for transmissible canine venereal tumor is:	a	vincristine sulphate
		b	Adriamycin
		c	Cyclophosphamide
		d	Vinblastine
56	Major cause of hypochromic microcytic anemia is:	a	iron and copper deficiency
		b	thiamine and manganese
		c	selenium and folic acid
		d	folic acid and B ₁₂ deficiency
57	A month old rotweiller pup is presented to you with protracted vomiting, dehydration, bloody diarrhea of a day old standing. Vaccination status of the pup was not current. Your most likely diagnosis is:	a	Canine parvovirus infection
		b	Garbage poisoning
		c	Canine hepatitis
		d	Canine herpes virus infection
58	MRI stands for:	a	Magnetic resonance imaging
		b	Magnetic required imaging
		c	Magnetic resonance isolation
		d	None above
59	CPR stands for:	a	clinical practical performance
		b	cardiac pulse recovery
		c	cardiopulmonary resuscitation
60	Hemoglobinuria occurs in all of the following diseases of animals except:	a	Piroplasmosis
		b	bacillary hemoglobinuria
		c	post-parturient hemoglobinuria
		d	black quarters
61	Inclusion bodies are found in RBCs in:	a	canine distemper
		b	canine hepatitis
		c	canine parvo
		d	rabies
62	A deficiency of which of the following vitamins most likely would cause central nervous sings in the cats?	a	Riboflavin
		b	Niacin
		c	Thiamine
		d	Pantothenic acid
63	Which respiratory sound can normally be detected without a stethoscope?	a	vesicular sound
		b	wheezes
		c	Stridors
		d	Crackles
64	Canine and feline esophagitis is most appropriately treated with;	a	prednisolone
		b	atropine
		c	cimetidine
		d	salicylates

65	Which of the following cells are diagnostic hallmark of immune-mediated hemolytic anemia?	a	Leptocytes
		b	Spherocytes
		c	Histiocytes
		d	Schizocytes
66	A 7 year old male German Shephard is presented to you for jaundice, and ascities. Laboratory investigations reveled: SGPT (ALT) 792 mg/dL; SAP, 1500mg/dL; Total Bilirubin 9mg/dL; Albumin, 1.6 mg/dL; globulin, 4.9 mg/dL; the most likely diagnosis is:	a	hepatic lymphosarcoma
		b	carcinomatosis
		c	liver lobe torsion
		d	hepatic cirrhosis
67	Which of the following vitamins is associated with coagulation of blood?	a	Vitamin A
		b	Vitamin C
		c	Vitamin D
		d	Vitamin K
68	Brucellosis in cattle is caused primarily by:	a	Brucella ovis
		b	Brucella melitensis
		c	Brucella abortus
		d	Brucella suis
69	Johne's disease (paratuberculosis) is usually spread among herds by:	a	purchase of infected animals
		b	flying vectors
		c	Fomities
		d	contaminated stream
70	The most common type of urinary calculi found in bovine are:	a	Phosphate
		b	Silicate
		c	Sulfate
		d	Carbonate
71	Hook worm infection in cat and dogs is primarily treated with:	a	Pyrantel pamoate
		b	Dichlorvos
		c	Disophenol
		d	Fenbendazole
72	Obstructive pulmonary disease is also referred as	a	Cryptococcal respiratory infection
		b	Aspiration pneumonia
		c	Smoke inhalation injury
		d	Chronic alveolar emphysema
73	African Horse Sickness is of	a	Five forms
		b	Three forms
		c	Four forms
		d	One form
74	Countries free of Rabies maintain this status by	a	Vaccination
		b	Quarantine
		c	a and b
		d	None
75	Clinical signs of Tetnus developed by	a	Tetanospasmin
		b	Interaction between tetanospasmin and nervous tissue
		c	Damage to nervous tissue
		d	Tetanolysin
76	Major lungworms of the horse is	a	<i>Anoplocephala</i> species
		b	<i>Gastrophilus</i> species
		c	<i>Parascaris equorum</i>
		d	<i>Dictyocaulus arnfieldi</i>
77	Drug of choice in Habronemiasis in horses	a	Diminazine
		b	Ivermectin
		c	Suramin
		d	Imidocarb
78	Mallein is a protein produced by	a	<i>Pseudomonas mallei</i>
		b	<i>Pseudomonas pseudomallei</i>
		c	<i>Pseudomonas aeruginosa</i>
		d	a and b

79	Equine distemper is also referred as	a	Equine viral arteritis
		b	Glanders
		c	Strangles
		d	Equine influenza
80	Equine herpes virus infection is also termed as	a	Equine abortion virus
		b	Equine arteritis
		c	Equine rhinopneumonitis
		d	None of above
81	In horses tetanus toxin is distributed by	a	Three routes
		b	Two routes
		c	Four routes
		d	Multiple routes
82	Pyogenic dermatitis in horses is caused by	a	<i>Streptococcus</i> species
		b	<i>Staphylococcus</i> species
		c	<i>Pseudomonas</i> species
		d	<i>Salmonella</i> species
83	Determination of seat and nature of disease is known as	a	Diagnosis
		b	History
		c	Clinical examination
		d	Physical examination
84	Probable out come of a disease is known for	a	Recovery
		b	Prognosis
		c	Tentative diagnosis
		d	Sequelae
85	The treatment directed towards the cause of a disease is known as	a	Symptomatic treatment
		b	Supportive treatment
		c	Treatment complication
		d	Specific treatment
86	Measures to prevent the spread of a disease when it likely to develop in animals known as	a	Empirical treatment
		b	Metaphylactic treatment
		c	Non specific treatment
		d	Prophylactic treatm
87	Horse shoe crab amebocytes test is used for determination of	a	Endotoxin
		b	Bacteria
		c	Virus
		d	Uric acid
88	X-rays have their greatest harmful effects upon:	a	gonadal tissue
		b	Skin
		c	Liver
		d	Lung
		e	Bone
89	The treatment that helps the immune system to combat with disease is known as	a	Specific treatment
		b	Symptomatic treatment
		c	Supportive treatment
		d	complication treatment
90	In general, superficial bacterial pyoderma in dogs require systemic antibiotics therapy for minimum of:	a	3 wks
		b	6 wks
		c	8 wks

CMS Key Section A: Medicine

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	A	19	A	37	A	55	A	73	C
2	A	20	A	38	C	56	A	74	B
3	C	21	C	39	C	57	A	75	B
4	A	22	B	40	C	58	A	76	D
5	B	23	D	41	B	59	C	77	B
6	A	24	B	42	D	60	D	78	A
7	D	25	D	43	A	61	A	79	C
8	B	26	D	44	D	62	C	80	A
9	A	27	B	45	A	63	C	81	B
10	A	28	D	46	A	64	C	82	B
11	C	29	B	47	D	65	B	83	A
12	A	30	B	48	C	66	D	84	B
13	B	31	A	49	B	67	D	85	D
14	C	32	A	50	A	68	C	86	D
15	A	33	B	51	C	69	A	87	A
16	B	34	A	52	D	70	A	88	A
17	A	35	B	53	B	71	A	89	C
18	A	36	D	54	A	72	D	90	A

CMS Section B: Surgery

No.	Question	Choice	Answer
1	Preparing a patient's skin for surgery	a	Renders the skin sterile
		b	Does nothing to affect the outcome of the surgery
		c	Reduces the bacterial flora to a level that can be controlled by the patient's immune system
		d	Is not necessary if antibiotics are given
2	Ovariohysterectomy is most commonly performed	a	In excitable dogs that need immediate calming
		b	In young female dogs
		c	In male dogs with female characteristics
		d	Exclusively in female dogs who have already had litters of puppies
3	Which of the following do/does not have to be sterile during a surgical procedure to maintain aseptic technique?	a	Mask
		b	Drapes
		c	Instruments
		d	Gloves
4	An ovariohysterectomy may be performed for all of the following reasons except	a	Prevention of prostate cancer
		b	Prevention of pyometra
		c	Sterilization of the animal
		d	Prevention of estrus
5	Which of the following statements is true?	a	Female cats over age 3 are too old to be spayed
		b	Female ferrets that are not bred or spayed are likely to develop a life-threatening anemia.
		c	All female animals become fat after spaying.
		d	It is beneficial to allow a female dog to have one litter before spaying
6	The client should be instructed to contact the veterinary hospital if any of the following occur with a splint or cast except	a	The animal chews at the splint or cast
		b	The splint or cast is wet.
		c	The leg looks swollen above or below the cast
		d	The animal is walking on or using the splinted or casted leg
7	When a dog or cat is spayed, the surgical incision is most commonly made	a	Midline, cranial to the umbilicus
		b	In the left inguinal region
		c	In the right inguinal region
		d	Midline, caudal to the umbilicus
8	A chest tube is placed when an animal has	a	Subcutaneous emphysema
		b	Pulmonary edema
		c	Ascites
		d	Pneumothorax
9	Dystocia is	a	Difficult breathing
		b	Due to a side effect of opioid drugs
		c	Difficult or abnormal birth
		d	Always a surgical emergency
10	Surgical procedures of the ear include all of the following except	a	Otoplasty
		b	Bulla osteotomy
		c	Aural hematoma drainage
		d	Enucleation

11	A declaw is also known as an	a	Orchidectomy
		b	Onychectomy
		c	Ovariohysterectomy
		d	Onychotomy
12	Which of the following is not completely removed in an ovariohysterectomy	a	Broad ligament
		b	Ovaries
		c	Uterine horns
		d	Oviducts
13	Enucleation may be required to correct	a	Third eyelid prolapsed
		b	Penile prolapsed
		c	Proptosis of the eye
		d	Aural hematoma
14	Nephrectomy refers to	a	An incision into the kidney
		b	The removal of a kidney
		c	The removal of a tumor from the kidney
		d	The biopsy of a kidney
15	Which of the following suture materials persists in the body for the longest period?	a	Polydioxanone
		b	Prolene
		c	Chromic catgut
		d	Vicryl
16	Scrotal swelling after orchidectomy is most likely due to a	a	Hematoma
		b	Seroma
		c	Hemangioma
		d	Lipoma
17	Fracture apposition refers to	a	Placing the bones back in to their normal position
		b	Keeping the bones very still until healing has taken place
		c	Removing small fragments from around the fracture
		d	Placing pins through the marrow cavity
18	What suture pattern is commonly used to close the skin of cattle following a rumenotomy?	a	Simple interrupted
		b	Simple continuous
		c	Interrupted horizontal mattress
		d	Continuous horizontal mattress
19	Which of the following agents can be used as both an antiseptic as well as a disinfectant?	a	Quaternary ammonium compounds
		b	Mercurial compounds
		c	Isopropyl alcohol
		d	Formaldehyde
20	Which of the following suture materials is most appropriate to close the muscle layers of the cow following a left-displaced abomasum surgery?	a	3-0 catgut
		b	3-0 polydioxanone
		c	3 chromic catgut
		d	3 polydioxanone
21	What is the minimum number of throws required when making a surgical knot?	a	One
		b	Two
		c	Three
		d	Four
22	Why is it important to minimize the amount of dead space when suturing?	a	To decrease the chance of infection
		b	To decrease the chance of seroma formation
		c	To improve hemostasis
		d	To minimize necrosis
23	Which of the following is an absorbable suture material?	a	Polydioxanone
		b	Prolene
		c	Silk
		d	Cotton

24	What factor will not influence how rapidly suture materials are absorbed by the body?	a	Age of the patient
		b	Presence of infection
		c	The location of the suture
		d	The composition of the suture material
25	Which of the following does not cause an increase in respiratory rate in an anesthetized animal?	a	Increased blood CO ₂
		b	Anesthesia is too light
		c	Increased PaO
		d	Hyperthermia
26	Which of the following is not considered a contaminated surgery?	a	Anal sac removal
		b	Dental extractions
		c	Intestinal anastomosis
		d	Gastrotomy
27	Which of the following is not a factor influencing the formation of exuberant granulation tissue?	a	Presence of infection
		b	Amount of missing tissue
		c	Depth of the wound
		d	Location of the wound
28	If a surgical incision is dehiscing, the discharge, if present, is most likely to be	a	Mucopurulent
		b	Serosanguineous
		c	Serous
		d	Purulent
29	Which of the following agents has been associated with causing neurologic disorders in cats	a	Chlorhexidine
		b	Povidone iodine
		c	Quaternary ammonium compounds
		d	Hexachlorophene
30	Which of the following suture materials is most likely to cause stitch granulomas if left in too long	a	Silk
		b	Cotton
		c	Nylon
		d	Prolene
31	Which of the following is not included in internal fixation of the fractures?	a	Plaster cast application
		b	Application of screws
		c	Intramedullary Pinning
		d	Bone plating
32	Regarding, laparotomy, midline incision	a	Extends from umbilicus to pubis on linea alba
		b	Extends from umbilicus to xiphoid on linea alba
		c	Extends from xiphoid to pubis on linea alba
		d	Is made lateral to linea alba from xiphoid to pubis
33	Site for epidural anesthesia in equines is between:	a	1 st and 2 nd coccygeal vertebrae
		b	2 nd and 3 rd coccygeal vertebrae
		c	3 rd and 4 th coccygeal vertebrae
		d	Last sacral and 1 st coccygeal vertebrae
34	The fracture is called as compound one if	a	The bone is broken into two pieces
		b	The bone is broken into more than two pieces
		c	Fractured bone is exposed to external environment
		d	Along-with bone, there is also damage to muscles
35	The type of wound healing in which granulation tissue forms, filling of the defect, is known as:	a	First intention
		b	Second intention
		c	Third intention
		d	Fourth intention

36	The instrument used to drive pin in medullary cavity is called as	a	Emasculator
		b	Grove director
		c	Hand chuck
		d	Ectropion forceps
37	The ideal time for elective ovariohysterectomy in female dog is	a	Within first week of life
		b	Before heat period
		c	After first heat period
		d	During estrus
38	Which of the following drug is used in splenectomy for causing shrinkage of the spleen?	a	Oxytocin
		b	Adrenaline
		c	Dexamethasone
		d	Atropine
39	The best incision site for removing pups from uterus during cesarean section is	a	Body of uterus
		b	Tip of uterine horn
		c	Centre of uterine horn
		d	Cervix
40	Stay sutures are applied for	a	Closure of hollow organs
		b	Closure of skin
		c	Better handling of an organ to be operated
		d	Ligation of blood vessels
41	When used as a preanesthetic, atropine will:	a	Provide sufficient anesthesia for minor surgery
		b	Frequently produce vomiting
		c	Inhibit excessive salivary secretion
		d	Cause the pupils to constrict
42	The soda lime in inhalation anesthesia equipment is used to absorb:	a	Nitrous oxide
		b	Nitrogen
		c	Carbon dioxide
		d	The anesthetic
43	Suture pattern which is suitable for intestinal anastomosis	a	Gambie suture
		b	Halstead suture
		c	Cross mattress suture
		d	Interrupted inverted mattress suture
44	Which is an absorbable suture material of the following	a	Linen
		b	Polyglycolic acid
		c	Vetafil
		d	Silk worm gut
45	Following are the complications of orchidectomy except	a	Autonecrosis
		b	Scrotal cellulites
		c	Local cellulites
		d	Orchitis
46	Which nerve is blocked in Enuclation	a	retro-bulbar nerve
		b	Cornual nerve
		c	Trochlear nerve
		d	Abundant nerve
47	The antimicrobial of choice for per operative use in colostomy is:	a	Erythromycin
		b	Tylosin
		c	Penicilline
		d	Cephalosporin
48	Which of the following is considered as closed wound?	a	Contusion
		b	Laceration
		c	Incision
		d	Puncture
49	Best age for amputation of tail in dog is	a	At age of 3 months
		b	Less than 3 months
		c	More than 3 months
		d	At age of one year

50	Shoeing of horse should be done at every	a	One week interval
		b	two week interval
		c	three week interval
		d	four week interval
51	Debridement of wound means	a	excising the dead muscles
		b	Excising
		c	laying open all the layers of wound, excising of the dead tissue, and through cleaning and dressing of the wound
		d	none of the above
52	While administering epidural anaesthesia, the anaesthetic solution is injected into:	a	sub-arachnoid space
		b	extradural space
		c	spinal cord
		d	subdural space
53	Cosmetic surgery in veterinary science is done:	a	to improve the appearance of the animal
		b	to satisfy the fancy of the owner
		c	to satisfy the sentiments of the owner
		d	all above
54	Transfixing ligature is preferred in:	a	small blood vessels
		b	large blood vessels
		c	both above
		d	none of the above
55	Which one of the following does not fall in the scope of Veterinary Radiology:	a	Examination of Postmortem material
		b	Age determination
		c	Examining archeological samples of animal origin
		d	Screening of narcotics
56	Pentothal sodium is administered in the dog for splenectomy at the dose rate of	a	13-30 mg/kg body weight
		b	15-25 mg/kg body weight
		c	20-35 mg/kg body weight
		d	25-35 mg/kg body weight
57	The fracture is called as compound one if	a	The bone is broken in to two pieces
		b	The bone is broken into more than two pieces
		c	Fractured bone is exposed to external environment
		d	Along-with bone there is also damage to muscles
58	Regarding the bone grafting, the bone graft that is taken from the animal of same species as that of patient is called as	a	Homograft
		b	Autograft
		c	Xenograft
		d	Hetrograft
59	<i>Diocotophyma renale</i> worm infestation is treated surgically by	a	Entrectomy
		b	Nephrotomy
		c	Entrotomy
		d	Gastrotmy
60	Which surgical procedure is designed to enlarge the vulvar opening?	a	Hysterotomy
		b	Vaginotomy
		c	Episiotomy
		d	Celiotomy
61	_____ complication occurs when bones are allowed to heal in non-functional anatomical position.	a	Mal union
		b	Osteomyelitis
		c	Improper immobilization
		d	All of these

62	In a dog showing abdominal breathing, short gasping breaths and tucked up abdomen, the most logical thing to suspect would be:	a	diaphragmatic hernia
		b	intestinal pneumonia
		c	lobar pneumonia
		d	pneumothorox
63	The principles of modern surgery first laid down by Halstead(1652-1922) are:	a	6 in number
		b	4 in number
		c	8 in number
		d	3 in number
64	Once under anesthesia, dilated pupils indicate:	a	adequate plane of anesthesia
		b	inadequate plane of anesthesia
		c	excitatory stage
		d	impeding respiratory arrest
65	Preanesthetic agent may	a	decrease the amount of anesthetic needed
		b	increase the amount of anesthetic needed
		c	decrease the oxygen needed
		d	increase the toxicity of anesthetic agent
66	Colopexy is indicated in:	a	Intussusception
		b	Recurrent Prolapse
		c	Megacolon
		d	None of above
67	The most important method of classifying sutures is:	a	Absorbability
		b	Strength
		c	Tensile strength
		d	Knot security
68	Absorbable sutures losses the majority of its strength within:	a	14 days
		b	30 days
		c	60 days
		d	120 days
69	Wound healing may be impaired by	a	Foreign bodies in the wound
		b	Inadequate blood supply
		c	Frequent movement
		d	malignant growths
		e	all of the above
70	Tenets of Halstead are:	a	Gentle handling of tissue
		b	Aseptic surgery
		c	Anatomical dissection
		d	Control of haemorrhage
		e	All above

CMS Key Section B: Surgery

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	C	15	B	29	D	43	A	57	C
2	B	16	A	30	C	44	B	58	A
3	A	17	A	31	A	45	D	59	B
4	A	18	D	32	C	46	A	60	C
5	B	19	C	33	A	47	D	61	A
6	D	20	C	34	C	48	A	62	A
7	D	21	B	35	B	49	B	63	C
8	D	22	B	36	C	50	C	64	A
9	C	23	A	37	C	51	C	65	A
10	D	24	A	38	B	52	B	66	B
11	B	25	C	39	A	53	D	67	A
12	A	26	A	40	C	54	B	68	C
13	C	27	C	41	C	55	D	69	E
14	B	28	B	42	C	56	A	70	E

Institute of Microbiology

IOM Section A: Veterinary Epidemiology and Public Health

No.	Questions	Choice	Answers
1	Venereal transmission of disease in a flock occurs through	a	Injection
		b	Ingestion
		c	Sexual interaction
		d	Doctors
2	The haemagglutinin is an antigenic determinant present on	a	Pappiloma virus
		b	IBD virus
		c	NDV
		d	Adeno virus
3	The IB virus preferably infects which organ(s)?	a	Respiratory & reproductive
		b	CNS & GIT
		c	Heart
		d	Liver
4	Infectious diseases can spread from farm to farm through inanimate objects called as	a	Reservoirs
		b	Carriers
		c	Fomites
		d	Machines
5	Which of the following disease is transmitted from parrots to human?	a	Typhoid
		b	Bird flu
		c	Psittacosis
		d	Cholera
6	Presence of maternal antibodies_____ the effect of vaccines	a	Antagonise
		b	Enhance
		c	Synergize
		d	Complement
7	Which of the following is a viral zoonotic disease of poultry?	a	IBD
		b	HPS
		c	Bird Flu
		d	CIA
8	The occasional occurrence of a disease in a population is called as	a	Epidemic
		b	Outbreak
		c	Pandemic
		d	Sporadic
9	In cohort epidemiological studies, the word “cohort” means	a	Population
		b	Group
		c	Risk
		d	Variable
10	Which of the following is an arthropod vector borne disease of chicken?	a	Avian Influenza
		b	Coccidiosis
		c	Spirochetosis
		d	CRD
11	Which of the following is not an immuno-diagnostic test?	a	PCR
		b	HA & HI
		c	ELISA
		d	Serum plate agglutination test
12	In case of stable endemic diseases, the prevalence equals to	a	C x I
		b	I x D
		c	P x D
		d	none of above
13	Which of the following is an example of hydatid cyst zoonosis?	a	Saprozoonosis
		b	Reverse zoonosis
		c	Cyclozoonosis
		d	all of the above

14	Which of the followings are included in intrinsic determinants of a disease	a	Specie
		b	EnvironmenT
		c	Genetics
		d	A & C
15	Sudden outbreak of a disease in avian population is called as	a	Epidemic
		b	Pandemic
		c	Eporntics
		d	Sporadic
16	The exposed and non-exposed groups are compared for the causation of a disease in which studies?	a	Case-control
		b	Experimental
		c	Cross-sectional
		d	non of the abole
17	For disease forecasting, which of the following system is currently used in epidemiology	a	Topogarchy
		b	GIS
		c	Computer & IT
		d	Mobile & cable
18	Lack of _____ of a diagnostic test results in false positive results	a	Specificity
		b	Predictive value
		c	Sensitivity
		d	Reproducibility
19	The nosocomial infections are acquired from	a	Plants
		b	Hospital
		c	Animals
		d	Doctors
20	Area based distribution of a disease is reffered as	a	Temporal
		b	Concomitant
		c	Sporadic
		d	Spatial
21	Amount or magnitude of a disease in a population is called as	a	% positivity
		b	Occurrence
		c	Hyperendemic
		d	none of the above
22	Making routine observations on health, productivity and environment is called as	a	GIS
		b	Monitoring
		c	Surveillance
		d	Cohort studies
23	Trans-stadial transmission of disease is mostly observed in	a	Viral diseases
		b	Protozoan diseases
		c	Bacterial diseases
		d	Cancer
24	Mortality of a disease can be calculated as	a	no. of deaths/total population
		b	no. of diseased animals/total population
		c	$M=I/D$
		d	none of the above
25	Dengue fever is a	a	Arbo-viral disease
		b	Protozoan disease
		c	Oncoviral disease
		d	Water-borne disease
26	Prophylactic administration of vitamin K in breast fed babies is an example of:	a	Health Promotion
		b	Treatment
		c	Specific protection
		d	Rehabilitation
		e	Primordial
27	In a bulk of hundred children out of whom 28 are immunized 2 of them get measles simultaneously. Subsequently 14 get measles. Assuming the efficacy of the vaccine to be 100%, what is the secondary attack rate?	a	5%
		b	10%
		c	20%
		d	21%
		e	19.4%

28	A village has a total of 100 under-five children. The coverage with measles vaccine in this age group is 60% (assuming the efficacy of vaccine to be 100%). Following the occurrence of a measles case in a child after a visit outside, twenty- six children developed measles. The secondary attack rate of measles is:	a	25%
		b	40%
		c	50%
		d	65%
		e	66%
29	In an epidemiological study the incidence of disease in females is more than that of males but the prevalence is equal in both. It indicates:	a	Case fatality is more in female
		b	Mortality in male is higher
		c	Disease is of less duration in males
		d	Females harbour disease for longer duration
		e	Males harbour disease for longer duration
30	Which one of the following is the Odds ratio, calculated from the given data? Diseased Un-diseased Positive 30 20 Negative 20 30	a	0.44
		b	1.5
		c	0.8
		d	2.25
		e	2.00
31	A total of 300 newly diagnosed patients with laryngeal cancer are allocated to treatment with either surgical excision alone or surgical excision plus radiation treatment. What is the study design?	a	Case series report
		b	Case-control study
		c	Clinical trial
		d	Cohort study
		e	Case report
32	An analysis of the race of patients who visit an emergency room reveals that 40% are white, 25% are black, 20% are Native American, and 15% are Asian. These data would best be depicted graphically with a	a	Venn diagram
		b	Cumulative frequency graph
		c	Normal curve
		d	Histogram
		e	Pie chart
33	A study was conducted in America to find out the proportion of blacks and white Americans in California. This variable chosen is	a	Nominal
		b	Ordinal
		c	Continuous
		d	Discreet numerical
		e	Dichotomous
34	A public health physician wants to study the load of hypertension in Rawalpindi district to establish special screening & treatment services in the mentioned area. Which design is more useful for this?	a	Cross sectional
		b	Case series
		c	Cohort
		d	Case control
		e	Experimental
35	Japan has a high rate of stomach carcinoma and a low rate of colon carcinoma than the U.S. Which study would you suggest to prove or support the environmental effect on the incidence of these cancers?	a	Migrant studies
		b	Case control
		c	Incidence
		d	Case reports
		e	Mortality survey
36	To give the relevant importance to hypertension control in a health service a researcher wants to study the prevalence of hypertension. He chose a cohort study. The design to assess prevalence is?	a	Inappropriate
		b	Suitable
		c	Quick
		d	Feasible
		e	Expensive
37	A researcher wants to study natural history of silicosis in a population of industrial workers. Which design is most useful?	a	Cross sectional
		b	Case report
		c	Case control
		d	Incidence
		e	Ecological survey

38	If a researcher wants to study precedence relationship between the exposure and effect, which design should he prefer?	a	Descriptive survey
		b	Ecological survey
		c	Case series
		d	Cross sectional
		e	Cohort
39	Smokers have risk of lung cancer four times more than non smokers. If smoking indicates causal association this characteristic gives:	a	Specificity
		b	Strength of association
		c	Coherence
		d	Consistency
		e	Temporal sequence
40	The incidence of gonorrhoea is continuously increasing in a particular locality. An investigator reveals that mostly sex workers are living there. This epidemic may be classified as:	a	Common source single exposure
		b	Common source continuous exposure
		c	Propagated epidemic
		d	Slow epidemic
		e	modern epidemic
41	A public health physician wants to study the load of hypertension in Rawalpindi district to establish special screening & treatment services in the mentioned area. Which design is more useful for this?	a	Cross sectional
		b	Case series
		c	Cohort
		d	Case control
		e	Experimental
42	In a prospective study of the relationship between oral contraceptive use and the subsequent risk of developing heart disease, a cohort of 1000 women were followed for 5 years. The results were as follows: Present Absent A 245 B 75 C 50 D 630 A + C = 295 B + D = 705 n = 1000 What is the incidence rate (absolute risk) of endometrial cancer among those who didn't use oral contraceptives?	a	$630 / (50 + 630)$
		b	$75 / (245 + 75)$
		c	$50 / (50 + 630)$
		d	$245 / (245 + 75)$
		e	$680 / (320 + 680)$
43	10 cases of food poisoning had been reported in hospital, 2 out of these developed mild gastrointestinal symptoms, 4 developed moderate dehydration but recovered and 2 succumbed to the disease. The characteristic of the organism of food poisoning that produces the severest form of the disease is:	a	Infectivity
		b	Pathogenicity
		c	Virulence
		d	Communicability
		e	Resistibility
44	The incidence of gonorrhoea is continuously increasing in a particular locality. An investigator reveals that in that area mostly sex workers are living. This epidemic may be classified as	a	Common source single exposure
		b	Common source continuous exposure
		c	Propagated epidemic
		d	Slow epidemic
		e	modern epidemic
45	In Rawalpindi general hospital during the month of December, a total of 10 patients were admitted with diagnosis of meningococcal meningitis. The total inpatients in that month were 800. What is the incidence rate of meningococcal meningitis for the month of December?	a	11.5 / 1000
		b	12.5 / 1000
		c	13.0 / 1000
		d	9.0 / 1000
		e	10.5 / 1000
46	While investigating a point source epidemic it was found that 120 students ate five different foods (meat burgers, fried fish, steak, rice and fruit salad). The relative risk was calculated for all those five foods. It was concluded that fish was not responsible for this epidemic. The relative risk of fish is:	a	0.7
		b	1.2
		c	1.7
		d	3.0
		e	7.0
47	Among 10 women with cervical cancer, medical records confirm a past history of herpes simplex type II infection in eight. What is the relative risk of developing cervical cancer in women with a history of HSV type II infection?	a	8/10
		b	10/8
		c	8/2
		d	2/10
		e	2/8

48	In an outbreak of cholera in a village of 2,000 population, 20 cases have occurred and 5 died. Case fatality rate is:	a	. 1%
		b	.25%
		c	. 5%
		d	. 25%
		e	.0025%
49	What is the incidence of new cases per 1000 person years in households that had a culture positive case during the first survey	a	0.02
		b	0.01
		c	1.0
		d	10
		e	20
50	In a population of 1000, measles coverage is 60%, one child goes out of station and comes back with measles from whom 20 more children get measles. Secondary attack rate of measles is:	a	0.65%
		b	5%
		c	6%
		d	6.5%
		e	7%

IOM Key Section A: Veterinary Epidemiology and Public Health

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1.	C	11.	A	21.	D	31.	C	41.	A
2.	C	12.	B	22.	B	32.	E	42.	C
3.	A	13.	C	23.	B	33.	E	43.	C
4.	C	14.	D	24.	A	34.	A	44.	B
5.	C	15.	C	25.	A	35.	A	45.	B
6.	A	16.	D	26.	C	36.	A	46.	A
7.	C	17.	B	27.	C	37.	D	47.	C
8.	D	18.	C	28.	E	38.	E	48.	D
9.	B	19.	B	29.	A	39.	B	49.	D
10.	C	20.	D	30.	D	40.	B	50.	B

Section B: Food Microbiology and Immunology

No.	Question	Choice	Answer
1	In a antigen haptens are	a	Immunogenic
		b	Non-immunogenic
		c	Antigenic
		d	None of these
2	The antibody that is first formed after infection is	a	IgG
		b	IgM
		c	IgD
		d	IgE
3	Antibodies in our body are produced by	a	B-lymphocytes
		b	T-lymphocytes
		c	Monocytes
		d	RBC's
4	The antibody class/type which can cross placenta is	a	IgE
		b	IgG
		c	IgA
		d	IgM
5	Monoclonal antibodies are produced by	a	Hybridoma technology
		b	Biotechnology
		c	Fermentation Technology
		d	None of these
6	First site of entry of antigen is	a	Antibody molecules
		b	Unbroken skin
		c	Antigen molecules
		d	Phagocytic cells
7	The cellular immune response is mediated by	a	B cells
		b	T cell
		c	B & T cells
		d	Endothelial cells
8	The reaction of soluble antigen with antibody is known by	a	Precipitation
		b	Flocculation
		c	Agglutination
		d	Complement fixation
9	Interferon is composed of	a	Lipids
		b	Lipoprotein
		c	Glycoprotein
		d	Nucleic acid
10	Active immunity is induced by	a	Infection
		b	Placental transfer of antibodies
		c	Injection of antibodies
		d	Injection of gamma- globulins
11	Immunity is lifelong following	a	Diphtheria
		b	Tetanus
		c	Measles
		d	Yellow fever
12	To prepare vaccine for small pox, the material used by Edward Jenner is	a	Small pox material
		b	Chicken pox material
		c	Cow-pox material
		d	Meas les material
13	Antibody present in colostrums is	a	IgG
		b	IgA
		c	IgM
		d	IgE

14	Anthrax vaccine is prepared by	a	Attenuated bacilli
		b	Killing the bacilli
		c	Live bacilli
		d	None of these
15	Example for cell-mediated immunity are	a	Tuberculin type
		b	Contact dermatitis
		c	Granulomatous
		d	All of these
16	DPT, is used as vaccine for	a	Diphtheria
		b	Pertussis vaccine
		c	Tetanus toxoid
		d	All of these
17	If the microbes used in the vaccine are obtained from patient, they are	a	Anti viral vaccines
		b	Anti bacterial vaccines
		c	Autogenous vaccines
		d	None of these
18	Following substance may act as an antigen	a	Egg albumin
		b	RBC and serum
		c	Vegetable protein
		d	Snake venom
		e	All of these
19	Which antibody class is majorly involved in mucosal immunity?	a	IgY
		b	IgA
		c	IgD
		d	IgE
20	The oldest and traditionally used adjuvant in vaccines is	a	BCG
		b	ISCOMS
		c	Alum
		d	Montanide
21	Most spoilage bacteria grow at	a	acidic pH
		b	alkaline pH
		c	neutral pH
		d	any of the pH
22	Water activity can act as	a	an intrinsic factor determining the likelihood of microbial proliferation
		b	a processing factor
		c	an extrinsic factor
		d	all of the above
23	The time temperature combination for HTST pasteurization of 71.1°C for 15 sec is selected on the basis of	a	<i>Coxiella burnetii</i>
		b	<i>E. coli</i>
		c	<i>B. subtilis</i>
		d	<i>C. botulinum</i>
24	Milk fermentation to produce cheese is done initially by inoculating with	a	<i>Saccharomyces cerevisiae</i>
		b	<i>Streptococcus lactis</i> and <i>Lactobacillus spp.</i>
		c	<i>Acetobacter</i> and <i>Gluconobacter</i>
		d	<i>Lactobacillus bulgaricus</i> and <i>Streptococcus thermophiles</i>
25	_____ is resistant to heat due to the presence of Mycolic acid	a	<i>Mycobacterium tuberculosis</i>
		b	<i>Costridium tetani</i>
		c	<i>Bacillus cereus</i>
		d	<i>E coli</i>
26	Water content of milk ranges from	a	20-30 %
		b	40-50 %
		c	85-90%
		d	None of the above

27	Bacillus cereus causes Sweet curdling in milk by the release of the enzyme	a	Lactase
		b	Coagulase
		c	Protease
		d	Amylase
28	In the low temperature long time method of pasteurization, milk is heated at	a	90 °C for 30 mintues
		b	85 °C for 25 mintues
		c	63 °C for 20 minutes
		d	None of the above
29	_____ are live microbial feed supplements that have beneficial effects on the host by improving its intestinal microbial balance	a	Probiotics
		b	Prebiotics
		c	Bacteriophages
		d	Starter culture
30	The first scientist to give the concept of probiotics was	a	Metchnikoff
		b	Fleming
		c	D' Herelle
		d	Louis Pasteur
31	Green color in milk is caused by	a	<i>Bacillus cereus</i>
		b	<i>Campylobacter jejuni</i>
		c	<i>Clostridium perfringens</i>
		d	<i>Pseudomonas aerogenosa</i>
32	Red color in milk is caused by	a	<i>E.coli</i>
		b	<i>Brewibacterium erythrogenes</i>
		c	<i>Sarcinia marcense</i>
		d	Both b and c
33	Yellow color in milk is caused by	a	<i>Brucella mellitensis</i>
		b	<i>Pseudomonas Synxantha</i>
		c	<i>Alcaligenes</i>
		d	<i>Aspergillus</i>
34	_____ comprises of all the milk contents except milk fat and casein protein	a	Butter milk
		b	Mik whey
		c	Curd
		d	Yogurt
35	Nestle Yogurt is obtained by monoculture of	a	<i>Lactococcus lactis</i>
		b	<i>Streptococcus</i>
		c	<i>Micrococus</i>
		d	None of the above
36	Sharp sour flavour in milk is due to the environment of _____ species	a	<i>Bacillus</i>
		b	<i>Mycobacterium</i>
		c	<i>Clostridium</i>
		d	<i>Streptococcus</i>
37	In Dry Milk water activity is reduced to	a	0.2
		b	0.5
		c	0.7
		d	0.8
38	Oxidation of Unsaturated Fatty acids imparts _____ odor	a	Stringent
		b	tellowy
		c	pleasant
		d	None of the above
39	The term _____ is used widely particularly in fermented sausage manufacturing	a	Front slopping
		b	Back slopping
		c	Side slopping
		d	None of the above
40	A typical flavour of fishiness is produced by	a	<i>Acromium hydrophila</i>
		b	<i>Pseudomonas aeruginosa</i>
		c	<i>Mycoplasma bovis</i>
		d	Both a and b

41	_____ spores are added to the curds just before the final cheese processing	a	<i>Penicillium notatum</i>
		b	<i>Penicillium chrysogenum</i>
		c	<i>Penicillium roquefortii</i>
		d	All of these
42	Infection by <i>Coxiella</i> results in a disease called	a	Q fever
		b	Coxiellosis
		c	Brucellosis
		d	None of the above
43	_____ an enzyme from calf stomachs, but now produced by genetically engineered microorganisms, can also be used to promote curd formation	a	Amylase
		b	Protease
		c	Reni
		d	Both a and c
44	Gas production by _____ contributes to final flavor development and hole or eye formation in this cheese	a	<i>Bifidobacterium</i>
		b	<i>Propionibacterium</i>
		c	<i>Lactobacillus</i>
		d	<i>Streptococcus</i>
45	_____ is found in soft cheeses and unpasteurized milk; it can even survive below freezing temperatures and can therefore withstand refrigeration	a	<i>Listeria</i>
		b	<i>Brucella</i>
		c	<i>Salmonella</i>
		d	<i>Streptococcus</i>
46	Potato like flavour in milk is caused by	a	<i>Pseudomonas mucidolense</i>
		b	<i>Pseudomonas aeruginosa</i>
		c	<i>Bacillus subtilis</i>
		d	None of these
47	_____ strain of <i>E. coli</i> has been associated with a number of food-borne outbreaks and is the cause of Bloody Diarrhea	a	O157:H7
		b	O151:H8
		c	O111:H8
		d	All of these
48	pH of milk is about	a	3.2
		b	4.4
		c	6.8
		d	8.5
49	Camembert cheese is inoculated with spores of	a	<i>Penicillium camemberti</i>
		b	<i>Aspergillus fumigatus</i>
		c	<i>Mucor</i>
		d	All of these
50	_____ is an important food borne intoxication	a	Botulism
		b	Measles
		c	Salmonellosis
		d	None of the above

IOM Key Section A: Food Microbiology and Immunology

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1.	B	11.	C	21.	C	31.	D	41.	C
2.	B	12.	C	22.	D	32.	D	42.	A
3.	A	13.	B	23.	A	33.	B	43.	C
4.	B	14.	A	24.	B	34.	B	44.	B
5.	A	15.	D	25.	A	35.	A	45.	A
6.	B	16.	D	26.	A	36.	C	46.	A
7.	C	17.	C	27.	C	37.	A	47.	A
8.	A	18.	E	28.	C	38.	B	48.	C
9.	C	19.	B	29.	A	39.	B	49.	A
10.	A	20.	C	30.	A	40.	A	50.	A

IOM Section C: Molecular Biology

S.No	Question	Choice	Answers
1	In order to clone eukaryotic DNA into prokaryotic cells	a	DNA with both exons and introns must be used
		b	DNA without introns must be added
		c	RNA with both exons and introns must be used
		d	exons must be removed from eukaryotic DNA
2	In the process of cloning eukaryotic DNA into prokaryotic cells, the role of reverse transcriptase is to make	a	double-stranded eukaryotic cDNA from mature mRNA
		b	mature mRNA from precursor mRNA
		c	bacterial DNA from eukaryotic DNA
		d	double-stranded DNA with introns added back
3	cDNA is	a	DNA with both introns and exons that can be cloned into prokaryotes
		b	DNA with only introns that can be cloned into prokaryotes
		c	eukaryotic DNA with only exons that can be cloned into prokaryotes
4	The segment of the DNA molecule where messenger RNA synthesis begins is called the...	a	promoter region.
		b	sigma factor.
		c	transcription terminator.
		d	polymerase.
5	The complimentary messenger RNA strand that would be synthesized from the DNA base sequence of CTGAC would be...	a	GACTG
		b	UGACU
		c	AGTUG
		d	GACUG
6	The name of the structure that causes the synthesis of RNA to cease is called the...	a	promoter region
		b	sigma factor
		c	transcription terminator
		d	Polymerase
7	Restriction enzymes	a	cut donor DNA evenly so smooth edges result
		b	cut donor DNA but do not affect plasmids
		c	make staggered cuts at specific sequences in DNA in both donor DNA and plasmid
		d	are used to incorporate plasmids into bacterial host cells
8	The complimentary messenger RNA strand that would be synthesized from the DNA base sequence of CTGAC would be...	a	GACTG
		b	UGACU
		c	AGTUG
		d	GACUG
9	Which of the following are limitations of DNA polymerase?	a	it can only add bases to the exposed 5' end of a pre-existing strand
		b	it can only replicate the leading strand
		c	it can only replicate the lagging strand
		d	none of the above
10	The enzyme _____ unzips and unwinds the DNA molecule.	a	DNA polymerase
		b	helicase
		c	primase
		d	DNA ligase

11	Which of the following statements about DNA replication is TRUE?	a	the leading strand is replicated continuously, while the lagging strand is replicated discontinuously
		b	the leading strand is replicated discontinuously, while the lagging strand is replicated continuously
		c	both the leading and lagging strands are replicated continuously
		d	both the leading and lagging strands are replicated discontinuously
12	Which of the following events do NOT occur in prophase of mitosis?	a	DNA condenses to form chromosomes
		b	nuclear membrane breaks down
		c	nucleolus breaks down
		d	chromosomes are replicated
13	The mitotic spindle fibers attach to chromosomes via special structures termed	a	centrioles.
		b	asters.
		c	kinetochores.
		d	centrosomes.
14	Which of the following statements about microtubules during anaphase is TRUE?	a	those attached to chromosomes elongate, while those that are unattached shorten
		b	those attached to chromosomes shorten, while those that are unattached elongate
		c	both attached and unattached microtubules shorten
		d	both attached and unattached microtubules elongate
15	Phagocytes are attracted by all of the following except	a	phospholipids released by injured cells
		b	components of the complement system
		c	chemical products of microorganisms
		d	Lysosomes
16	In phagocytosis the digested contents are eliminated by	a	endocytosis
		b	exocytosis
		c	opsonization
		d	C3b
17	A lysosome	a	is found only inside the bacterium being ingested
		b	is an organelle that makes a bacterium motile
		c	contains lysozyme and proteases which digest bacteria
		d	contains enzymes specific to the receptors on the bacterium being eliminated
18	Lysosomes are membrane-bound vesicles that arise from the	a	nucleus.
		b	mitochondria.
		c	endoplasmic reticulum
		d	Golgi apparatus.
19	The lysosome contains _____ enzymes.	a	photosynthetic
		b	Anabolic
		c	hydrolytic
		d	Melancholic
20	Which of the following cells will be expected to contain the most active lysosomes?	a	brain cell
		b	skin cell
		c	kidney cell
		d	phagocytosing white blood cell

21	The number of chromosomes in daughter cells produced by meiosis is _____ the number of chromosomes in daughter cells produced by mitosis.	a	one-fourth
		b	Half
		c	equal to
		d	Twice
22	Which of the following is unique to meiosis?	a	nuclear membrane breaks down
		b	DNA organizes into chromosomes
		c	crossing-over
		d	chromosomes align along the central plate of the cell
23	The purpose of PCR is to	a	make more copies of DNA primers to increase protein synthesis
		b	make many copies of an organism's DNA sequence so a small number of organisms will become large enough to be identified
		c	make more RNA so large units of protein can be synthesized
		d	recycle DNA using thermocyclers
24	For DNA amplification to occur, which of the following are needed?	a	loose ribonucleotides
		b	RNA primers
		c	thermostable DNA polymerase
		d	b and c
25	Taq polymerase starts copying at	a	the end of free single-stranded RNA
		b	any open point
		c	RNA primers attached to the end of the desired gene
		d	DNA primers attached to the end of the desired gene
26	The first step in cloning a gene is to	a	insert a plasmid into a bacterium
		b	isolate the DNA from the organism that contains the desired gene
		c	plate cells on agar
		d	treat plasmids with restriction enzymes
27	Plasmids are put into bacterial cells by	a	restriction enzymes
		b	DNA ligase
		c	binding of cohesive sticky ends
		d	transformation
28	How many different amino acids are found in naturally-occurring proteins?	a	20
		b	16
		c	24
		d	64
29	Which of the following correctly describes chromatin?	a	The complex of DNA and protein from which chromosomes are composed.
		b	The total genetic content of a cell.
		c	The proteins that give structural support to a chromosome.
		d	Unpacked DNA; the form in which DNA exists when it is not tightly packed into chromosomes.
30	Which of the following is a common feature of all cells?	a	Intracellular organelles
		b	A lipid cell membrane.
		c	A nuclear membrane.
		d	An RNA genome.
31	Which of the following is a typical feature of viruses?	a	3,000 - 4,000 genes.
		b	A genome that may be single or double-stranded DNA or RNA.
		c	The ability to replicate independently
		d	The ability to synthesize ATP

32	What is the main function of the smooth endoplasmic reticulum?	a	It generates energy to drive other biochemical processes
		b	It is the site of the modification of proteins following their translation from RNA.
		c	It synthesises proteins using RNA as a template
		d	It is the site of destruction of unwanted biological materials
33	Which of the following is a purine?	a	Adenine
		b	Thymine
		c	Uracil
		d	Cytosine
34	Which of the following replaces thymine in RNA	a	Adenine
		b	Guanine
		c	Uracil
		d	Cytosine
35	Which reaction in DNA replication is catalysed by DNA ligase?	a	Addition of new nucleotides to the lagging strand.
		b	Addition of new nucleotides to the leading strand.
		c	Base pairing of the template and the newly formed DNA strand
		d	Formation of a phosphodiester bond between the 3'-OH of one Okazaki fragment and the 5'-phosphate of the next on the lagging strand.
36	During which phase of the cell cycle is DNA replicated?	a	G1 phase.
		b	S phase.
		c	G2 phase.
		d	M phase
37	What would be the effect on the primary structure of the coded protein if a single base was deleted from a messenger RNA transcript?	a	No effect.
		b	A single amino acid residue is changed.
		c	A complete change in amino acid sequence from the point of the deletion.
		d	A premature termination of the chain at the point of mutation.
38	Base substitutions:	a	May result in nonsense mutations
		b	Can affect splicing
		c	Are always pathogenic
		d	Can affect gene expression
39	Nucleotide contains	a	Sugar, nitrogen base
		b	Sugar, a nitrogen - containing base and a phosphate molecule
		c	Monomer fat and polysaccharide
		d	Sugar, glycerol and phosphate
40	Sugar found in RNA is	a	Galactose
		b	Fructose
		c	Ribose
		d	Deoxyribose
41	Sugar found in DNA is	a	Galactose
		b	Fructose
		c	Ribose
		d	Deoxyribose

42	Deoxyribose is	a	pentose sugar
		b	hexose sugar
		c	Pyrimidine of DNA
		d	Nitrogenous base
43	Contain an anti-codon	a	tRNA
		b	mRNA
		c	rRNA
		d	cDNA
44	Which of the following is not requirement for protein synthesis	a	Ribosome
		b	Peptidyl transferase
		c	Spliceosome
		d	Amino acyl-tRNA synthetase
45	Enzyme required for transcription is	a	Restriction enzymes
		b	DNA polymerase
		c	RNA polymerase
		d	RNase
46	Restriction enzyme capable of making internal cut in DNA is	a	Restriction exonuclease
		b	Restriction endonuclease
		c	RNA polymerase
		d	RNase
47	Single stranded unpaired extensions formed by restriction enzyme upon cleavage is called	a	blunt end
		b	sticky end
		c	Flush end
		d	none of these
48	All of the following are thermostable polymerase except	a	Taq polymerase
		b	Vent polymerase
		c	DNA polymerase III
		d	pfu polymerase
49	The first step in PCR is	a	Denaturation
		b	annealing
		c	primer extension
		d	none of these
50	The process of binding of primer to denatured DNA strand is called	a	Denaturation
		b	annealing
		c	renaturation
		d	none of these

IOM Key Section C: Molecular Biology

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	B	11	A	21	B	31	B	41	D
2	A	12	D	22	C	32	D	42	A
3	C	13	C	23	B	33	A	43	A
4	A	14	B	24	C	34	C	44	C
5	D	15	D	25	D	35	D	45	C
6	C	16	B	26	B	36	B	46	B
7	C	17	C	27	D	37	C	47	B
8	D	18	D	28	A	38	A	48	A
9	D	19	C	29	A	39	B	49	A
1	B	20	D	30	B	40	C	50	B

IOM Section D: General Microbiology & Bacteriology

No.	Question	Choice	Answer
1	Which of the following is a non-pathogen	a	Yersinia Pestis
		b	Cryptococcus neoformans
		c	Anabaena spp
		d	Salmonella typhi
2	Prokaryotes are distinguished from eukaryotes by their	a	Phospholipid plasma membrane
		b	Cytoplasm with ribosomes
		c	Nucleoid instead of nucleus
		d	Membrane bound organelles
3	Ribosomes are found in the eukaryotic cell	a	in Mitochondria
		b	Free in the cytoplasm
		c	On the endoplasmic reticulum
		d	All of the above
4	Algae are always:	a	Photosynthetic
		b	Blue-green
		c	Unicellular d. Eukaryotic
		d	
5	Which of the following does not allow observation of living cells?	a	Brightfield Microscope
		b	Darkfield Microscope
		c	Phase contrast microscope
		d	Fluorescent microscope
6	Singular, small circular DNA is common to:	a	Chloroplasts, mitochondria, golgi complex
		b	Chloroplasts, nucleoli, Mitochondria
		c	Prokaryotes, nucleoli, Chromosomes
		d	Chloroplasts, Prokaryotes, Mitochondria
7	Which of the following component is found in aracheobacterial cell walls?	a	Lipoprotein
		b	Peptidoglycan
		c	Pseudopeptidoglycan
		d	Phospholipid
8	The arrangement of bacterial cells is	a	Determined by growth medium
		b	Caused by chemotaxis
		c	A genetically determined trait
		d	All of the above
9	The plasma membrane has many function, not including:	a	Regulation of reproduction
		b	Monitoring of the environment
		c	Replication of the chromosome
		d	Protection against osmoticitysia
10	Bacteria treated with lysozyme are:	a	Pleomorphic
		b	Protoplasts
		c	Capules
		d	Mycoplasma
11	Which of the following is not found in the growth curve?	a	Lag phase
		b	Log phase
		c	Stationary phase
		d	Chemostat
12	Minimal media must contain;	a	A source of trace element
		b	Source of purine
		c	Source of pyrimidines
		d	NaCl

13	Candle jars are used to culture..... and reduce atmospheric	a	Anaerobes, oxygen
		b	Anaerobes, carbondioxide
		c	Microaerophiles, carbondioxide
		d	Microaerophiles, oxygen
14	Organisms that thrives in elevated carbondioxide are called:	a	Microaerophiles
		b	Anaerobes
		c	Aerotolerant
		d	Caprophiles
15	Which of the following drug is used to treat fungal infections?	a	erythromycin
		b	penicillin
		c	amphotericin
		d	Quinine
		e	none of the above
16	Pili/fimbriae are thin short appendages extruding from the cytoplasmic membrane of certain bacteria.	a	movement
		b	attachment
		c	DNA transfer
		d	a and b
		e	b and c
17	What organism is considered an index of fecal pollution of drinking water supplies?	a	Rota Virus
		b	E. coli
		c	Salmonella spp
		d	Hepatitis E virus
18	Protective mechanisms used by bacteria to survive in the host may be	a	capsules
		b	M protein
		c	various enzymes
		d	all of the above
19	Endotoxins are heat stable lipopolysaccharide-protein complexes which form the structural components of the cell wall of bacteria. Which of the following statement regarding endotoxin is correct?	a	all have the same effect regardless of bacterial source
		b	are found in both gram positive and gram negative bacterial cell wall
		c	are part of the cell wall of gram positive bacteria only
		d	none of the above statement is correct
20	Which concentration of ethanol is most effective for this purpose?	a	100%
		b	70%
		c	50%
		d	30%
21	Which of the following are reservoirs for human infection	a	food and water
		b	humans
		c	animals
		d	all of the above
22	A typical growth curve consists of 4 phases. Which is the correct sequence?	a	exponential, lag, stationary, death
		b	lag, exponential, stationary, death
		c	stationary, exponential, lag, death
		d	lag, stationary, exponential, death
23	Which of the following are true about viruses?	a	they are not composed of cells
		b	as virions they cannot metabolize nutrients
		c	they alone cannot reproduce themselves
		d	they contain DNA or RNA
		e	all of the above

24	The correct sequence for the viral life cycle is:	a	attachment, biosynthesis, penetration, maturation, release
		b	penetration, biosynthesis, attachment, maturation, release
		c	attachment, penetration, biosynthesis, maturation, release
		d	biosynthesis, attachment, penetration, maturation, release
25	Compound microscope has:	a	One eye piece
		b	Two eye pieces
		c	One eye piece and one objective
		d	None of all
26	Lyophilizer is used for:	a	Preserving cultures
		b	Maintaining temperature
		c	Sterilization
		d	None of the above
27	Plastic wares are sterilized	a	By autoclaving
		b	In hot air oven
		c	By Tyndalization
		d	None of all
28	Autoclaving is done at:	a	121 °C/15 lb. pressure
		b	121 °C/115 lb. pressure
		c	121 °F/15 lb. pressure
		d	121 °F/115 lb. pressure
29	The principal dye in Gram Staining is:	a	Methylene blue
		b	Safranin
		c	Carbolfuchsin
		d	None of all
30	Iodine is used in Gram staining as:	a	Mordant
		b	Principal dye
		c	Decolourizer
		d	None of the above
31	Special staining is used for:	a	Special bacteria
		b	Special virus
		c	Special structures of bacteria
		d	None of all
32	MacConkey agar is:	a	General purpose medium
		b	Selective medium
		c	Transport medium
		d	All of the above
33	Agar agar in the medium is used to provide:	a	Proteins
		b	Minerals
		c	Vitamins
		d	None of all
34	Live bacterial cells can be examined	a	After Gram staining
		b	In dark field microscope
		c	In bright field microscope
		d	After special staining
35	After Gram staining, G+ ve bacteria will be of:	a	Purple colour
		b	Red colour
		c	Green colour
		d	Pink colour
36	In simple staining method:	a	single dye is used
		b	simple dye is used
		c	only iodine is used
		d	None of all

37	After simple staining, bacterial cells may be of:	a	red colour
		b	blue colour
		c	violet colour
		d	All of all
38	ZN staining is done for	a	Salmonella
		b	Mycobacterium
		c	Mycoplasma
		d	All of the above
39	Nutrient agar is a:	a	Selective medium
		b	Basal Medium
		c	Differential medium
		d	None of all
40	Anaerobic jar is used for the cultivation of:	a	Anaerobic bacteria
		b	only halophiles
		c	only thermophiles
		d	All of the above
41	Smoking is prohibited in microbiology lab due to:	a	burning
		b	culture contamination
		c	chemical in lab.
		d	None of all
42	Cavity slide is used to study bacterial	a	motility
		b	shape
		c	staining reaction
		d	all of the above
43	Oil immersion lens has magnification power:	a	4 X
		b	10 X
		c	40 X
		d	100 X
44	Light source in bright field microscope is:	a	UV light
		b	Infrared
		c	blue light
		d	None of all
45	Beakers are sterilized at:	a	171 °C
		b	171 °F
		c	121 °C
		d	121 °F
46	Principal dye in Ziehl-Neelsen staining is:	a	Crystal violet
		b	Safranin
		c	Methylene blue
		d	None of all
47	All is true about broth except:	a	liquid medium
		b	solidify below 40 °C
		c	Enrichment
		d	source of nutrients
48	All is true about agar slant except:	a	Slope form
		b	Preservation of cultures
		c	for anaerobic bacteria
		d	Solid medium
49	Colour of G- ve bacteria after decolourizer	a	Red
		b	Colourless
		c	Blue
		d	Pink
50	Which of the following is likely to contain structures composed of N-acetylmuramic acid and N-acetylglucosamine:	a	Spheroplasts
		b	Mycoplasmata
		c	Escherichia coli
		d	Protoplasts

51	Typhoid in human beings is caused by:	a	Salmonella spp
		b	Brucellaspp
		c	E.coli
		d	Shigella spp.
52	Quelling reaction is a rapid technique for the identification of:	a	E.coli
		b	Streptococcus spp.
		c	Staphylococcus spp.
		d	Mycoplasma spp.
53	The followings are produced by Staphylococcus aureus except:	a	Protein A
		b	Hemolysins
		c	Leukocidins
		d	Tetnospasmin
54	The following are non-spore forming genera except	a	Pasteurella
		b	Salmonella
		c	Clostridium
		d	Mycobacterium
55	The following species of Brucella causes diseases in goats:	a	Brucellamelitensis
		b	Brucellasuis
		c	Brucellacanis
		d	Brucellaabortus
56	The followings are Acid Fast negative bacteria except”	a	Staphylococcus
		b	Streptococcus
		c	Mycobacterium
		d	Mycoplasma
57	DPT vaccination is done against:	a	Corynebacterium
		b	Neisseria
		c	Pasteurella
		d	Enterobacter
58	The followings strains of Proteus have cross reacting antigens with Rickettsia except:	a	OX-19
		b	OX-2
		c	OX-K
		d	OX-3
59	Botulism is caused by:	a	Proteus
		b	Clostridium
		c	Bacillus
		d	Klebsiella
60	Following genera are Gram negative except	a	E.coli
		b	Salmonella
		c	Shigella
		d	Bacillus

IOM Key Section D: General Microbiology & Bacteriology

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	C	13	D	25	D	37	D	49	B
2	C	14	D	26	A	38	B	50	C
3	D	15	C	27	D	39	B	51	A
4	A	16	E	28	A	40	A	52	B
5	D	17	B	29	D	41	D	53	D
6	D	18	A	30	A	42	A	54	C
7	C	19	A	31	C	43	D	55	A
8	C	20	B	32	B	44	D	56	C
9	B	21	D	33	D	45	A	57	A
10	B	22	B	34	B	46	D	58	D
11	D	23	E	35	A	47	B	59	B
12	A	24	C	36	A	48	C	60	D

Miscellaneous
Miscellaneous Section A:

S.No	Question	Choice	Answers
1	Which of the following is not an indication for performing a urine culture?	a	White blood cells seen on urinalysis sediment
		b	Isosthenuria
		c	Bacteria already visible on urinalysis sediment
		d	Glucosuria
2	Which of the following is not a treatment commonly used for protein losing nephropathies, such as glomerulonephritis and amyloidosis, and their sequelae?	a	Aspirin
		b	Dietary protein restriction
		c	Angiotensin converting enzyme inhibitors
		d	Antibiotics
3	Which value is not usually increased in canine hyperadrenocorticism?	a	Blood urea nitrogen
		b	ALT (alanine amino transferase)
		c	Serum cholesterol
		d	SAP (serum alkaline phosphatase)
4	If you had your choice, which blood type would you avoid administering in a cat for an emergency blood transfusion?	a	Type 1.7
		b	Type C
		c	Type B
		d	Type A
5	Which is not a common clinical sign of hyperadrenocorticism	a	Distended abdomen
		b	Vomiting
		c	Increased panting
		d	Increased occurrence of infections
6	What is the most common tumor of the oral cavity in the cat?	a	Lymphoma
		b	Squamous cell carcinoma
		c	Fibrosarcoma
		d	Melanoma
7	A 10 year old mixed breed dog presents for a 1 month history of anorexia, lethargy, and inappetance. Physical exam reveals pale mucous membranes and a mild tachycardia. The CBC shows an MCV of 50 cubic microns, MCH 12 pg, MCHC 25, HCT 22%, reticulocyte 40,000/uL. What is the most likely diagnosis for this dog?	a	Mycoplasma felis infection
		b	Anemia of chronic disease
		c	Babesiosis
		d	Congenital portosystemic shunt
		e	Iron deficiency
8	Which of these is considered a hepatic leakage enzyme in the dog?	a	Bile acids
		b	Aspartate aminotransferase
		c	Bilirubin
		d	Alkaline phosphatase
9	Which of the following is a complication of long term sling application on a limb?	a	Osteoarthritis
		b	Pathologic fractures
		c	Contracture of muscles
		d	Neurogenic muscular atrophy
10	All of the following are radiographic signs suggestive of megaesophagus except _____.	a	Tracheal stripe sign
		b	Abaxial deviation of the main stem bronchi
		c	Fluid or food distended esophagus
		d	Gas filled esophagus
11	What is the most common type of lymphoma seen in cats that are positive for FeLV?	a	Multicentric
		b	Mediastinal
		c	Thymic
		d	Alimentary
		e	Renal

12	Which of the following anesthetics has the least effect on heart rate?	a	Ketamine
		b	Diazepam
		c	Thiopental
		d	Propofol
13	Which of these stones tends to form in alkaline urine?	a	Cysteine
		b	Silica
		c	Struvite (magnesium ammonium phosphate)
		d	Calcium oxalate
14	A tibial plateau leveling osteotomy is performed in dogs to correct for this.	a	Avulsion of the tibial tuberosity
		b	Ruptured caudal cruciate ligament
		c	Torn medial collateral ligament
		d	Torn medial meniscus
		e	Ruptured cranial cruciate ligament
15	Lily toxicity results in which of the following in cats?	a	Neurologic signs
		b	Pancreatitis
		c	Renal failure
		d	Heart failure
		e	Liver failure
16	A dog presents to your clinic for an acute onset of sneezing after running in a field. You look into the dog's nasal passage and remove a grass awn. What bacterial infection is this dog predisposed to?	a	Nocardia
		b	Pasteurella multocida
		c	Actinomyces
		d	Clostridium tetani
		e	Staphylococcus aureus
17	Closure of the eyes is mediated by cranial nerve ____ and opening the eyes is mediated by CN ____.	a	V, VII
		b	VII, III
		c	VII, V
		d	V, III
		e	III, VII
18	The synthesis of which of these clotting factors is dependant on vitamin K?	a	Factor III
		b	Factor V
		c	Factor IX
		d	Factor VIII
		e	Factor VI
19	Which of the following is not a common sequela of hypertrophic cardiomyopathy in cats?	a	Left heart failure
		b	Systolic anterior motion of the mitral valve
		c	Right heart failure
		d	Thromboembolism
20	A 2 year old male Rottweiler presented for a intestinal foreign body removal. The dog was taken to surgery for removal of the foreign body. What muscle should the surgeon incorporate in to the closure of the abdominal incision?	a	Pectineus muscle
		b	Gracilis muscle
		c	Gluteal muscle
		d	Preputialis muscle
21	A type III Salter Harris fracture involves what part of the bone?	a	Metaphysis and physis
		b	Epiphysis and physis
		c	Metaphysis, physis, and epiphysis
		d	Metaphysis and epiphysis
22	Interpret the following results from a 4 year old female spayed dog: Base deficit= -8, Anion gap=18, pH 7.30, pCO2=29.	a	Metabolic Acidosis, Respiratory Alkalosis
		b	Metabolic Alkalosis, Respiratory Alkalosis
		c	Normal
		d	Metabolic Acidosis, Respiratory Acidosis
		e	Metabolic Alkalosis, Respiratory Acidosis

23	The treatment of choice for a intact female Doberman with a closed pyometra is which of the following?	a	Broad spectrum antibiotics
		b	Ovariectomy
		c	Uterine lavage and antibiotic therapy
		d	Ovariohysterectomy
		e	Prostaglandin therapy
24	Which of the following is most suggestive of pyelonephritis?	a	Bacteria or white blood cells in the urine
		b	Small, irregular kidneys on ultrasound
		c	Bacterial or white blood cell casts in urine.
		d	Pain on abdominal palpation
25	Once infected, for what period of time is canine parvovirus usually shed?	a	6 months
		b	4-6 weeks
		c	7-10 days
		d	1-2 years
26	Central venous pressure is a direct measure of _____.	a	Afterload
		b	Blood pressure in the cranial vena cava
		c	Preload
		d	Stroke volume
		e	Venous blood volume
27	Which of these is not an important potential side effect of ketoconazole administration?	a	Inhibition of hepatic microsomal enzymes
		b	Adrenal insufficiency
		c	Anorexia
		d	Decrease GFR
		e	Elevated liver enzymes
28	An owner just arrived from a camping trip with his dog. He is worried about his dog who seems to have undergone a change in behavior after being attacked by a wild animal. Additionally, the owner thinks that the dog's voice has actually changed. What is your top differential?	a	Rabies
		b	Botulism
		c	Tetanus
		d	Canine Distemper
29	Which of these is a major potential adverse side effect of the chemotherapeutic drug, cyclophosphamide?	a	Cystitis
		b	Anaphylaxis
		c	Ileus
		d	Nephrotoxicity
		e	Cardiotoxicity
30	Which are the most common serovars now thought to play a role in canine leptospirosis?	a	Grippityphosa, pomona, bratislava
		b	Bratislava, candida, irahemorrhagiae
		c	icterohemorrhagiae, canicola, grippityphosa
		d	Pomona, bratislava, icterohemorrhagiae
31	Which of the following is not an adverse effect of itraconazole administration in a dog?	a	Hepatic toxicity
		b	Ulcerative skin lesions
		c	Anorexia
		d	Nephrotoxicity
32	Which of the following is not a treatment for a supraventricular tachycardia?	a	Lidocaine
		b	Diltiazem
		c	Atenolol
		d	Precordial thump

33	Which of the following breeds is not predisposed to dilated cardiomyopathy?	a	Boxer
		b	Dalmatian
		c	Great Dane
		d	Doberman Pinscher
		e	Border Collie
34	A 6 year old domestic short hair cat has just given birth to 3 kittens. However, there are more kittens inside and four hours have passed since the last kitten. What is the best treatment option?	a	Caesarean section
		b	Perform ultrasound
		c	Administer calcium
		d	Administer oxytocin
35	What is the most common intranasal tumor in the dog and cat?	a	Dog and Cat: Adenocarcinoma
		b	Dog: Melanoma, Cat: Chondrosarcoma
		c	Dog: Adenocarcinoma, Cat: Lymphosarcoma
		d	Dog: Osteosarcoma, Cat: Melanoma
		e	Dog: Adenocarcinoma, Cat: Squamous cell carcinoma
36	Approximately, how long does pregnancy last in the dog (starting from the day of ovulation)?	a	93 days
		b	73 days
		c	83 days
		d	53 days
		e	63 days
37	Which of these are you least likely to see in acute glaucoma in a dog?	a	Episcleral injection
		b	Corneal edema
		c	Pain
		d	Buphthalmos
38	Meibomian glands produce which portion of the tear film?	a	Aqueous
		b	Mucous
		c	Immunoglobulins
		d	Lipid
39	What is the appropriate treatment for an indolent eye ulcer in a dog?	a	Corneal debridement & grid keratectomy
		b	Enucleation
		c	Topical triple antibiotic with steroid
		d	Topical antivirals
40	Which of the following breeds is predisposed to acanthosis nigricans?	a	Great Dane
		b	Dachshund
		c	Boxer
		d	Labrador Retriever
		e	Chihuahua
41	What is the most common cause of exocrine pancreatic insufficiency in the dog?	a	Pancreatic infection
		b	Pancreatic acinar atrophy
		c	Pancreatic neoplasia
		d	Chronic pancreatitis
42	What is the causative agent of salmon-poisoning disease?	a	Borrelia burgdorferi
		b	Neorickettsia helminthoeca
		c	Rickettsia rickettsii
		d	Nanophyetus salmincola
43	How is Babesia spp. transmitted?	a	It is vectored by mosquitoes
		b	It is vectored by the Reduvid bug
		c	It is vectored by ticks
		d	It is transmitted fecal-orally
44	Which of these compounds is effective at inducing emesis in the dog?	a	Acepromazine
		b	Milk
		c	Midazolam
		d	Apomorphine
		e	Bleach

45	When measuring Vitamin B12 (Cobalamin) and Folate levels in a dog with suspected small intestinal bacterial overgrowth, which finding is most supportive of this diagnosis?	a	Decreased folate, increased cobalamin
		b	Increased folate, increased cobalamin
		c	Decreased folate, decreased cobalamin
		d	Increased folate, decreased cobalamin
46	Which of these tumor types is associated with causing GI ulcers, perioperative hypotension, and coagulation abnormalities?	a	Lymphoma
		b	Mast cell tumors
		c	Melanoma
		d	Hemangiosarcoma
47	Which of the following is not true about doxycycline used in dogs?	a	It can cause esophageal stricture formation if the drug remains in the esophagus for an extended time period
		b	It can cause discoloration of teeth and thin enamel in puppies
		c	It can cause gastrointestinal upset
		d	It can cause cartilage abnormalities in growing puppies
48	What is the causative agent of Lyme disease?	a	Borrelia burgdorferi
		b	Ehrlichia canis
		c	Bartonella henselae
		d	Rickettsia rickettsii
49	A 13 year old male castrated domestic long hair cat presents for polyphagia, weight loss, and vomiting. The owner notes that the cat appears restless, more active, and more aggressive than before. Which test would diagnose the most likely cause for these signs?	a	Duodenoscopy and biopsy
		b	Abdominal ultrasound
		c	Serum T4
		d	Liver panel
		e	Renal panel and urinalysis
50	You have just diagnosed a pyometra in a bitch. What is the most commonly cultured culprit?	a	Mycoplasma spp.
		b	Escherichia coli
		c	Staphylococcus spp.
		d	Proteus spp.
		e	Pasteurella multocida
51	What does a PR interval of less than 0.10 seconds on the ECG of a cat indicate?	a	First degree atrioventricular block
		b	Normal finding
		c	Second degree atrioventricular block
		d	Sinus arrhythmia
52	What is the best radiographic view to diagnose or rule out a gastric dilatation and volvulus?	a	Horizontal Beam
		b	Left lateral
		c	Dorsoventral
		d	Right Lateral
		e	Ventrodorsal
53	A 2 year old male castrated mixed breed dog presents for an altered gait after being hit by a car. On physical exam, the thoracic limbs had decreased biceps and triceps reflexes and decreased muscle tone. The pelvic limbs had hyper-reflexive patellar and gastrocnemius reflexes and increased muscle tone. Where is the spinal cord lesion?	a	L4-S3
		b	C1-C5
		c	C6-T2
		d	T3-L3
54	Which of these is not a common sign of small bowel obstruction in a dog?	a	Vomiting
		b	Tenesmus
		c	Diarrhea
		d	Abdominal pain

55	Which of these drugs can be used to reverse anesthesia induced by xylazine?	a	Tiletamine
		b	Yohimbine
		c	Medetomidine
		d	Flumazenil
		e	Naloxone
56	A lethargic cat arrives with bradycardia. You decide to perform an ECG and see a lack of a P waves and a widened QRS complex. What do you suspect?	a	Wenckebach
		b	Hyperkalemia
		c	Warfarin toxicity
		d	Hypercalcemia
		e	Mobitz Type-1 Block
57	Which of the following is seen more commonly with acute renal failure than with chronic renal failure?	a	Metabolic acidosis
		b	Anemia
		c	Hyperphosphatemia
		d	Anuria
58	Which of the following cats could you do a water deprivation test on; all are polyuric and polydipsic?	a	8 year old DSH male castrated, 7% dehydrated, serum BUN- 45, creatinine-2.7, urine specific gravity-1.050
		b	9 year old DSH male castrated, 5% dehydrated, serum BUN- 35, creatinine-2.4, urine specific gravity-1.010
		c	6 year old DSH, female spayed, adequately hydrated, serum BUN-10, creatinine-0.7, urine specific gravity-1.007
		d	5 year old DSH, female spayed, adequately hydrated, serum BUN-8, creatinine 0.9, urine specific gravity-1.040
59	Canine teeth in male horse erupt at the age of?	a	4 -5 years
		b	1year
		c	3 years
		d	10 years
60	Which hormone is responsible of pyometra in dog?	a	Adrenocortison
		b	Progesterone
		c	Estrogen
		d	Insulin
61	In trichinosis/trichinellosis what will be effect on eye	a	Keratoconjunctivitis (swelling around the eye)
		b	Squamous Cell carcinoma
		c	Glaucoma
		d	Petechial hemorrhages
62	A dog with femoral head and neck problem you cut the head of femur . What will you advise to owner of dog?	a	Amputation of the limb
		b	Euthanise the animal
		c	Restrict motion
		d	None of the above
63	A dog come to you with urinary obstruction for last six hour or more. A few calculi come out of urethra along with blood in urine. When you press abdomen urine come out and whole bladder gets empty. What will be the next step for management?	a	Cystotomy
		b	Urethrostomy
		c	Administration of diuretics
		d	Maintain patency for urinary tract/ fluid therapy
64	A mare 7 year of age and never bred examined for vaginitis, endometritis and cervicitis and you find that there is pooling of urine in vagina what is the cause?	a	Complication of pneumovagina
		b	Insufficiency of progesterone
		c	Malformation of genital tract
		d	None of the above

65	In pyometra of cow what will you give?	a	PGF ₂ α
		b	Progesterone
		c	FSH
		d	None of the above
66	Sinusitis in turkey is caused by;	a	Mycoplasma gallinarum
		b	Pseudomonas
		c	<i>E. coli</i>
		d	Staph
67	Pharmacological action of Ivermectin is	a	Cell wall breakdown
		b	Disturbance in gut absorption
		c	PABA,GABA inhibition.
		d	None of the above
68	An old bitch having two pups got exhausted now straining is minimum,on X-ray pups clear, your next action will be	a	Administration of oxytocin
		b	Administration of steroid
		c	Administration of Estradiol
		d	C-Section
69	9-month dog with one testicle in perineum is presented to you,the owner wants to use that dog for breeding your advice will be;	a	do not use it
		b	First operate it for cryptorchidism
		c	First give hormonal treatment
		d	None of the above
70	Most common tumor of mare reproductive tract is	a	Melanoma
		b	Sarcoid
		c	Squamous cell carcinoma
		d	Granulosa cell tumor
71	In gross tetany what is responsible for decreased absorption of Mg;	a	K
		b	Na
		c	P
		d	Cl
72	Ewe 3 weeks before due date showing pregnancy toxemia, your management will be;	a	Administration of dextrose+fluids+glucose+increase ration
		b	Induce the parturition
		c	C-Section
		d	Slaughter the animal
73	Length of gestation in cattle is	a	250 days
		b	260 days
		c	280 days
		d	300 days
74	All excretions and secretions from the infected animal contain virus, and virus may be present in milk and semen for up to 4 days before clinical signs appear, depicts picture of which disease	a	FMD
		b	BVD
		c	Bovine respiratory syncytial virus
		d	None of the above
75	Estrus in mares lasts approximately for	a	18 days
		b	7 days
		c	10 days
		d	22 days
76	A cow has calved with forced extraction and was going to its shed and shivered and slipped and could not get up later on, what is your tentative diagnosis?	a	Obturator nerve damage
		b	Exhaustion
		c	Energy Imbalance
		d	Mg deficiency
77	A cow is presented for dystocia shoulder of the fetus can't pass the pelvic brim with one man pulling the legs with one by one calf is still alive, what will be your line of treatment?	a	Fetotomy
		b	Administration of oxytocin
		c	Administration of Ca
		d	C-Section
78	Inguinal hernias are common in	a	spayed female
		b	intact female
		c	neutered male
		d	intact male

79	Cattle parasite of stomach which moves to other organs and produces lesions is	a	Hypoderma bovis
		b	Fasciola hepatica
		c	Dictylocaulus viviparous
		d	Lung worm
80	Most dangerous parasite for man is	a	T. Solium
		b	T. Saginata
		c	D. Caninum
		d	None of the above
81	A vet has taken fee for euthanasia and treated the dog and found a home for the dog	a	His licence is at risk of suspension
		b	his licence will surely be suspended in some states
		c	He has done a great job humanitarianly
		d	If owner has not signed a euthanasia paper he is saved
82	Heat detection was a problem in a herd and it was solved what is the effect you will see afterwards	a	Better feed intake
		b	Less dystocia cases
		c	Reduced no of services per conception
		d	All of the above
83	Coliform mastitis control will be achieved through	a	teat dipping
		b	Use of antibiotics
		c	Dry cow therapy.
		d	None of these
84	Which suture is an everted one	a	Parker-ker oversew
		b	Cushings
		c	Lambert
		d	None of these
85	A calf is given enough colostrum in local infection which Ab will act locally first	a	IgA
		b	IgG
		c	IgM
		d	All of them
86	In case of Nitrate Poisoning your first choice of Rx will be	a	Administration of 1% mehtylene blue
		b	Administration of fluids
		c	Administration of antibiotics
		d	Administration of diuretics
87	Ammonium chloride is added in sheep diets for	a	prevention of urethral stones
		b	chronic pneumonia
		c	parasite infestation control
		d	improve feed intake
88	If a cat has eaten the rodenticide eaten rat and is normal what is the advice to owner	a	Bring the cat and lable of rodenticide immediatly to vet.
		b	Give Vit K
		c	Don't worry
		d	Give peroxide for vomiting
89	Which drug doesn't cause appetite stimulation	a	diazepam
		b	prednisolon
		c	cyproheptidine
		d	None of these
90	Most common intra ocular tumour in cat is	a	Squamous Cell Carcinoma
		b	Melanoma
		c	Granuloma
		d	All of them
91	PMSG and HCG are equivalant of	a	FSH and LH
		b	FSH and PGF2 alpha
		c	All of these
		d	None of these

92	In herd of cows 60 % of the cows are tested positive for Bovine leucosis, how many of them will show clinical signs?	a	0-5%
		b	10-20%
		c	30-40%
		d	50%
93	A dog has 72 hrs urethral obstruction death is due to	a	Bladder rupture
		b	hypokalemia
		c	hyperkalemia
		d	None of these
94	Caudal lobe of the lung in cattle is auscultated at	a	7th and 8 th intercostal space
		b	12th and 13th intercostal space
		c	Both a & b
		d	None of these
95	A dog has recovered from parvo when leaving the hospital what will you do	a	destroy bedding
		b	go for vaccination
		c	Advice owner for restricted animal movement
		d	None of these
96	Hawk has eaten pigeon and developed trichomoniasis and is OK after giving metronidazole but now after 1 week showing nervous signs, what will go for?	a	x-ray of skull
		b	change drug to doxycyclin
		c	blood test for heavy metals
		d	all of the above
97	Which antibiotic is not recommended in dogs <6-8 months age	a	Enrofloxacin
		b	Amoxy
		c	Penicilline
		d	All of the above
98	A goat farmer wants to eradicate TB on his farm what question you will ask	a	What is the age groups of goats
		b	Is there any goat with signs
		c	How many goats do you have
		d	What feed you offer
99	Where do you deposit semen in artificial insemination in cow?	a	Body of the uterus
		b	Cervix
		c	Vagina
		d	Anywhere in reproductive tract
100	Fluid of choice for administration in diarrhoea	a	Glucose
		b	Sodium bicarbonate
		c	Fructose
		d	All of these
101	You have administered Xylazin I/V in horse and there is sudden collapse what is the reason?	a	Cardiopulmonary arrest
		b	Nerve damage
		c	Brain Damage
		d	All of the above
102	Where are striated muscles located?	a	Stomach wall and uterus
		b	Urinary bladder and intestine
		c	Ciliary body of the eye
		d	All of the above
103	In what order does the impulse for depolarization travel through the heart?	a	AV node, SA node, bundle of His, Purkinje fibers
		b	SA node, AV node, bundle of His, Purkinje fibers
		c	SA node, AV node, Purkinje fibers, bundle of His
		d	AV node, SA node, Purkinje fibers, bundle of His
104	The type of cell responsible for the transmission of impulses through the nervous system is the	a	Neuroglia
		b	Schwann
		c	Neuron
		d	Oligodendrocyte

105	An imbalance of what minerals can affect nerve function?	a	Phosphorus and magnesium
		b	Sodium and potassium
		c	Manganese and chromium
		d	Iron and zinc
106	What species is an induced ovulator?	a	Bovine
		b	Equine
		c	Canine
		d	Feline
107	In what stage of the estrous cycle does the corpus luteum develop?	a	Proestrus
		b	Estrus
		c	Metestrus
		d	Diestrus
108	The hormone produced by a developing ovarian follicle is	a	Estrogen
		b	Progesterone
		c	Prolactin
		d	Oxytocin
109	What hormone contracts the female reproductive tract to help move spermatozoa into the oviducts?	a	Estrogen
		b	Progesterone
		c	Prolactin
		d	Oxytocin
110	To achieve a normal pregnancy, the blastocyst attaches to what structure?	a	Endometrium
		b	Placenta
		c	Oviduct
		d	Cervix
111	From the estrous cycle to parturition, in what order are the following hormones released?	a	Estrogen, oxytocin, progesterone
		b	Oxytocin, estrogen, progesterone
		c	Estrogen, progesterone, oxytocin
		d	Progesterone, estrogen, oxytocin
112	Which animal has a cotyledonary placenta?	a	Cat
		b	Dog
		c	Horse
		d	Sheep
113	How many mammary glands are typically found on a bitch?	a	8–12
		b	12–14
		c	4–6
		d	10–16
114	Which reaction is the result of parasympathetic nervous system stimulation?	a	Bronchodilation
		b	Pupil dilation
		c	Decreased GI motility
		d	Decreased heart rate
115	Edema would most likely develop during or after which one of the following conditions	a	Salt deficiency
		b	Dehydration
		c	Low blood pressure
		d	Inactivity
116	Long-term use of glucocorticoids will	a	Increase lymphocyte production
		b	Increase plasma protein levels
		c	Suppress the immune system
		d	Decrease blood glucose levels
117	Lymph nodes found on the caudal aspect of the leg at the level of the patella are the	a	Popliteal nodes
		b	Inguinal nodes
		c	Mandibular nodes
		d	Prescapular nodes
118	A dog that weighs 10 kg would have approximately how much blood?	a	50 ml
		b	800 ml
		c	1.5 L
		d	2 L

119	The initial process of converting glucose into fat is called	a	Lipogenesis
		b	Gluconeogenesis
		c	Glycogenolysis
		d	Fatty acid synthesis
120	Which of the following is true about anaerobic metabolism?	a	Fat can be used
		b	Glucose can be used
		c	It takes place in the mitochondria
		d	Oxygen must be present
121	What ion is responsible for repolarization of a neuron during an action potential?	a	Potassium
		b	Calcium
		c	Magnesium
		d	Glucose
122	The islets of Langerhans are found in the	a	Spleen
		b	Pancreas
		c	Liver
		d	Kidney
123	Renin is secreted by the	a	Kidney
		b	Hypothalamus
		c	Liver
		d	Adrenal cortex
124	Edema could be caused by	a	Decreased capillary blood pressure
		b	Increased plasma oncotic pressure
		c	Venous congestion
		d	Dehydration
125	Clinical ketosis in dairy cattle is most common in	a	First-calf heifers
		b	Fat cows
		c	Dairy bulls
		d	Steers
126	Milk fever in dairy cows is typically treated with	a	IV glucose
		b	IV calcium
		c	Atropine
		d	Antibiotics
127	Yellow mucous membranes would suggest	a	Renal disease
		b	Hepatic disease
		c	Shock
		d	Dehydration
128	A capillary refi ll time of 2 seconds would suggest	a	Shock
		b	Anemia
		c	A healthy animal
		d	Dehydration
129	What layer of bone tissue is necessary for attachment of ligaments and tendons?	a	Periosteum
		b	Endosteum
		c	Cartilage
		d	Meniscus
130	How many air sacs does a chicken have?	a	4
		b	6
		c	8
		d	9
		e	Intrahepatic venous plexus
131	Which of these is not a division of the small intestine?	a	Duodenum
		b	Ilium
		c	Ileum
		d	Jejunum
132	What abdominal organ is absent in the horse and rat?	a	Right kidney
		b	Gall bladder
		c	Pancreas
		d	Cecum

133	The hormone responsible for maintaining pregnancy is	a	Oxytocin
		b	Luteinizing hormone
		c	Estrogen
		d	Progesterone
134	The structure produced immediately after an ovarian follicle has ruptured and released its ovum is the	a	Corpus callosum
		b	Corpus luteum
		c	Granulosum
		d	Sertolioma
135	Sperm cells are produced by the	a	Seminiferous tubule
		b	Epididymis
		c	Vas deferens
		d	Seminal vesicles
136	What domestic species lacks the bulbourethral gland, also called <i>Cowpers gland</i> ?	a	Equine
		b	Feline
		c	Canine
		d	Bovine
137	The time period from the beginning of one heat cycle to the beginning of the next is called	a	Estrous
		b	Estrus
		c	Ovulation
		d	The mating cycle
138	The thorax is normally under	a	Partial pressure
		b	Positive pressure
		c	Equilibrium
		d	Negative pressure
139	The two main minerals that make up bone are	a	Calcium and magnesium
		b	Sodium and potassium
		c	Calcium and phosphorus
		d	Calcium and potassium
140	Adult cattle have how many upper incisors?	a	40
		b	6
		c	4
		d	0
141	The prepuce is also called the	a	Foreskin
		b	Flap
		c	Prostate gland
		d	Glans penis
142	Dogs have how many cervical, thoracic, and lumbar vertebrae?	a	7,13,6
		b	7,12,7
		c	6,13,7
		d	7,13,7
143	The function of the red blood cell is to	a	Produce antibodies against bacteria and viruses
		b	Act as a phagocyte
		c	Carry oxygen to the tissues
		d	Help increase the osmotic pressure within the vessels
144	Infl ammation of the mammary glands is termed	a	Hepatitis
		b	Blepharitis
		c	Mastitis
		d	Enteritis
145	What organ is located immediately behind the diaphragm in the carnivore?	a	Liver
		b	Spleen
		c	Pancreas
		d	Kidney

146	SOAP is the acronym for	a	Symptoms, observations, assessment, plan
		b	Subjective date, objective date, assessment, plan
		c	Streamlined operation action plan
		d	Synergistic outline alternative for prognosis
147	The optimal temperature for housing most mammals and birds is	a	55° F
		b	65° F to 84° F
		c	98.6° F
		d	100° F
148	How many milliliters of a drug with a concentration of 100 mg/ml should be given to a 75-lb dog at a dose of 1 mg/lb?	a	75
		b	100
		c	0.75
		d	0.34
149	How many tablets would you dispense for a 30-day supply of a drug with a dose of one and one-half tablets three times daily?	a	500
		b	45
		c	135
		d	90
150	The "French" unit is commonly used to express the diameter of a urinary catheter. Each French unit is equivalent to 1/3 mm. What is the diameter of a 12 French catheter in millimeters?	a	3 mm
		b	4 mm
		c	18 mm
		d	36 mm
151	You have just administered an injection of 0.02 ml of acepromazine (10 mg/ml). How many milligrams did you give?	a	. 2
		b	0.2
		c	20
		d	200
152	What is the correct term for blood in the urine?	a	Hemolysis
		b	Uremia
		c	Hematuria
		d	Hemocentesis
153	What is the correct term for an increased leukocyte count not due to cancer?	a	Leukemia
		b	Leukopenia
		c	Leukophilia
		d	Leukocytosis
154	What organ or area is affected by mastitis?	a	Uterus
		b	Testicle
		c	Hands
		d	Mammary gland
155	What is the correct term for sticking a needle into a lymph node and aspirating cells for examination?	a	Punch biopsy
		b	Lymphostomy
		c	Lymphocentesis
		d	Histopathology
156	What is the correct term for an inflammation of the urinary bladder?	a	Nephritis
		b	Cystitis
		c	Cystocentesis
		d	Cystouritis
157	What is the correct term for the surgical removal of a mammary gland?	a	Mastotomy
		b	Mastostomy
		c	Mastectomy
		d	Mammotomy
158	What does the term <i>anorexia</i> mean?	a	Low erythrocyte count
		b	Not eating
		c	Depressed
		d	Abnormal heart rhythm

159	What is the correct term for an instrument used to examine ears?	a	Ophthalmoscope
		b	Laryngoscope
		c	Laparoscope
		d	Otoscope
160	What is the term for an inflammation of the brain and spinal cord?	a	Hydrocephalus
		b	Encephalitis
		c	Encephalomyelitis
		d	Epilepsy
161	What is the term that refers to a benign black tumor?	a	Melanoma
		b	Melanocarcinoma
		c	Melanosis
		d	Xanthoma
162	What is the name of the device used to count blood cells?	a	Hematoscope
		b	Hemocytometer
		c	Hematometer
		d	Leukocytometer
163	A dog's spleen is enlarged. What is the correct term for this condition?	a	Splenomegaly
		b	Hypoplasia
		c	Analgesia
		d	Splenoplasia
164	What is the correct term for a radiograph taken with air in the urinary bladder?	a	Cystogram
		b	Aerocystogram
		c	Electrocystogram
		d	Pneumocystogram
165	What is the correct term for surgically creating a new opening into the urethra?	a	Urethrotomy
		b	Ureterostomy
		c	Urethroscopy
		d	Urethrectomy
166	Orthopedics is the medical specialty concerned with	a	Muscle and bone
		b	Neoplasia
		c	The reproductive system
		d	Aged animals
167	What is the term for a blood clot that travels through the circulation?	a	Thrombus
		b	Thromboembolus
		c	Embolus
		d	Stroke
168	A cataract is found in what structure?	a	Kidney
		b	Lens of the eye
		c	Brain
		d	Reproductive tract
169	Which of the following terms means "difficult breathing"?	a	Dystrophy
		b	Tachypnea
		c	Pneumothorax
		d	Dyspnea
170	What is the term for the procedure in which a sterile needle is inserted into the chest and fluid is withdrawn into a syringe?	a	Cystocentesis
		b	Thoracorrhagia
		c	Pneumogenesis
		d	Thoracocentesis
171	What term refers to the medical specialty that deals primarily with tumors?	a	Oncology
		b	Neoplasology
		c	Neonatology
		d	Cancerology
172	A dog has swallowed a ball, and it is stuck in its stomach. What is the name of the surgical procedure performed to remove it?	a	Gastrectomy
		b	Gastrostomy
		c	Gastrotomy
		d	Gastropepy

173	What is the correct term for a drug administered to relieve pain?	a	Analgesic
		b	Anesthetic
		c	Antipyretic
		d	Antitussive
174	A cat that has already delivered two kittens has another kitten stuck in the birth canal and is having difficulty giving birth to it. What term is used to describe this condition?	a	Pyometra
		b	Hysterectomy
		c	Dystocia
		d	Paronychia
175	Suppression of the flow of saliva is	a	Sialoschesis
		b	Sialogen
		c	Sialoadenitis
		d	Sialocele
176	Difficulty standing is	a	Dyschezia
		b	Dyspnea
		c	Dysphagia
		d	Ataxia
177	Difficulty defecating is	a	Dyschezia
		b	Dyspnea
		c	Dysphagia
		d	Ataxia
178	A displaced or mal-positioned organ is referred to as	a	Epistaxis
		b	Ecchymosis
		c	Ectopic
		d	Ectropion
179	The term that pertains to a jaundice color is	a	Ichthyoid
		b	Icteric
		c	Idiopathic
		d	Ichor
180	A disorder or disease of a bone is a/an	a	Ostealgia
		b	Osteopathy
		c	Chondralgia
		d	Chondropathy
181	The surgical removal of the uterus is	a	Salpingectomy
		b	Orchiectomy
		c	Hysterectomy
		d	Episiectomy
182	The medical term for declawing is	a	Phalangectomy
		b	Digitectomy
		c	Plicectomy
		d	Onychectomy
183	The medical term for protrusion of an organ through the body wall is	a	Torsion
		b	Volvulus
		c	Hernia
		d	Hemorrhoid
184	Cryptorchidism is	a	Removal of the testicles
		b	Repair of a scrotal hernia
		c	Having one testicle only
		d	Having one or more ectopic testicles

185	What is the difference between an emasculatome and an emasculator?	a	The emasculatome removes the testicle, whereas the emasculator does not.
		b	A skin incision is not made before using the emasculator but is required when using the emasculatome.
		c	The emasculatome crushes the spermatic cord, whereas the emasculator crushes and cuts the spermatic cord.
		d	The emasculator is used for cattle only; the emasculatome is used for horses only.
186	If it is accidentally administered as an IV bolus, lidocaine may cause	a	Full body numbness
		b	Seizures
		c	Bradycardia
		d	Polyuria
187	What is not a short-term effect of corticosteroid therapy?	a	Polyuria
		b	Polyphagia
		c	Delayed healing
		d	Osteoporosis
188	Most biotransformation of drugs occurs in the	a	Liver
		b	Kidney
		c	Lungs
		d	Spleen
189	Which of these tissues is not a normal site for drugs to accumulate to be released later, thereby prolonging the effect of the drug?	a	Pancreas
		b	Fat
		c	Muscle
		d	Liver
190	What drug is in the same class as thiopental?	a	Ketamine
		b	Diazepam
		c	Phenobarbital
		d	Atropine
191	All of the following drugs are antagonists, used to reverse the effects of another drug except	a	Yohimbine (Yobine)
		b	Detomidine (Dormosedan)
		c	Atipamezole (Antisedan)
		d	Naloxone (Narcan)
192	A cow is accidentally dosed with an equine dose of xylazine. What drug should be immediately administered?	a	None; the equine and bovine doses of xylazine are the same
		b	Epinephrine
		c	Naloxone
		d	Yohimbine
193	An <i>expectorant</i> is a drug that acts to	a	Suppress a productive cough
		b	Liquefy and dilute viscous secretions in the respiratory tract
		c	Suppress inflammatory cells in the respiratory tract
		d	Reduce the allergic component of respiratory disease
194	Which of the following drugs does not have an immunosuppressive effect?	a	Cyclosporine
		b	Azathioprine (Imuran)
		c	Prednisone
		d	Ivermectin
195	Triple sulfas were developed to avert ___ that was/were seen with single sulfonamide toxicity.	a	Diarrhea
		b	Crystalluria
		c	Bronchospasms
		d	Seizures

196	Which of the following do/does <i>not</i> have to be sterile during a surgical procedure to maintain aseptic technique?	a	Mask
		b	Drapes
		c	Instruments
		d	Gloves
197	Before starting the surgical procedure, the technician who has scrubbed in with the surgeon should do all of the following except	a	Count the gauze sponges in the pack.
		b	Arrange the instruments to be quickly and easily located.
		c	Place the scalpel blade on the handle.
		d	Open the suture material.
198	All of the following statements regarding cesarean sections are true except	a	Once the newborns are removed, the mother is out of danger, and most of the technician's attention should be on the newborns.
		b	A cesarean section is also known as a <i>hysterotomy</i>
		c	For some breeds of dogs, such as the English bulldog, it is expected that a cesarean section will need to be performed.
		d	Wait to put the mother with the newborns until after she has adequately recovered from anesthesia.
199	The animal is to be prepared for an ovariohysterectomy. What part of the body is prepped?	a	Paw
		b	Ventral chest wall
		c	Ventral abdomen
		d	Ear
200	Which of the following is not considered an elective procedure?	a	Orchidectomy
		b	Ovariohysterectomy
		c	Onychectomy
		d	Enucleation of a proptosed eye
201	Rank the following from greatest tensile strength to least.	a	00 gut, 3 vidyl, 1-chronic gut, 6-0 silk
		b	1 chronic gut, 00 gut, 3-0 vidyl, 6-0 silk
		c	6-0 silk, 3-0 vidyl, 00 gut, 1-chronic gut
		d	6-0 silk, 3-0 vidyl, 1-chronic gut
202	What needle type is reusable?	a	Swaged-on
		b	Taper point
		c	Trocar tip
		d	Eyed
203	What parameter(s) does the pulse oximeter measure?	a	Heart rate only
		b	Respiration rate and depth
		c	Oxygen saturation of hemoglobin and heart rate
		d	Respiration rate and heart rate
204	What is meant by the term <i>iatrogenic</i> ?	a	Wounds induced by the animal itself
		b	Patient-caused additional trauma to an existing wound
		c	Patient-caused additional trauma to a surgical incision, generally licking
		d	Induced or caused by the veterinary surgeon or staff
205	Why is a recent surgical wound usually slightly warmer than surrounding normal tissues	a	Contamination
		b	Debridement
		c	Infection
		d	Inflammation

206	Which of the following is an absorbable suture?	a	Prolene
		b	Vicryl
		c	Mersilene
		d	Silk
207	If skin edges are under extreme tension (e.g., in a large skin wound), what is the suture pattern of choice?	a	Simple continuous
		b	Simple interrupted
		c	Interrupted horizontal mattress
		d	Continuous horizontal mattress
208	What is the purpose of using a subcuticular suture pattern for final closure?	a	To keep tissues apposed for quick healing
		b	To eliminate small scars produced around
		c	suture holes of the more common patterns
		d	To eliminate infection
209	What suture pattern would <i>not</i> be used to close skin?	a	Cushing
		b	Horizontal mattress
		c	Simple interrupted
		d	Ford interlocking
210	Which of these sequences correctly lists suture material diameter, from largest to smallest?	a	3-0, 2-0, 0, 1, 2, 3
		b	000, 00, 0, 1, 2, 3
		c	3, 2, 1, 1-0, 2-0, 3-0
		d	7-0, 5-0, 3-0, 1
211	<i>Memory</i> is defined as a suture material's ability to resist bending forces and to return to its original configuration. This can cause what problem when suturing?	a	The suture material is more easily tangled.
		b	The suture material is difficult to knot securely.
		c	The suture breaks more readily.
		d	The suture is more likely to cause infection.
212	The main goal of aseptic surgical technique is to prevent contamination of the	a	Operative personnel
		b	Surgical instruments
		c	Surgical wound
		d	Surgical drapes
213	The preferred method for gloving is	a	Open
		b	Closed
		c	Assisted
		d	Double
214	An example of an elective procedure is	a	Ovariohysterectomy
		b	Nephrotomy
		c	Exploratory laparotomy
		d	Thyroidectomy
215	Ovariohysterectomy is routinely Performed	a	In excitable dogs that need immediate calming
		b	In young female dogs that the owners wish Rendered sterile
		c	In male dogs with female characteristics
		d	Exclusively in female dogs who have already had litters of puppies
216	The term <i>arthrotomy</i> refers to an incision into A/an	a	Artery
		b	Joint
		c	Muscle
		d	Long bone

217	Blood vessels are ligated	a	To remove them completely from the body
		b	When blood flow needs to be stopped
		c	Using trauma to coagulate the blood
		d	Rarely and in emergency situations only
218	Keeping tissues moist during a surgical procedure	a	Is important because dry tissues are less resistant to bacterial infection
		b	Is undesirable because wet tissue is an ideal medium for bacterial regeneration
		c	Is of little value
		d	Should be accomplished with 70% isopropyl alcohol
219	<i>Torsion</i> of an organ or part refers to	a	Swelling or expansion
		b	Inflation with fluid
		c	Inflation with gas
		d	Twisting or rotation
220	Enamel, which is the hardest body substance	a	Contains living tissue
		b	Covers the tooth crown and root
		c	Continues production by the ameloblasts after eruption
		d	Is relatively nonporous and impervious

Key Miscellaneous Section A:

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	D	51	B	101	A	151	B	201	B
2	D	52	D	102	D	152	C	202	D
3	A	53	C	103	B	153	D	203	C
4	C	54	B	104	C	154	D	204	D
5	B	55	B	105	B	155	C	205	D
6	B	56	B	106	D	156	B	206	B
7	E	57	D	107	C	157	C	207	C
8	B	58	C	108	A	158	B	208	A
9	C	59	A	109	D	159	D	209	A
10	B	60	B	110	A	160	C	210	C
11	B	61	A	111	C	161	A	211	B
12	D	62	C	112	D	162	B	212	C
13	C	63	D	113	A	163	A	213	B
14	E	64	C	114	D	164	D	214	A
15	C	65	A	115	D	165	C	215	B
16	C	66	A	116	C	166	A	216	B
17	B	67	C	117	A	167	B	217	B
18	C	68	D	118	B	168	B	218	A
19	C	69	A	119	D	169	D	219	D
20	D	70	D	120	B	170	D	220	D
21	B	71	A	121	A	171	A		
22	A	72	A	122	B	172	C		
23	D	73	C	123	A	173	A		
24	A	74	A	124	C	174	C		
25	C	75	D	125	B	175	A		
26	B	76	A	126	B	176	D		
27	D	77	D	127	B	177	A		
28	A	78	D	128	C	178	C		
29	A	79	A	129	A	179	B		
30	C	80	C	130	C	180	B		
31	D	81	D	131	B	181	C		
32	A	82	C	132	B	182	D		
33	E	83	B	133	D	183	C		
34	D	84	D	134	B	184	D		
35	C	85	A	135	A	185	C		
36	E	86	A	136	C	186	C		
37	D	87	A	137	A	187	D		
38	D	88	A	138	D	188	A		
39	A	89	B	139	C	189	A		
40	B	90	A	140	D	190	C		
41	B	91	A	141	A	191	B		
42	B	92	A	142	D	192	D		
43	C	93	C	143	C	193	B		
44	D	94	A	144	C	194	D		
45	D	95	A	145	A	195	B		
46	B	96	B	146	B	196	A		
47	D	97	A	147	B	197	D		
48	A	98	B	148	C	198	A		
49	C	99	A	149	C	199	C		
50	B	100	B	150	B	200	D		

Miscellaneous Section B:

S.No	Question	Choice	Answers
1	Lyophilization is	a	Holding at 72° C for 15 seconds
		b	Competitive inhibition
		c	Freeze-drying
		d	Sterility testing
2	Bacterial endospores	a	Are resistant to heat and desiccation
		b	Are a form of asexual reproduction
		c	Are a consequence of mating
		d	Are highly susceptible to antiseptics
3	In the Gram stain procedure, the mordant is	a	Crystal violet
		b	Iodine
		c	Alcohol
		d	Safranin
4	The humoral immune system involves	a	Monocytes
		b	B cells
		c	T cells
		d	Erythrocytes
5	A hospital-acquired disease is	a	Endemic
		b	Nosocomial
		c	Ergasteric
		d	Epidemic
6	Phagocytosis does not involve	a	Chemotaxis
		b	Adherence
		c	Ingestion
		d	Antibiosis
7	What is the function of interferon?	a	Destroys toxins
		b	Inhibits viruses
		c	Kills bacteria
		d	Inactivates protozoa
8	Most bacteria grow best at pH	a	1
		b	3
		c	9
		d	7
9	What laboratory test evaluates kidney function and is a breakdown product of protein?	a	Glucose
		b	SGTP (ALT)
		c	Creatinine
		d	BUN
10	Creatinine concentrations in serum are influenced by	a	Hydration level
		b	Amylase concentration
		c	Liver disease
		d	Insulin production
11	Nonrenal causes of increased levels of urea might include	a	The amount of carbohydrate ingested
		b	The amount of protein ingested
		c	Insuffi cient insulin
		d	Insuffi cient ADH
12	When evaluating the liver of dogs and cats, AST should be evaluated in conjunction with	a	ALT
		b	Lipase
		c	LDH
		d	Glucose
13	Which of the following ions is a cation?	a	Bicarbonate
		b	Hydroxide
		c	Chloride
		d	Potassium

14	What percentage of the body's calcium is in bone?	a	49%
		b	59%
		c	79%
		d	99%
15	Electrolytes are commonly measured by what method?	a	Ion-specific electrodes
		b	Refractometry
		c	Adsorption
		d	Enzymatic digestion
16	Normal voided urine is clear, except in which of the following species?	a	Dogs
		b	Cats
		c	Horses
		d	Cows
17	Which of the following tests is not included in a routine CBC?	a	Total WBC count
		b	Differential WBC count
		c	Total protein
		d	Reticulocyte count
18	MCHC is expressed in	a	percent
		b	g/dl
		c	mg/dl
		d	mg/L
19	The first phagocytes to respond to an infection are	a	Lymphocytes
		b	Neutrophils
		c	Monocytes
		d	Eosinophils
20	Which of the following cells is usually associated with a chronic infection or inflammation?	a	Lymphocytes
		b	Neutrophils
		c	Monocytes
		d	Eosinophils
21	The third line of defense against foreign invaders in the body is	a	Agglutination
		b	Inflammation
		c	Specific immunity
		d	Interferon production
22	Epistasis is	a	The masking of a trait by another trait
		b	Traits that are due to the interaction of several pairs of alleles
		c	A cross in which each allele makes a comparable contribution to the trait
		d	A cross of three alleles over two alternate alleles
23	The most important laboratory procedure for microbiologic diagnosis is	a	Inoculation of blood agar
		b	Antimicrobial susceptibility testing
		c	Direct microscopic examination of the specimen
		d	Serologic testing
24	The platelets of what species tend to clump easily?	a	Dogs
		b	Horses
		c	Cats
		d	Cows
25	What cells are phagocytic?	a	Granulocytes
		b	Lymphocytes
		c	Neutrophils and macrophages
		d	Macrophages and lymphocytes
26	What is the most immature erythrocyte?	a	Rubricyte
		b	Metarubricyte
		c	Rubriblast
		d	Reticulocyte

27	What are the two diagnostic forms of <i>Giardia</i> ?	a	Cysts and trophozoites
		b	Merozoites and schizonts
		c	Oocysts and sporocysts
		d	Ova and L3 larvae
28	Serology tests can detect heartworms in a dog's blood	a	Immediately after becoming infected
		b	Several days after becoming infected
		c	Several weeks after becoming infected
		d	Several months after becoming infected
29	<i>Struvite crystals</i> is another name for	a	Calcium carbonate crystals
		b	Calcium oxalate crystals
		c	Triple phosphate crystals
		d	Amorphous phosphate crystals
30	Mucus is normally often seen in ___ urine.	a	Dog
		b	Horse
		c	Cat
		d	Cow
31	Skin scales and infected hair samples are mixed with ___ to dissolve the debris and aid in microscopic examination for fungal elements.	a	Hydrogen peroxide
		b	Acetic acid
		c	Physiologic saline
		d	Potassium hydroxide
32	What agar is used for antimicrobial susceptibility testing?	a	Sabouraud agar
		b	Mueller-Hinton agar
		c	MacConkey agar
		d	Kligler iron agar
33	What ion increases with malignancy, particularly with lymphosarcoma?	a	Calcium
		b	Phosphorus
		c	Magnesium
		d	Potassium
34	EDTA plasma cannot be used for testing ___ plasma levels because EDTA forms a complex with it.	a	Magnesium
		b	Phosphorus
		c	Calcium
		d	Potassium
35	If a test result is a false positive, it means that the result is	a	Within the reference range and the disease is absent
		b	Within the reference range and the disease is present
		c	Outside the reference range and the disease is absent
		d	Outside the reference range and the disease is present
36	Food allergies are best treated with	a	Hyposensitization
		b	Allergy shots
		c	Long-term steroid treatment
		d	Elimination diets
37	What type of epithelial cell is most prominent during estrus in a bitch?	a	Basal
		b	Parabasal
		c	Intermediate
		d	Superficial
38	A site of blood collection that is not frequently used, primarily because it is considered painful to the animal, is	a	Facial vein
		b	Tail vein
		c	Jugular vein
		d	Toenail clip
39	In which group of animals would you normally expect to find nucleated RBCs?	a	Goat
		b	Parrot
		c	Snake
		d	Parakeet

40	When you view a specimen under a compound microscope using the 40_ objective and a 10_ ocular, the total magnification of the specimen being viewed is	a	4_
		b	40_
		c	400_
		d	4000_
41	The total white blood cell count of a healthy adult dog ranges from	a	1000 to 3000/ μ L
		b	30,000 to 50,000/ μ L
		c	4000 to 8000/ μ L
		d	6000 to 17,000/ μ L
42	On a complete blood count (CBC), all of the following findings could be expected in a patient with an infection, except,	a	Neutrophilia
		b	Leukocytosis
		c	Narrow buffy coat
		d	A left shift
43	An elevated hematocrit is most commonly associated with	a	Polycythemia
		b	Anemia
		c	Dehydration
		d	Leukocytosis
44	Cholesterol and triglycerides are plasma	a	Proteins
		b	Lipids
		c	Enzymes
		d	Electrolytes
45	Heinz bodies may be a normal finding in up to 5% of the erythrocytes in what species?	a	Dogs
		b	Cats
		c	Horses
		d	Cows
46	What tick is a soft tick?	a	<i>Amblyomma</i>
		b	<i>Dermacentor</i>
		c	<i>Ixodes</i>
		d	<i>Otobius</i>
47	Which statement regarding <i>Demodex</i> is false?	a	Live mites and/or eggs may be found in skin scrapings.
		b	It is cigar-shaped.
		c	It resides in the hair follicles and sebaceous glands of certain mammals.
		d	It is highly contagious.
48	The parasite that is distinguished by white, operculated eggs that are cemented to the hairs of its host is the	a	Tick
		b	Flea
		c	Mite
		d	Louse
49	In what host do the sexually mature adult parasites live?	a	Definitive
		b	Intermediate
		c	Transport
		d	Secondary
50	The instrument specifically designed to collect a fecal sample directly from the animal's rectum is a	a	Fecal extractor
		b	Fecal spoon
		c	Fecal loop
		d	Fecal scoop
51	What is a proper lens cleaner to use for the care and maintenance of a compound microscope?	a	Saline
		b	Xylene
		c	Hydrogen peroxide
		d	Sodium bicarbonate
52	The fecal solution most likely to be successful in detecting <i>Giardia</i> cysts is	a	Sodium chloride
		b	Sodium nitrate
		c	Zinc sulfate
		d	Physiologic saline

53	The ability of the renal tubules to concentrate or dilute a urine sample is assessed by what component of the urinalysis?	a	pH
		b	Volume
		c	Specific gravity
		d	Examination of the sediment
54	The most common uroliths found in feline and canine urine are	a	Struvite
		b	Calcium oxalate
		c	Urate
		d	Cystine
55	A normal adult horse would most likely have a urinary pH of	a	5.5
		b	6.5
		c	7.0
		d	7.5
56	Urinary pH is not affected by the	a	Patient's diet
		b	Presence of bacteria in the urine
		c	Patient's acid-base status
		d	Presence of crystals in the urine
57	What species has multiple forms of reticulocytes?	a	Horse
		b	Cow
		c	Cat
		d	Dog
58	Which white blood cell is known as "the first line of defense" after a microorganism has entered the body?	a	Eosinophil
		b	Lymphocyte
		c	Monocyte
		d	Neutrophil
59	A California mastitis test	a	Measures leukocytes in the milk of each quarter
		b	Measures trypsin-like factor in the milk of each quarter
		c	Measures bacterial cells in the whole milk of the udder
		d	Measures cellular nuclear protein in the whole milk of the udder
60	The red-top Vacutainer tube should sit at room temperature for ___ before centrifugation, allowing the clot to form.	a	5 minutes
		b	30 minutes
		c	1 hour
		d	0 minutes (No clot will form.)
61	When preparing cytology samples for microscopic evaluation, what is the best technique to use?	a	Wet prep
		b	Squash prep
		c	Modified Knott prep
		d	Willis prep
62	The period of time when a bitch is receptive to the male is classified as	a	Metestrus
		b	Proestrus
		c	Anestrus
		d	Estrus
63	In what species are the platelets normally larger than the red blood cells?	a	Bovine
		b	Canine
		c	Equine
		d	Feline
64	What Vacutainer tube yields plasma via centrifugation?	a	Red top
		b	Red/black mottled top
		c	Green/gray mottled top
		d	Yellow top
65	Which of these ectoparasites is zoonotic?	a	<i>Demodex</i>
		b	<i>Cnemidocoptes</i>
		c	<i>Sarcoptes</i>
		d	<i>Otodectes</i>

66	What parasite uses snails as intermediate hosts?	a	<i>Toxocara</i>
		b	<i>Paragonimus</i>
		c	<i>Taenia</i>
		d	<i>Dipetalonema</i>
67	Which of the following parasites is not zoonotic?	a	<i>Toxoplasma</i>
		b	<i>Echinococcus</i>
		c	<i>Dipylidium</i>
		d	<i>Giardia</i>
68	Myiasis is an infestation of	a	Flies
		b	Mites
		c	Ticks
		d	Lice
69	What mineral is found in hemoglobin?	a	Iodine
		b	Calcium
		c	Magnesium
		d	Iron
70	What is becoming a common type of urolith in cats?	a	Oxalate
		b	Silica
		c	Urate
		d	Cystine
71	Which of these immunoglobulins is found on mucous membranes and is stimulated by intranasal vaccines?	a	IgG
		b	IgM
		c	IgA
		d	IgE
72	What species has the largest eosinophil granules?	a	Bovine
		b	Canine
		c	Equine
		d	Feline
73	Trematodes are	a	Tapeworms
		b	Flukes
		c	Roundworms
		d	Thorny-headed worms
74	If a milk progesterone test from a cow is positive, it indicates	a	She is not pregnant.
		b	She is in estrus.
		c	She is in proestrus.
		d	She is not in heat.
75	What cat blood type is considered the universal donor?	a	A
		b	O
		c	AB
		d	None exists in the cat.
76	When performing a CBC, a stained blood film will not allow you to evaluate the morphology of	a	Platelets
		b	Small lymphocytes
		c	Large lymphocytes
		d	Macrophages
77	A substance that has been lyophilized has been	a	Dehydrated
		b	Rehydrated
		c	Thawed
		d	Frozen
78	Basophils are most commonly found in what tissues?	a	Eyeball
		b	Near blood vessels
		c	Avascular tissues
		d	Bone marrow
79	The correct medical term for a urinary bladder stone is	a	Urolith
		b	Cystolith
		c	Renal calculus
		d	Cystic calculus

80	What organ has both lymphatic and hematologic functions?	a	Spleen
		b	Pancreas
		c	Tonsil
		d	Liver
81	What organ releases T cells?	a	Thyroid
		b	Thymus
		c	Splenic trabeculae
		d	Tonsils
82	What is the disadvantage of using vacuum blood collection tubes?	a	Collection tubes can be used sequentially.
		b	Withdrawal pressure is not easily controlled.
		c	Rapid sample collection
		d	Blood enters the tube and mixes rapidly
83	Centrifuging a blood sample at high speed for a prolonged period may result in	a	Lipemia
		b	Icterus
		c	Hemolysis
		d	Bacterial contamination
84	Blood levels of cholesterol, triglycerides, and total protein are all used to evaluate function of the	a	Liver
		b	Pancreas
		c	Adrenal glands
		d	Kidneys
85	What needle would you give the veterinarian to use for a fine-needle aspirate?	a	14 gauge
		b	16 gauge
		c	20 gauge
		d	22 gauge
86	Eosinophilia is commonly seen with a	a	Bacterial infection
		b	Parasitic infection
		c	Viral infection
		d	Hormonal disorder
87	What species normally has the smallest erythrocytes?	a	Horses
		b	Cats
		c	Cattle
		d	Goats
88	What is an intracellular parasite of erythrocytes?	a	<i>Babesia</i>
		b	<i>Ehrlichia</i>
		c	<i>Trypanosoma</i>
		d	<i>Toxoplasma</i>
89	Which immunoglobulin is the only one that can cross the placenta?	a	IgG
		b	IgM
		c	IgA
		d	IgD
90	The first line of defense that the body has against foreign invaders is the	a	Hair
		b	Neutrophils
		c	Primary lymphoid tissue
		d	Skin
91	ELISA is an acronym for	a	Electro-linked immunosorbent assay
		b	Enzyme-linked immunosorbent assay
		c	Enzyme-linked immunoassay
		d	Electrolytic isoantibody assay
92	Vaccines may be given by any of the following routes, except	a	Subcutaneously
		b	Intramuscularly
		c	Intranasally
		d	Intraperitoneally

93	Gram-negative organisms appear as what color when stained with Gram stain?	a	Blue
		b	Red
		c	Green
		d	Clear
94	Which of the following does not kill endospores?	a	Autoclaving
		b	Incineration
		c	Hot-air sterilization
		d	Pasteurization
95	What method is best used to sterilize heatsensitive medical equipment?	a	Dry heat
		b	Autoclaving
		c	Gas sterilization
		d	Pasteurization
96	Generally, endotoxins are products of	a	Viruses
		b	Gram-negative bacteria
		c	Gram-positive bacteria
		d	Fungi
97	What organism causes strangles in horses?	a	<i>Staphylococcus aureus</i>
		b	<i>Streptococcus equi</i>
		c	<i>Corynebacterium equi</i>
		d	<i>Strongylus vulgaris</i>
98	Calcium carbonate crystals are often seen in ____ urine.	a	Dog
		b	Horse
		c	Cat
		d	Cattle
99	On the average, an adult horse consumes approximately how many gallons of water per day?	a	10 to 15
		b	5 to 7
		c	25
		d	1
100	Birds are attracted to	a	Pelleted foods
		b	Human foods
		c	Brightly colored feed
		d	Foods high in salt
101	Enteral feeding is	a	Intravenous supplementation
		b	Feeding at timed intervals
		c	Feeding orphans
		d	Feeding via the gastrointestinal tract
102	Which of the following animals can easily become hyperthermic if chased?	a	Hogs and sheep
		b	Goats and sheep
		c	Goats and hogs
		d	Cattle and goats
103	What is the best method to encourage a goat to stand still?	a	Lift up the head and chin
		b	Cover an eye
		c	Hold up a front leg
		d	Tie to a fence
104	At what age is a kitten fully able to control its body temperature?	a	61 days
		b	45 days
		c	28 days
		d	12 days
105	Cow's milk should not be given to puppies or kittens as a milk replacer because of its	a	Low protein and fat levels
		b	High fat and protein levels
		c	Low fat and higher protein levels
		d	High fat and lower protein levels
106	What is the normal body temperature of a kitten during the first 2 weeks of its life?	a	102°F
		b	100°F
		c	95°F
		d	104°F

107	Parvovirus causes what disease in cats?	a	Panleukopenia
		b	Rhinotracheitis
		c	Infectious peritonitis
		d	Infectious anemia
108	Scent glands in the male goat are located	a	Around the tail base
		b	Around the horn base
		c	In the groin area
		d	In the axial area
109	If a cat is eating grass, then you know that the	a	Cat wants to vomit
		b	Cat has worms
		c	Cat has a nutritional deficiency
		d	Cause is unknown
110	In an isolation unit where sick animals are housed, the air pressure in the unit compared with that in the quarters housing healthy animals must be	a	Higher
		b	Lower
		c	Equal
		d	Much higher
111	"Red tears" (chromodacryorrhea) in rats is caused by	a	Stress
		b	Infection
		c	Toxins
		d	Impaired blood clotting
112	The most common health problem encountered in cattle that have been recently shipped is	a	Pneumonia
		b	Diarrhea
		c	Lameness
		d	Pinkeye
113	Cattle add large quantities of saliva to their feed during chewing and also regurgitate during rumination. The most important effect of this is to	a	Add more moisture to forage materials
		b	Buffer the acids produced in the rumen
		c	Aid chewing and swallowing
		d	Keep the tongue moist
114	What is a freemartin?	a	A beef breed calf
		b	A heifer calf born twinned to a bull
		c	A calf with extra teats
		d	A premature calf with birth defects
115	What is a trichobezoar?	a	Hairball
		b	Laceration
		c	Abscess on the body surface
		d	Any ingested metal foreign body
116	For oral administration of liquid medication to a dog or cat, you should	a	Tilt the head up slightly and roll the lips over the canine teeth to open the mouth.
		b	Leave the head in a horizontal position and administer the liquid between the lips and cheek.
		c	Tilt the head straight up and open the mouth, using the index finger of your other hand.
		d	Tilt the head straight up, administer the liquid between the lips, and stroke the throat.
117	To judge whether a dog is being aggressive, observe its body language. An aggressive dog	a	Looks from side to side
		b	Holds its head low between the shoulders
		c	Wags its tail
		d	Has eyes that dart from one thing to another

118	To judge whether a dog is nervous, observe its body language. A nervous dog usually	a	Holds its head low between the shoulders
		b	Stares straight at you
		c	Remains in a "sit" position
		d	Has eyes that dart from one thing to another
119	Vomiting should not be induced in patients that have ingested	a	Organophosphates
		b	Salicylates
		c	Kerosene
		d	Ethylene glycol
120	When monitoring patients on fluids and/or patients that undergo diuresis, urine output is an important consideration. The normal urine production for a healthy dog or cat is approximately	a	5 to 10 ml/kg/hr
		b	1 to 2 ml/kg/hr
		c	15 to 20 ml/kg/hr
		d	25 to 30 ml/kg/hr
121	Gastric dilatation/volvulus (GDV) is a life-threatening emergency. Its main damaging effect is the obstruction of the	a	Renal vein
		b	Portal vein
		c	Femoral vein
		d	Splenic vein
122	The proper site for intraperitoneal injection is	a	On the lateral abdominal wall just caudal to the rib cage
		b	2 to 3 inches caudal to the umbilicus on the midline
		c	At the level of the umbilicus to the right or left of the midline
		d	2 to 3 inches anterior to the umbilicus on the midline
123	To what other drug class is a cephalosporin class drug closely related?	a	Tetracyclines
		b	Sulfas
		c	Penicillins
		d	Fluoroquinolones
124	What antiinfective compounds, when given to juvenile animals, can impair cartilage development?	a	Cephalosporins
		b	Fluoroquinolones
		c	Penicillins
		d	Macrolides
125	The H ₂ receptors are found in the	a	Gastric mucosa
		b	Saliva
		c	Carotid arteries
		d	Aortic arch
126	Puppies born via cesarean section that are not breathing well may benefit from ___ drops administered sublingually.	a	Dobutamine
		b	Digitalis
		c	Doxapram
		d	Diazepam
127	The type of drug that would be most helpful for a patient with a productive cough is	a	Antitussive
		b	Antihistamine
		c	Expectorant
		d	Analgesic
128	The anticoagulant diluted in saline or sterile water for injection to form a flush solution for preventing blood clots in intravenous catheters is	a	Heparin
		b	EDTA
		c	Coumarin
		d	Acid citrate dextrose (ACD)
129	Common drugs of plant origin, such as digoxin and atropine, are ineffective in a cow when administered orally because of	a	Eructation
		b	The large size of the rumen
		c	Methane gas
		d	Digestive microorganisms
130	The species that generally clears NSAIDs most slowly is	a	Dog
		b	Cat
		c	Horse
		d	Ruminant

131	The most widely used type of antiemetic drugs used to prevent motion sickness in dogs and cats are the	a	Phenothiazines
		b	Antihistamines
		c	Anticholinergics
		d	Antispasmodics
132	A coating agent that forms an ulcer-adherent complex at the ulcer site is	a	Kaopectate
		b	Sucralfate
		c	Cimetidine
		d	Misoprostol
133	The <i>therapeutic range</i> of a drug refers to which of the following?	a	The plasma concentration at which therapeutic benefits should be observed
		b	The relationship of a drug's ability to achieve a desired effect versus causing a toxic effect
		c	The range of curative properties that a drug may exhibit
		d	The frequency of idiosyncratic reactions
134	<i>Nutraceuticals</i> is a category of drugs with which of the following characteristics?	a	Genetically derived materials that enhance immune function
		b	Drugs that are derived from humans for use in animal
		c	Drugs that are undergoing clinical trials before FDA approval
		d	Nontoxic food components that have proven health benefits
135	In dogs that have been receiving long-term glucocorticoid therapy (months to years), a sudden discontinuation of the drug may result in which of the following medical problems?	a	Immunosuppression
		b	Iatrogenic Addisonian crisis
		c	Polyuria and polydipsia
		d	Iatrogenic thyroid disease
136	Which of the following drugs is classified as an osmotic diuretic and is often used to reduce intracranial pressure or treat oliguric renal failure?	a	Furosemide
		b	Propranolol
		c	Mannitol
		d	Bethanechol
137	The number of species of bacteria that are affected by an antibiotic is known as the antibiotic's	a	Effectiveness
		b	Effi cacy
		c	Spectrum
		d	Sphere
138	Ceftiofur is classified on the package insert as a third-generation cephalosporin antibiotic; cefadroxil is classified as a first-generation cephalosporin. How do third-generation cephalosporins differ from first-generation cephalosporins?	a	Third-generation drugs are better absorbed when given orally
		b	Third-generation drugs have better gram negative activity
		c	Third-generation drugs last longer in the body; they are given once daily only
		d	Third-generation drugs have fewer side effects and adverse reactions.
139	What organ blocks entrance of many drugs because of a barrier similar to the blood-brain barrier?	a	Prostate gland
		b	Thyroid gland
		c	Pancreas
		d	Spleen
140	What drug readily penetrates the bloodbrain barrier and achieves therapeutic concentrations of antibiotic in the central nervous system?	a	Amoxicillin
		b	Enrofl oxacin
		c	Oxytetracycline
		d	Chloramphenicol

141	Why is chloramphenicol used with extreme caution in cats and neonates?	a	It can bind with dietary calcium (milk) and become deactivated.
		b	The liver is unable to metabolize chloramphenicol effectively in these animals.
		c	It can alter developing bone, enamel, and cartilage.
		d	It may drastically alter gut bacterial flora, resulting in fatal diarrhea.
142	How many milliliters are in a teaspoon?	a	1
		b	3
		c	5
		d	10
143	Chronic administration of high doses of glucocorticoids can cause iatrogenic	a	Renal failure
		b	Addisons disease
		c	Cushings disease
		d	Johnes disease
144	What reproductive hormone can produce pyometra in dogs? It is also used in the pregnant mare in an attempt to keep it from prematurely aborting its fetus.	a	Estrogen
		b	Progesterone
		c	Gonadotropin
		d	Prostaglandin
145	Which NSAID, when given perivascularly in horses, can cause skin necrosis and sloughing?	a	Phenylbutazone
		b	Etodolac
		c	Ketoprofen
		d	Meclofenamic acid
146	What insecticide is effective in treating demodectic mange?	a	Fenoxycarb
		b	Amitraz
		c	Pyrethrin
		d	Allethrin

Key Miscellaneous Section B:

No.	Answer	No.	Answer	No.	Answer
1	C	51	B	101	D
2	A	52	C	102	A
3	B	53	C	103	C
4	B	54	A	104	C
5	B	55	D	105	A
6	D	56	D	106	C
7	B	57	C	107	A
8	D	58	D	108	B
9	D	59	A	109	D
10	A	60	B	110	B
11	B	61	B	111	A
12	A	62	D	112	A
13	D	63	D	113	B
14	D	64	C	114	B
15	A	65	C	115	A
16	C	66	B	116	B
17	D	67	C	117	B
18	B	68	A	118	D
19	B	69	D	119	C
20	C	70	A	120	B
21	C	71	C	121	B
22	A	72	B	122	C
23	C	73	B	123	C
24	C	74	D	124	B
25	C	75	D	125	A
26	C	76	D	126	C
27	A	77	A	127	C
28	D	78	B	128	A
29	C	79	A	129	D
30	B	80	A	130	B
31	D	81	B	131	A
32	B	82	B	132	B
33	A	83	C	133	A
34	C	84	A	134	D
35	C	85	D	135	B
36	D	86	B	136	C
37	D	87	D	137	C
38	D	88	A	138	B
39	B	89	A	139	A
40	C	90	D	140	D
41	D	91	B	141	B
42	C	92	D	142	C
43	C	93	B	143	C
44	B	94	D	144	B
45	B	95	C	145	A
46	D	96	B	146	B
47	D	97	B		
48	D	98	B		
49	A	99	A		
50	C	100	C		

Miscellaneous Section C:

S.No	Question	Choice	Answers
1	If you are syringe-feeding a patient, the most appropriate positioning of the head would be	a	A natural position
		b	Flexed upward 90 degrees
		c	Turned 90 degrees to one side
		d	Hanging over the edge of the table
2	Which of the following values is a normal rectal temperature for a dog?	a	102 ° F
		b	98 ° F
		c	106 ° F
		d	.95 ° F
3	Fluids administered via the subcutaneous route should be at	a	Room temperature and hypertonic
		b	Body temperature and isotonic
		c	Body temperature and hypotonic
		d	Room temperature and hypotonic
4	What is the average length of gestation for a dog?	a	70 days
		b	63 days
		c	59 days
		d	55 days
5	Milk fever may have all of the following clinical signs except	a	Staggering
		b	Ascending paralysis
		c	Neck kink
		d	Hypersalivation
6	Which of the following is not true of inactivated vaccines?	a	A finite antigen mass at injection
		b	Provides cellular and mucosal immunity
		c	Requires adjuvant
		d	Relatively stable and safe
7	A client calls to say that her horse is sweated up, keeps looking at his belly, and is trying to roll; the veterinarian will most likely find that the horse is suffering from	a	Tetanus
		b	Colic
		c	Strangles
		d	Epistaxis
8	Which of the following diseases of sheep is not zoonotic?	a	Rabies
		b	<i>Chlamydia</i> infection
		c	Toxoplasmosis
		d	Johne's
9	Blood transfusion reactions that result from incompatibility are rarest in	a	Dogs
		b	Cats
		c	Horses
		d	Cows
10	Which of these can be positive in the urine of a normal, healthy dog?	a	Glucose
		b	Ketones
		c	Bilirubin
		d	Alanine aminotransferase (ALT)
11	A wet-to-dry bandage is best for what type of wounds?	a	Deep lacerations
		b	Contaminated wounds that need to be debrided
		c	Abscesses
		d	Healing wounds with good granulation tissue
12	Which of these compounds is not found in lactated Ringer solution?	a	Sodium chloride
		b	Potassium chloride
		c	Magnesium chloride
		d	Calcium chloride
13	What sling is used to stabilize the coxofemoral joint?	a	Velpau
		b	Ehmer
		c	Arm
		d	Robert Jones

14	Which of the following would delay wound healing?	a	Moisture
		b	Dessication
		c	Antibiotics
		d	Drains
15	Which of these dog breeds is sensitive to ivermectin?	a	Husky
		b	German shepherd
		c	Pug
		d	Collie
16	Which of the following is not a primary skin lesion?	a	Macule
		b	Vesicle
		c	Excoriation
		d	Wheal
17	The term <i>nystagmus</i> refers to	a	The eyes being off center
		b	The eyes moving in a horizontal or vertical motion
		c	Abnormal protrusion of the eye
		d	Marked edema of the eyes
18	Bleeding from a nail during a nail trim is frequently stopped by using	a	Silver nitrate sticks
		b	Baking powder
		c	K-Y Jelly
		d	Ice packs
19	Ninety-five percent of the circulating antibodies in puppies younger than 48 hours old come from the	a	Colostrum
		b	Placenta
		c	Puppies' bone marrow
		d	Environment
20	Besides skin tenting, one of the best physical signs to assess fluid status is	a	Heart rate
		b	Respiration
		c	Pulse
		d	Weight
21	Before doing a skin scraping for a fungal culture, apply	a	Alcohol
		b	Peroxide
		c	Tincture of iodine
		d	Potassium hydroxide
22	The first concern when dealing with any animal should be the	a	Safety of the animal
		b	Safety of the handlers
		c	Protection of the equipment
		d	Time the procedure will take
23	From what area is it best to approach a horse?	a	Rear
		b	Directly in the front
		c	At a 45-degree angle from the left shoulder
		d	Any direction is okay
24	Which is not a route of injection?	a	IV
		b	Anteroposterior
		c	IM
		d	Subcutaneous
25	An animal in sternal recumbency is	a	On its side
		b	Sitting on its rump
		c	Positioned with its back on the table or floor
		d	Positioned with its abdomen on the table or floor
26	When giving an IM injection, it is good practice to withdraw the syringe plunger after the needle is inserted to	a	Draw air into the syringe
		b	See whether the needle has been inserted into a blood vessel
		c	Make the plunger easier to depress
		d	Provide stability to the syringe

27	Where are the anal sacs located?	a	Ventral to the mandible
		b	Cranial to the scapula
		c	In the inguinal area
		d	In the perianal area
28	When using a mercury thermometer to measure rectal temperature, what is the minimum time the thermometer should be left in the rectum	a	10 seconds
		b	60 seconds
		c	2 minutes
		d	5 minutes
29	Another term for a laxative is	a	Relaxant
		b	Diuretic
		c	Adjuvant
		d	Cathartic
30	What phase of healing begins immediately after tissue injury?	a	Debridement
		b	Repair
		c	Inflammation
		d	Maturation
31	The breed of dog that is considered naturally barkless is the	a	Pug
		b	Basenji
		c	Pomeranian
		d	Lhasa apso
32	Which breed of cattle is a beef breed?	a	Guernsey
		b	Holstein
		c	Jersey
		d	Angus
33	What area of the bovine body does hardware disease affect?	a	Foot
		b	Abomasum
		c	Reticulum
		d	Intestine
34	What disease of cattle cannot be prevented by vaccination?	a	Blackleg
		b	Botulism
		c	Malignant edema
		d	Brucellosis
35	Infertility and abortion in cattle can be caused by	a	<i>Staphylococcus aureus</i>
		b	Foot and mouth disease
		c	<i>Campylobacter fetus</i>
		d	Coronavirus diarrhea of calves
36	Which of the following is considered a potential vector for Lyme disease (borreliosis), which can cause severe human illness?	a	Flea
		b	Mite
		c	Tick
		d	Louse
37	The kVp setting on an x-ray machine controls the	a	Quality of the x-ray beam
		b	Quantity of x-ray beams
		c	Number of electrons emitted
		d	Focal spot size
38	The milliamperere-seconds (mAs) setting on an x-ray machine controls the	a	Quality of the beam
		b	Quantity of x-rays emitted
		c	Speed of electrons emitted
		d	Wavelength of the beam
39	The remaining silver halide crystals from exposed x-ray film are removed in the	a	Fixer
		b	Developer
		c	Wash water
		d	Storage envelope
40	A bullet fragment on a film appears as a	a	Black mark
		b	Diffuse greenish gray area
		c	Clear mark
		d	White mark

41	The ideal temperature of the chemicals for manual radiograph processing is	a	68°F
		b	75°F
		c	39°C
		d	25°C
42	An x-ray film accidentally developed before exposure to radiation appears	a	White
		b	Black
		c	Green
		d	Clear
43	The imaging technique that involves a piezoelectric crystal within a transducer is	a	Ultrasound
		b	Tomography
		c	Magnetic resonance
		d	Scintigraph
44	The imaging technique that uses x-rays and computers to produce images that show anatomy in a cross section is	a	Scintigraphy
		b	CT
		c	MRI
		d	Fluoroscopy
45	The combination of xylazine and butorphanol is used to	a	Provide greater analgesia and muscle relaxation than either drug can alone
		b	Cause central nervous system (CNS) excitement
		c	Increase the dose of butorphanol
		d	Increase the dose of xylazine
46	Detomidine is approved for use in	a	Dogs
		b	Cats
		c	Horses
		d	Cattle
47	A 10% solution of thiopental sodium for anesthetic induction contains	a	10 mg/ml
		b	100 mg/ml
		c	20 mg/ml
		d	40 mg/ml
48	Which drug is an antagonist of xylazine?	a	Butorphanol
		b	Detomidine
		c	Yohimbine
		d	Pentazocine
49	Diazepam is used to produce	a	Analgesia
		b	Hypnosis
		c	Muscle relaxation
		d	Vomiting
50	Which drug is a dissociative anesthetic?	a	Thiopental sodium
		b	Ketamine
		c	Xylazine
		d	Acepromazine
51	Pulse oximetry monitoring devices give an estimate of	a	Respiratory rate
		b	Cardiac output
		c	Percentage of hemoglobin saturation with oxygen in arterial blood
		d	Oxygen content of arterial blood
52	Using ketamine as an anesthetic agent diminishes the value of what measure in assessing anesthetic depth?	a	Pinna reflex
		b	Pedal reflex
		c	Jaw muscle tone
		d	Eye position
53	What stage of anesthesia may be characterized by vocalization, struggling, and breath holding?	a	Stage I
		b	Stage II
		c	Stage III, plane 1
		d	Stage III, plane 2

54	The estimated blood volume in dogs is	a	25 ml/kg
		b	50 ml/kg
		c	75 ml/kg
		d	100 ml/kg
55	A 1:10,000 dilution of epinephrine contains how much epinephrine per milliliter?	a	1 mg
		b	0.01 mg
		c	1 mg
		d	0.1 mg
56	If a dog is too deeply anesthetized, all of the following may be seen except	a	Tachycardia
		b	Bradycardia
		c	Pale mucous membranes
		d	Increased jaw muscle tone
57	During CPR, adequate cardiac massage is present when	a	The electrocardiogram (ECG) is normal.
		b	The heart rate is 60 beats/min.
		c	A peripheral pulse can be palpated.
		d	The mucous membranes are pink.
58	Dehydration greater than 10% is	a	A seriously morbid state
		b	Nothing to worry about
		c	Not something that affects skin turgor
		d	Not associated with depression
59	___ is an analgesic and a sedative.	a	Acepromazine
		b	Atropine
		c	Diazepam
		d	Xylazine
60	Phenothiazine tranquilizers	a	Cause nausea
		b	Increase the seizure threshold
		c	Cause vasoconstriction
		d	Suppress the sympathetic nervous system
61	An overdose of a barbiturate anesthetic can be appropriately treated with all of the following except	a	Respiratory stimulant
		b	Fluid therapy
		c	Ventilator support
		d	An increase in the concentration of isoflurane
62	Kidney function can be assessed by the following preanesthetic screening tests except	a	BUN
		b	ALT
		c	Urinalysis
		d	Creatinine
63	The oxygen-carrying capacity of the blood can be assessed by measuring all of the following except	a	PCV
		b	Hematocrit
		c	Total solids
		d	Hemoglobin
64	A patient's hydration status can be assessed by all the following except	a	Respiratory rate
		b	PCV
		c	Total solids
		d	Skin turgor
65	Local anesthetics	a	Cause increased release of inhibitory neurotransmitters
		b	Interfere with transmission of the impulse along the nerve fiber
		c	Disrupt nerve impulse transmission at the NMJ
		d	Block catecholamine release

66	___ pain originates from internal organs.	a	Somatic
		b	Preemptive
		c	Visceral
		d	Referred
67	Hypothermia	a	Prolongs anesthetic induction
		b	Prolongs anesthetic recovery
		c	Is common in obese patients
		d	Is of no concern in neonatal patients
68	Which of these is a cyclohexamine agent?	a	Ketamine
		b	Acetylpromazine
		c	Xylazine
		d	Propofol
69	The common drug used for epidural anesthesia is	a	Thiopental
		b	Ketamine
		c	Propofol
		d	Lidocaine
70	What drug is an antagonist of medetomidine (Domitor)?	a	Yohimbine
		b	Dopram
		c	Atipamezole
		d	Naloxone
71	Nonsteroidal antiinflammatory drugs used to control mild postoperative pain include	a	Aspirin and xylazine
		b	Diazepam and acetaminophen
		c	Carprofen and ketoprofen
		d	Acetylpromazine and ibuprofen
72	The local anesthetic agent that has the longest duration of action is	a	Lidocaine
		b	Mepivacaine
		c	Tetracaine
		d	Bupivacaine
73	An alpha-2 agonist that provides sedation, muscle relaxation, and analgesia is	a	Acepromazine
		b	Xylazine
		c	Diazepam
		d	Ketamine
74	Medical oxygen cylinders are colored	a	Blue
		b	Gray
		c	Green
		d	Orange
75	Which of the following is not an opioid drug?	a	Diazepam
		b	Fentanyl
		c	Meperidine
		d	Butorphanol
76	Which of the following is not seen when ketamine is administered IV rather than IM?	a	Lower dose rate used
		b	Quicker onset of effects
		c	Longer duration of effects
		d	Less pain on injection
77	Which of the following is least likely to be a result of administering barbiturates perivascularly?	a	An excitement phase
		b	Pain
		c	Tissue sloughing
		d	Transient apnea
78	Which of the following cannot be used to detect blood pressure?	a	Oscillometer
		b	Doppler
		c	Sphygmomanometer
		d	Pulse oximeter
79	Which of the following drugs is useful in the treatment of prolonged anesthetic recoveries?	a	Diazepam
		b	Doxapram
		c	Dopamine
		d	Digoxin

80	For a Dorsoventral (DV) view of the entire skull, you should center the primary beam	a	At the medial canthi on the bridge of the nose
		b	Between the ears
		c	At the highest point of the zygomatic arch
		d	Between lateral canthi on sagittal crest
81	The best view of the elbow is	a	Dorsopalmar
		b	Palmarodorsal
		c	Caudocranial
		d	Craniocaudal
82	An ideal breed of dog to be kept as a blood donor is the	a	Greyhound
		b	Basset hound
		c	Dachshund
		d	Chihuahua
83	In general, how many days should be allowed for diet changes in dogs and cats?	a	5 to 7 days
		b	1 to 3 days
		c	48 to 72 hours
		d	28 days
84	On the average, an adult horse consumes approximately how many gallons of water per day?	a	10 to 15
		b	5 to 7
		c	25
		d	1
85	Birds are attracted to	a	Pelleted foods
		b	Human foods
		c	Brightly colored feed
		d	Foods high in salt
86	Potassium is critical for	a	Muscle function
		b	Weight gain
		c	Palatability
		d	Digestion
87	Appetite may be stimulated by all of the following, except	a	Certain medications
		b	Warming the food
		c	Sense of smell
		d	Refrigerating the food
88	What is the best method to encourage a goat to stand still?	a	Lift up the head and chin
		b	Cover an eye
		c	Hold up a front leg
		d	Tie to a fence
89	What species has the highest protein requirement?	a	Cats
		b	Dogs
		c	Rabbits
		d	Sheep
90	Cow's milk should not be given to puppies or kittens as a milk replacer because of its	a	Low protein and fat levels
		b	High fat and protein levels
		c	Low fat and higher protein levels
		d	High fat and lower protein levels
91	Rabbits should have an unlimited amount of	a	Alfalfa hay
		b	Alfalfa pellets
		c	Grass hay
		d	Fresh fruits and vegetables
92	Parvovirus causes what disease in cats?	a	Panleukopenia
		b	Rhinotracheitis
		c	Infectious peritonitis
		d	Infectious anemia

93	A dog has a history of not eating for 2 days and has lost 10% of its body weight. This weight loss is most likely due to a loss of	a	. Lean body mass
		b	Fat
		c	Glycogen
		d	Water
94	Scent glands in the male goat are located	a	Around the tail base
		b	Around the horn base
		c	In the groin area
		d	In the axial area
95	Cholesterol would be found in the highest concentration in	a	Corn oil
		b	Peanut butter
		c	Turkey breast without the skin
		d	Celery
96	Goiter can be caused by	a	Deficiency of iodine
		b	Deficiency of iron
		c	Deficiency of vitamin C
		d	Deficiency of essential fatty acids
97	Puncture wounds in horses and other species pose a particular risk for the development of	a	Rabies
		b	Colibacillosis
		c	Tetanus
		d	Strangles
98	Frequently, the most challenging aspect of housing goats is	a	Building materials
		b	Fencing
		c	Heating
		d	Size considerations
99	What nutrient is not an energy-producing nutrient?	a	Sugars
		b	Amino acids
		c	Minerals
		d	Fatty acids
100	Process in which foreign DNA is introduced into another cell with the help of a viral vector	a	Conjugation
		b	Transformation
		c	Both a & b
		d	Transduction
101	Time of ovulation in Cattle is	a	10-15 hr after end of oestrus
		b	12-24 hr before end of oestrus
		c	1-2 days before end of oestrus
		d	1-2 days after the onset of true oestrus
102	Which is an imino acid?	a	Proline
		b	Tryptophan
		c	Arginine
		d	Glycine
103	Which of the following is a spasmolytic agent	a	Hyoscine
		b	Vetrabutine
		c	Dipyrone
		d	All
104	Recurring tympany is noticed in following condition	a	TRP
		b	Diaphragmatic hernia
		c	Reticulo-omasal stenosis
		d	All
105	A mating system designed to create a purebred population by mating successive generations of non-purebred females to purebred sires	a	Top crossing
		b	Incrosses
		c	Incross breeding
		d	Criss crossing
106	Spastic and flaccid paralysis of worms are caused by the following drugs respectively	a	Phenothiazine & Amitraz
		b	Oxyclozanide & Livamizole
		c	Pyrantel & Piperazine
		d	Piperazine & Pyrantel

107	The causative agent for Ring worm infection in cattle	a	Trichophyton verrucosum
		b	Microsporium gallinae
		c	Trichophyton mentagrophytes
		d	Both a& c
108	Ivermectin is not effective against flukes and tapeworm infections because	a	Fumerate reductase is not present in flukes and tapeworms
		b	Acetyl choline transmission is not present in flukes and tapeworms
		c	Mitochondrial phosphorylation is not present in flukes and tapeworms
		d	GABA transmission is not present in flukes and tapeworms
109	Age at which testes descend into the scrotum/testicular descent in Cats is	a	Midgestation
		b	Between last few days of gestation and first few days after birth
		c	Last few days of gestation
		d	2-5 days after birth
110	Hepatitis cysticercosa” in sheep is a condition associated with	a	Cysticercus bovis
		b	Cysticercus cellulosae
		c	Cysticercus tenuicollis
		d	Cysticercus fasciolaris
111	Which one is exocrine gland?	a	Pineal
		b	Hypothalamus
		c	Sweat gland
		d	Adrenal gland
112	Sertoli cell secrete?	a	Sperm
		b	Testosterone
		c	seminal fluid
		d	Estrogen
113	Antibiotic which is not bacteriostatic?	a	Tetracycline
		b	chloramphenicol
		c	Ampicillin
		d	All of them
114	What vitamin is not fat soluble?	a	A
		b	D
		c	E
		d	C
115	Horses prone to esophageal obstruction should not be fed	a	Pellets
		b	Grain
		c	Hay
		d	Salt
116	During pregnancy, goats require extra dietary energy during the last	a	4 months
		b	3 months
		c	2 months
		d	1 week
117	Most scent glands in male goats can be destroyed at the time of	a	Birth
		b	Weaning
		c	Foot trimming
		d	Dehorning
118	Which of the following is not recommended for a weak foal?	a	Bucket feeding
		b	Bottle feeding
		c	Nasogastric intubation
		d	Intravenous nutrition
119	Lack of what vitamin can cause deafness, tissue malfunction, and large coarse skin lesions in dogs?	a	A
		b	K
		c	B 1
		d	B 12

120	What clinical condition is often mistaken for obesity and may conceal malnutrition?	a	Diarrhea
		b	Ascites
		c	Anemia
		d	Pancreatitis
121	What nutrient makes up the greatest part of most dog rations and supplies energy?	a	Protein
		b	Fat
		c	Carbohydrates
		d	Vitamins and minerals
122	What nutrient will provide the most calories per gram?	a	Carbohydrates
		b	Fats
		c	Vitamins
		d	Proteins
123	What is a trichobezoar?	a	Hairball
		b	Laceration
		c	Abscess on the body surface
		d	Any ingested metal foreign body
124	What piece of restraint equipment is most commonly used on horses?	a	Twitch
		b	Hobbles
		c	Cradle
		d	Halter
125	The knot or hitch used to secure a rope to a vertical bar without slippage is the	a	Clove hitch
		b	Halter tie
		c	Half hitch
		d	Bowline
126	When restraining a rooster, be most careful of the	a	Beak
		b	Spurs
		c	Wings
		d	Feet
127	Normal behavior for a healthy, well-socialized cat in a new place is to	a	Cower in a corner
		b	Lose bladder and bowel control
		c	Sit in one spot
		d	Look around and investigate
128	Of the cattle listed, which is most likely to be docile?	a	Dairy bull
		b	Beef bull
		c	Dairy cow
		d	Beef cow
129	The "shepherd's crook" is used around the	a	Front leg
		b	Chest
		c	Back leg
		d	Neck

Key Miscellaneous Section C:

No.	Answer	No.	Answer	No.	Answer
1	A	51	C	101	A
2	A	52	D	102	A
3	B	53	B	103	D
4	B	54	C	104	B
5	D	55	D	105	A
6	B	56	D	106	C
7	B	57	C	107	D
8	D	58	A	108	D
9	B	59	D	109	D
10	C	60	D	110	C
11	B	61	D	111	C
12	C	62	B	112	B
13	B	63	C	113	C
14	A	64	A	114	D
15	D	65	B	115	A
16	C	66	C	116	C
17	B	67	B	117	D
18	A	68	A	118	B
19	A	69	D	119	A
20	D	70	C	120	B
21	A	71	C	121	C
22	B	72	D	122	B
23	C	73	B	123	A
24	B	74	C	124	B
25	D	75	A	125	A
26	B	76	C	126	B
27	D	77	D	127	D
28	B	78	D	128	C
29	D	79	B	129	C
30	C	80	D		
31	B	81	D		
32	D	82	A		
33	C	83	A		
34	B	84	A		
35	C	85	C		
36	C	86	A		
37	A	87	D		
38	B	88	C		
39	A	89	A		
40	D	90	A		
41	A	91	C		
42	D	92	A		
43	A	93	D		
44	B	94	B		
45	A	95	C		
46	C	96	A		
47	B	97	C		
48	C	98	B		
49	C	99	C		
50	B	100	D		

Parasitology

PARA Section A: Protozoology

No.	Question	Choice	Answer
1	Haemoglobinuria is seen in-	a	Theileriosis
		b	Leptospirosis
		c	Salmonellosis
		d	Pasturellosis
2	All are true for protozoa, except	a	Unicellular organisms
		b	Obtain their energy from organic material
		c	Contain genetic material in a nuclear envelop
		d	Possess a rigid cellulose wall
3	The conversion of a sporozoites to cyst form is known as	a	Excystation
		b	Encystation
		c	Sporogony
		d	Merogony
4	<i>Trypanosoma brucei</i> is transmitted by	a	<i>Glossina</i>
		b	<i>Triatoma</i>
		c	<i>Pulex irritans</i>
		d	<i>Pediculosis capitis</i>
5	The flask-shaped ulcers in the mucosa of the large intestine in humans are caused by	a	<i>Cryptosporidium</i>
		b	<i>Giardia</i>
		c	<i>Entamoeba</i>
		d	<i>Toxoplasma</i>
6	Chagas disease in humans is caused by	a	<i>Trypanosoma brucei</i>
		b	<i>Trypanosoma equiperdum</i>
		c	<i>Trypanosoma evansi</i>
		d	<i>Trypanosoma cruzi</i>
7	Which of the following protozoa are known as diplomonads	a	<i>Cryptosporidium</i>
		b	<i>Giardia</i>
		c	<i>Entamoeba</i>
		d	<i>Eimeria</i>
8	All of the following protozoa are food and water-borne, except	a	<i>Leishmania</i>
		b	<i>Giardia</i>
		c	<i>Entamoeba</i>
		d	<i>Cryptosporidium</i>
9	Nagana disease in cattle is caused by	a	<i>Trypanosoma brucei</i>
		b	<i>Trypanosoma cruzi</i>
		c	<i>Trypanosoma evansi</i>
		d	<i>Trypanosoma equiperdum</i>
10	<i>Trypanosoma cruzi</i> is transmitted by	a	<i>Glossina</i>
		b	<i>Triatoma</i>
		c	<i>Pulex irritans</i>
		d	<i>Pediculosis capitis</i>
11	The epimastigote form of <i>Trypanosoma</i> can be found in	a	Mid gut of vector
		b	Hind gut of vector
		c	Salivary glands of vector
		d	Faeces of vector
12	The inflammation at the site of bite by <i>Trypanosoma brucei</i> is known	a	Chancre
		b	Winterbottom's sign
		c	Duck hunter's itch
		d	Schizophrenia

13	The enlarged lymph nodes especially at posterior cervical region in <i>Trypanosoma brucei</i> infection is known as	a	Trypanosoma Chancre
		b	Winter bottom's sign
		c	Chagoma
		d	Duck hunter's itch
14	<i>Trypanosoma brucei</i> induces sleeping sickness in host by the production of	a	Ethanol
		b	Methanol
		c	Tryptophol
		d	Isopropanol
15	The unilateral conjunctivitis together with oedema of upper and lower eye lids and cheek <i>Trypanosoma cruzi</i> infection is known as	a	Romana's sign
		b	Winter bottom's sign
		c	Spring bottom's sign
		d	Summer bottom's sign
16	<i>Leishmania</i> multiply within	a	RBCs
		b	Macrophages
		c	Hepatosytes
		d	Spleenocytes
17	Cutaneous leishmaniosis or "oriental sore" in humans is caused by	a	<i>Leishmania donovani</i>
		b	<i>Leishmania chagasi</i>
		c	<i>Leishmania infantum</i>
		d	<i>Leishmania tropica</i>
18	Visceral leishmaniosis in humans is caused by	a	<i>Leishmania donovani</i>
		b	<i>Leishmania chagasi</i>
		c	<i>Leishmania infantum</i>
		d	<i>Leishmania tropica</i>
19	Trypomastigotes stage of <i>Trypanosoma</i> usually found in	a	Invertebrate host
		b	Vertebrate host
		c	Both
		d	None
20	Species of Trypanosomes develop in the anterior portion of the insect gut are called as	a	Stercoraria
		b	Salivaria
		c	Both
		d	None
21	Species of <i>Trypanosomes</i> develop in the posterior portion of the insect gut are called as	a	Stercoraria
		b	Salivaria
		c	Both
		d	None
22	How long after conception does <i>Tritrichomonas foetus</i> cause abortions in cattle?	a	One week
		b	2-3 weeks
		c	2-3 months
		d	4-6 months
23	Which of the following species is responsible for East Coast Fever (ECF)?	a	<i>Theileria hirci</i>
		b	<i>Theileria parva</i>
		c	<i>Babesia bovis</i>
		d	<i>Theileria mutans</i>
24	Which of the following species is responsible for Texas Cattle Fever (TCF)?	a	<i>Theileria sergenti</i>
		b	<i>Theileria annulata</i>
		c	<i>Babesia bigemina</i>
		d	<i>Babesia bovis</i>
25	Which of the following genera ticks is the primary vector for <i>Theileria para</i> ?	a	<i>Rhipicephalus</i>
		b	<i>Hyalomma</i>
		c	<i>Amblyomma</i>
		d	<i>Haemaphysalis</i>
26	<i>Giardia</i> trophozoites contains	a	one nucleus
		b	two nuclei
		c	three nuclei
		d	four nuclei

27	A unique ultrastructural feature of <i>Giardia</i> is the adhesive disk also called as	a	ventral disk
		b	sucking disk
		c	sucker
		d	all above
28	<i>Balantidium coli</i> contains	a	macro nucleus
		b	micro nucleus
		c	Both
		d	None
29	The sporulated oocyst of genus <i>Eimeria</i> contain	a	2 sporocysts
		b	3 sporocyst
		c	4 sporocyst
		d	6 sporocyst
30	Each sporocyst of genus <i>Eimeria</i> contains	a	2 sporozoites
		b	4 sporozoites
		c	6 sporozoites
		d	8 sporozoites
31	Cecal coccidiosis of chickens is caused by	a	<i>Eimeria acervulina</i>
		b	<i>E. tennella</i>
		c	<i>E. necatrix</i>
		d	all above
32	In chickens, Intestinal coccidiosis is caused by	a	<i>E. necatrix</i>
		b	<i>E. brunetti</i>
		c	<i>E. maxima</i>
		d	all above
33	Cecal coccidiosis in chickens may be confused with	a	blackhead
		b	salmonellosis
		c	Both
		d	None
34	<i>Toxoplasma gondii</i> , a member of the	a	Apicomplexa
		b	Sporozoa
		c	Mastigophora
		d	Ciliata
35	Leishmaniasis is transmitted by	a	Tsetse fly
		b	Horse fly
		c	Sand fly
		d	House fly
36	Oocyst of genus <i>Isospora</i> contains	a	2 sporocysts each having four sporozoites within it
		b	4 sporocysts each having four sporozoites within it
		c	6 sporocysts each having four sporozoites within it
		d	8 sporocysts each having four sporozoites within it
37	The cysts of sarcocystis are found in the	a	striated muscles
		b	smooth muscles
		c	Both
		d	None
38	The cysts of the genus sarcocystis are know as	a	Rainy's corpuscles
		b	Miescher's tubules
		c	Both
		d	None
39	The tachyzoite of <i>Toxoplasma</i> are	a	crescent or banana-shaped
		b	Oval shaped
		c	Pear shaped
		d	rod shaped

40	Drug of choice against east coast fever	a	arvaquone
		b	buparvaquone
		c	halofuginone lactate
		d	tetracycline
41	Anaplasmosis transmitted mechanically by	a	Horse flies
		b	deer flies
		c	stable flies
		d	all above
42	Leucocytozoonosis is transmitted	a	horse fly
		b	house fly
		c	Tsetse fly
		d	black fly
43	<i>Histomonas meleagridis</i> cause a disease commonly called	a	black quarter
		b	Blackhead
		c	Cracker
		d	Anemia
44	Which of the following species of plasmodium cause malaria in birds	a	<i>Plasmodium falciparum</i>
		b	<i>Plasmodium relictum</i>
		c	<i>Plasmodium malariae</i>
		d	<i>Plasmodium bubalis</i>
45	Which of the following species of plasmodium cause malaria in animals	a	<i>Plasmodium malariae</i>
		b	<i>Plasmodium relictum</i>
		c	<i>Plasmodium polare</i>
		d	<i>Plasmodium circumflexum</i>
46	Amastigote form of <i>Leishmania</i> can be found in	a	Vertebrate host
		b	Invertebrate host
		c	Intermediate host
		d	All of the above
47	<i>Trypanosoma equiperdum</i> cause disease in equines called as	a	Nagana
		b	Dorin
		c	Surra
		d	Muri
48	The protozoan parasite <i>Histomonas meleagridis</i> is transmitted through ingestion of eggs of	a	<i>Haemonchus contortus</i>
		b	<i>Ancylostoma caninum</i>
		c	<i>Dirofilaria immitis</i>
		d	<i>Heterakis gallinarum</i>
49	Congenital hydrocephalus is mostly seen in which of the following protozoal infection?	a	Trypanosoma
		b	Leishmania
		c	Toxoplasma
		d	Babesia
50	Which of the following is a rickettsial disease?	a	Anaplasmosis
		b	Babesiosis
		c	Toxoplasmosis
		d	Histomoniasis

PARA Key Section A: Protozoology

No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	A	14	C	27	A	40	B
2	D	15	B	28	C	41	D
3	B	16	B	29	C	42	D
4	A	17	D	30	A	43	B
5	C	18	A	31	B	44	B
6	D	19	B	32	D	45	A
7	B	20	B	33	B	46	A
8	A	21	A	34	A	47	B
9	A	22	B	35	C	48	D
10	B	23	B	36	A	49	C
11	C	24	C	37	A	50	A
12	A	25	A	38	B		
13	B	26	B	39	A		

PARA Section B: Helminthology

No.	Question	Choice	Answer
1	Benzimidazoles work against parasites by	a	Binding with protein tubulin
		b	Mimicking acetylcholine
		c	Paralysing worms
		d	None of above
2	Levamisole work against parasites by	a	Binding with protein tubulin
		b	Mimicking acetylcholine
		c	Both
		d	None
3	In horses Fenbendazole is used to kill	a	Ticks
		b	Protozoa
		c	Mites
		d	Helminthes
		e	None
4	Avermectins act against parasites by	a	Stopping the energy metabolism
		b	Inhibiting the Cholinesterase
		c	Changing the chloride ion channel activity
		d	None of these
5	Anti-cestodal drugs include	a	Niclosamide
		b	Organophosphate
		c	Levamisole
		d	None
6	Praziquantel is effective against	a	Trematodes
		b	Cestodes
		c	Nematodes
		d	Both a & b
7	Humans are----- hosts of <i>Fasciola hepatica</i>	a	Accidental
		b	Definative
		c	Intermediate
		D	None
8	Which one of the followings is correct statement	a	Almost all trematodes are hermaphrodite
		b	All are hermaphrodite except Schistosomatidae
		c	Members of Genus Fasciola are hermaphrodite
		d	All of above
9	Lancet liver fluke is the common name of	a	<i>Fasciola hepatica</i>
		b	<i>Opisthorchisviverrini</i>
		c	<i>Clonorchissinensis</i>
		d	None
10	Which one is the correct way to write the name of an organism in Binomial nomenclature system?	a	Fasciolahepatica
		b	<i>Fasciola hepatica</i>
		c	Fasciola hepatica
		d	Both a and b
		e	All of above
11	Heart worm of dog is the name given to	a	<i>Dirofilariaimmitis</i>
		b	<i>Diptelonemareconditum</i>
		c	<i>Taeniasaginata</i>
		d	<i>Taeniasolium</i>
		e	<i>Setariacervi</i> <i>Echinococcusgranulosus</i>

12	Fragments of parasites present in faeces	a	<i>Haemonchus contortus</i>
		b	<i>Trichostrongylus</i>
		c	<i>Oesophagostomum</i>
		d	<i>Ascaris lumbricoides</i>
13	Kidney worm of dog is	a	<i>Dioctophyma renale</i>
		b	<i>Necator americanus</i>
		c	<i>Dipteloneum reconditum</i>
		d	<i>Oesophagostomum</i>
		e	<i>Ascaris lumbricoides</i>
14	Helminth parasite found in muscles is	a	<i>Trichinella spiralis</i>
		b	<i>Haemonchus contortus</i>
		c	<i>Trichostrongylus</i>
		d	<i>Oesophagostomum</i>
		e	<i>Ascaris lumbricoides</i>
15	River blindness is also known as	a	Haemonchosis
		b	Echinococcosis
		c	Onchocerciasis
		d	None of them
		e	All of above
16	Chinese or Oriental liver fluke is called as	a	<i>Fasciola hepatica</i>
		b	<i>Clonorchis sinensis</i>
		c	<i>Fasciola buskii</i>
		d	<i>Oesophagostomum</i>
		e	<i>Ascaris lumbricoides</i>
17	Change of animal species for grazing in a particular pasture is known as	a	Alternate grazing
		b	Rotational grazing
		c	Replacement grazing
		d	All of above
18	Change of pastures for the animals is known as	a	Alternate grazing
		b	Replacement grazing
		c	Rotational grazing
		d	All of above
		e	None
19	In Pakistan, the prevalence of gastrointestinal nematodes is higher during	a	July – August
		b	March – April
		c	November – December
		d	January – February
		e	None
20	Inhibited larval development is also known as	a	Arrested larval development
		b	Prepatent period
		c	Dissemination
		d	Periparturient rise
		e	None of above
21	L3 may survive in the pastures from autumn until late spring in sufficient numbers to initiate infection are called as	a	Overwintered larvae
		b	Arrested larvae
		c	Mature larvae
		d	Adults
		e	None of above
22	Floatation solutions used for faecal examination are	a	NaCl Zn SO ₄
		b	Mg SO ₄
		c	All above
		d	None

23	Factors affecting faecal egg count are	a	Anthelmintic history and season
		b	Season and Type of parasites
		c	Type of parasite spp. and breed of animal
		d	Breed of animal and season
		e	All above
24	The anthelmintic also used for ectoparasites is	a	Ivermectin
		b	Benzimidazole
		c	Levamisole
		d	AIL
		e	None
25	The parasite of marshy areas is	a	Fasciola
		b	Haemonchus
		c	Trichostrongylus
		d	None
26	Parasite transmitted by eating poorly cooked beef is	a	<i>TaeniaSaginata</i>
		b	Haemonchus
		c	Trichostrongylus
		d	None
27	Hydatidosis is caused by	a	<i>TaeniaSaginata</i>
		b	Haemonchus
		c	<i>Echinococcusgranulosus</i>
		d	Trichostrongylus
		e	None
28	Following is the namatode parasite of poultry	a	<i>Ascarislumbricoides</i>
		b	<i>Ascaridiagalli</i>
		c	Haemonchus
		d	Trichostrongylus
29	The largest tapeworm of poultry is	a	Railletina
		b	<i>Taeniasaginata</i>
		c	Haemonchus
		d	Trichostrongylus
		e	None
30	Nematodes mostly feed on	a	Host tissue
		b	Fluids
		c	Gut contents
		d	Blood
		e	All
31	Mode of reproduction of nematode is	a	Ovoviviparous
		b	Oviparous
		c	Parthenogenesis
		d	a, b
		e	a, b, c
32	Direct life cycle is also called	a	Monoxenous
		b	Heteroxenous
		c	Complete
		d	None
33	Usually the intermediate host of nematodes is	a	Arthropod
		b	Trematode
		c	Both a and b
		d	None
34	Larvae of following nematodes can penetrate the skin	a	<i>Ascarislumbricoides</i>
		b	<i>Haemonchus</i>
		c	<i>Trichostrongylus</i>
		d	All
		e	None

35	Maturation of Gastrointestinal nematodes mostly occurs in Faeces	a	Ground/soil
		b	Vegetation
		c	Intermediate host
		d	Gastrointestinal tract
36	Large roundworm of horse is	a	<i>Parascarisequorum</i>
		b	<i>TaeniaSaginala</i>
		c	<i>Haemonchus</i>
		d	<i>Trichostrongylus</i>
		e	None
37	Large roundworm of ruminants is	a	<i>Diphylobothriumlatum</i>
		b	<i>Toxocaravitulorum</i>
		c	<i>TaeniaSaginala</i>
		d	<i>Haemonchus</i>
		e	None
38	Caecal worm is the name of	a	<i>Diphylobothriumlatum</i>
		b	<i>TaeniaSaginala</i>
		c	<i>Heterakisgallarum</i>
		d	<i>Haemonchusspp.</i>
		e	None
39	Following is the example of hookworm	a	<i>Ancylostomacanimum</i>
		b	<i>Barderpole worm</i>
		c	<i>Haemonchuscontortus</i>
		d	All of above
		e	None
40	Body of following parasite is ribbon like	a	Cestodes
		b	Tapeworm
		c	Roundworms
		d	a and b
		e	All of above
41	<i>Clonorchis sinensis</i> is commonly known as	a	Chinese liver fluke
		b	Oriental liver fluke
		c	Both of above
		d	None of above
42	Primary site of infection of adult <i>Fasciola hepatica</i> is	a	Bile duct
		b	Liver Parenchyma
		c	Skin
		d	Lung
43	Common name of <i>Prosthogonimus macrorchis</i> is	a	Testes fluke
		b	Liver Fluke
		c	Ruminal Fluke
		d	Oviduct Fluke
44	<i>Prosthogonimus macrorchis</i> is found in _____ of FH	a	Oviduct
		b	Bursa of fabricius
		c	Both
		d	None
45	Oviduct fluke is parasite of	a	Ovine
		b	Bovie
		c	Equine
		d	None
46	<i>Echinococcus granulosus</i> normally contains following number of segments	a	1-3
		b	3-5
		c	5-10
		d	10-100
47	Baermann apparatus is used for	a	Counting the eggs on pasture
		b	Counting the adult worm in animals
		c	Counting the egg per gram of faeces
		d	Counting the nematode larvae in sample
		e	None

48	Knott's concentration technique is used to	a	Calculate egg per gram of faeces
		b	Estimate the infection level on pasture
		c	Diagnose microfilaria in blood
		d	All of above
		e	None
49	Final host of <i>Echinococcus granulosus</i> is	a	Carnivores
		b	Herbivores
		c	Both
		d	None
50	Among all helminths only following are having segmented body	a	Nematodes
		b	Acanthocephalans
		c	Trematodes
		d	Cestodes

PARA Key Section B: Helminthology

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	A	11	A	21	A	31	E	41	C
2	B	12	A	22	D	32	A	42	A
3	D	13	A	23	E	33	A	43	D
4	C	14	A	24	A	34	A	44	A
5	A	15	C	25	A	35	E	45	D
6	D	16	B	26	A	36	A	46	B
7	A	17	A	27	C	37	B	47	D
8	B	18	C	28	B	38	C	48	C
9	C	19	A	29	A	39	A	49	A
10	D	20	A	30	E	40	B	50	D

PARA Section C: Entomology

No.	Question	Choice	Answer
1	Insecticides generally targets the	a	CNS
		b	Growth and Development
		c	Metabolism (water and ion imbalance) & Energy Production.
		d	Circulatory System Interference
		e	All of these
2	Choline Esterase Inhibitor plays at	a	Axon and Dendrite of neuron
		b	Synapse
		c	Body of Neuron
		d	Generation of Impulse
3	In CNS firing is meant for	a	Ignition
		b	Burning of acids at Synapse
		c	Exiting the Axon of next neuron
		d	Changing the ecology of Synaptic Cleft
4	In nervous tissue Sodium and Chloride pumps channel works for	a	Maintaining acid base balance
		b	Act as a buffer
		c	Conduction of Nerve impulse
		d	All of these
5	Which broader categories used for Chloride channel modulator	a	Ivermectin
		b	Avermectin
		c	Fipronil
		d	All of these
		e	Both b & c
6	Anti-Coagulant insecticide has to mess with	a	Blood clotting protein factors
		b	Platelets aggregation factors
		c	Vit. K availability
		d	All of these
7	Organic Insecticides include	a	Silica gels
		b	Dusts
		c	Boric Acids
		d	Fipronil
8	Juvenile hormone is essential for the process of	a	Molting
		b	Metamorphosis
		c	Both a & b
		d	None of these
9	Chitin synthatase inhibitor is lethal for	a	Insects
		b	Animals
		c	Humans
		d	All of these
10	The signs of poisoning with organophosphorous anticholinesterase insecticides do not include, in Humans:	a	Bronchoconstriction
		b	Mydriasis
		c	Intestinal spasm
		d	Increased bronchial secretions
11	The saliva of blood sucking insects has	a	No enzyme
		b	Enzyme
		c	Carbohydrates
		d	Lipids
12	Mechanoreceptor responds to which stimuli	a	Touch
		b	Taste
		c	Sound
		d	Chemical

13	The aedeagus is also known as	a	Spermatheca
		b	Recepticulum seminis
		c	Abdomen
		d	Penis
14	Number of gastric caecae present in digestive system of insects	a	3-5
		b	2-4
		c	2-6
		d	5-10
15	Foregut of insects is also known as	a	Stomodaeum
		b	Mesentron
		c	Proctodaeum
		d	Recepticulum
16	Ovipositor is used for	a	Protecting eggs
		b	Releasing eggs
		c	Hatching eggs
		d	Copulation
17	The dorsal surface of thorax is also known as	a	Sterna
		b	Pleura
		c	Nota
		d	Plumose
18	The acid secreted by ants is	a	Nitric acid
		b	Sulphuric acid
		c	Formic acid
		d	Citric acid
19	The valve used to control the back flow of digesta from ventriculus to crop is	a	Mesentronic valve
		b	Proctodaeal valve
		c	Stomodaeal valve
		d	Atrial valve
20	The legs present on the abdomen of the insects are known as	a	Prolegs
		b	Prelegs
		c	Extra legs
		d	Rudimentary legs
21	Phthiraptera is a	a	Chewing lice
		b	Sucking lice
		c	Mite
		d	Fly
22	Eggs of Phthiptera are	a	Non operculated
		b	Operculated
		c	Stalked
		d	None of above
23	<i>Menopon gallinae</i> is _____ of birds	a	Shaft louse
		b	Wing louse
		c	Head louse
		d	None of above
24	Members of Amblycera bite	a	Horizontally
		b	Longitudinally
		c	Diagonally
		d	None of above
25	<i>Columbicola columbae</i> is parasitic on	a	Pigeons
		b	Doves
		c	Both of these
		d	None of these
26	Members of Ischnocera bite	a	Vertically
		b	Diagonally
		c	Horizontally
		d	All of these

27	<i>Goniocotes gallinae</i> is known as	a	Fluff louse
		b	Shaft louse
		c	Wing louse
		d	None
28	<i>Bovicola bovis</i> is a louse of	a	Horse
		b	Dog
		c	Cat
		d	Cattle
29	Sites of louse infestation are	a	Skin
		b	Hair
		c	Feathers
		d	All
30	Life cycle stages of louse are as follow	a	Egg, nymph, adult
		b	Egg, larvae, adult
		c	Egg, larvae, nymph, adult
		d	All are correct
31	Ticks belong to which major class?	a	Myriapoda
		b	Crustacea
		c	Arachnida
		d	Insecta
32	Members of Order Diplopoda are also known as:	a	Mites
		b	Centipedes
		c	Millipedes
		d	None of these
33	Following are orders of class Insecta except:	a	Hemiptera
		b	Diptera
		c	Odonata
		d	Amphipoda
34	Following are orders of class Crustacea except:	a	Opiliones
		b	Mysidacea
		c	Amphipoda
		d	Decapoda
35	Shrimps belong to the class:	a	Insecta
		b	Crustacea
		c	Arachnida
		d	Myriapoda
36	Mosquitoes belong to the order:	a	Hemiptera
		b	Orthoptera
		c	Diptera
		d	Trichoptera
37	Order Acarina contains:	a	Ticks
		b	Mites
		c	Both
		d	None of these
38	Lice are categorized in subclass as:	a	Apterygota
		b	Exopterygota
		c	Endopterygota
		d	None of these
39	Centipedes are:	a	Insects
		b	Arachnids
		c	Crustaceans
		d	Myriapods
40	Members of order Hemiptera are also called as:	a	Ticks
		b	Mites
		c	Bugs
		d	Spiders

41	Exoskeleton, a segmented body and jointed appendages are attributed to phylum	a	Annelida
		b	Porifera
		c	Arthropoda
		d	Mollusca
42	“Ladder like” nervous system is characteristic feature of	a	Ctenophora
		b	Nematomorpha
		c	Acanthocephala
		d	Arthropoda
43	Following are the subphylum of phylum arthropoda except	a	Trilobitomorpha
		b	Hexapoda
		c	Myriapoda
		d	Brachiopoda
44	Which class does not belong to phylum arthropoda	a	Diplopoda
		b	Merostoma
		c	Arachnida
		d	Oligochaeta
45	Order responsible for the spread of Dengue Hemorrhagic Fever	a	Diptera
		b	Decapoda
		c	Coleoptera
		d	Lepidoptera
46	Vector helping the transmission of West Nile Virus belong to	a	Family Culicinae
		b	Sub-family Anophelinae
		c	Family Anophelinae
		d	Sub-family Culicinae
47	Cockroaches belong to the order	a	Dermaptera
		b	Dictyoptera
		c	Mallophaga
		d	Orthoptera
48	Order Siphunculata comprises of	a	True Bugs
		b	Termites
		c	Sucking Lice
		d	Fleas
49	Mites are classified in to order	a	Araneae
		b	Xiphosura
		c	Solifuga
		d	Acari
50	Following are the members of Class Insecta except	a	Mayflies
		b	Termites
		c	True bugs
		d	Fish lice
51	Mouth parts of bugs are adapted for	a	Piercing
		b	Sucking
		c	Both
		d	None of these
52	Hard whitish swelling on bite is present in	a	Flea bite
		b	Mosquito bite
		c	Bug bite
		d	None of these
53	Unhatched bug eggs are	a	Opalescent & translucent
		b	Oval & white
		c	Opaque & white
		d	Oval & creamy
54	Female bug lay	a	70-80 eggs
		b	100-150 eggs
		c	150-200 eggs
		d	300-400 eggs

55	Adults bugs of family ---- are larger	a	reduviidae
		b	Cimicidae
		c	Both
		d	None of these
56	How many nymphal stages are present in bugs	a	4
		b	8
		c	5
		d	7
57	Bugs abdomen is divided into how many segments	a	3
		b	5
		c	6
		d	8
58	How many pair of vestigial wings is present in bugs	a	4
		b	6
		c	8
		d	2
59	Bug abdomen is covered with	a	Spines
		b	Bristles
		c	Grooves
		d	None of these
60	Adult bugs are	a	Dorsoventrally compressed
		b	Oval
		c	Pear shape
		d	Dorsoventrally flattened
61	"Ptera" means	a	Wings
		b	Antennae
		c	Halter
		d	None of above these
62	Halters are the balancing organ in order Diptera are formed by	a	forelegs
		b	hindlegs
		c	forewings
		d	hindwings
63	Members of nematocera are called as	a	Large sized flies
		b	Small sized flies
		c	medium to large sized flies
		d	Small to medium sized flies
64	"Bitings midges" are the members in Nematoceran family	a	Ceratopogonida
		b	Simulidae
		c	Psychodidae
		d	Culicidae
65	Members of Psychodidae family in Nematocera are commonly known as	a	Bitings midges
		b	sand flies
		c	Black flies
		d	Mosquitoes
66	Arista is present in the antennae of	a	Nematocera
		b	Brachycera
		c	cyclorhapha
		d	Mallophaga
67	Notify one of following suborder which is odd with respect to other three	a	Nematocera
		b	Brachycera
		c	cyclorhapha
		d	Mallophaga
68	Eyes of black flies can be	a	Diopic
		b	Holoptic
		c	Both a & b
		d	None of these

69	Simulium may have following larval instars	a	Upto 5
		b	Upto 6
		c	Upto 7
		d	Upto 8
70	Bluetongue is transmitted by	a	Culicidae
		b	simulium
		c	Culicoides
		d	Phlebotomus
71	Scientific name of bedbug is	a	Cimex lectularius
		b	Cimex hemipetrus
		c	Laptocimex boueti
		d	None of the above
72	Regarding morphology of bugs all are true except	a	Long antennae
		b	Compound eyes
		c	Vestigial wings
		d	Abdomen with 6 segments
73	In female bugs incision on abdomen is called	a	Mesospermaleage
		b	Organ of Ribaga
		c	Only a
		d	Both a & b
74	Life cycle of bugs are termed as	a	Hemimetabolous
		b	Incomplete metamorphosis
		c	Paurometabolism
		d	All of these
75	Condition that cause by bugs in poultry is	a	Irritation
		b	Allergy
		c	Swelling
		d	Anemia
76	Choose the most appropriate statement	a	Bedbugs infestations are mostly recorded in dilapidated buildings and good hygienic measures
		b	Hepatitis B and 27 other pathogens are recorded in bedbugs and also transmit them
		c	Bedbugs not considered as a vector for transmitting of pathogens to humans
		d	Bedbugs cannot be controlled through insecticides
77	Which one is not the morphological part of bug	a	Pronotum
		b	Paragenital sinus
		c	Mesonotum scutellum
		d	Claws
78	Infested premises by bugs can be fumigated by	a	Permethrin spray
		b	Wood smoke
		c	Use of disinfectent
		d	All of the above
79	Appropriate biting time of bugs is	a	Rarely at night
		b	Mostly at day time
		c	Both a & b
		d	None of the above
80	Curved shape penis present in male bug specie	a	Cimex lectularius
		b	Cimex hemipetrus
		c	None of these
		d	Both a & b
81	Females of mosquitoes lay single egg except that.	a	Culex
		b	Anopheles
		c	Aedes
		d	Both b & c

82	The larva, of mosquitoes also known as, has a well-developed head and a distinct thorax and abdomen.	a	Pectan
		b	Comb
		c	Wiggler
		d	Both b & c
83	Cyclorrhapha are small to medium sized flies with short, segmented antennae, the last of which often bears a feather-like attachment, the arista.	a	Three
		b	Four
		c	Five
		d	Six
84	The larvae of flies have a poorly defined, and are mobile and worm-like, often being referred to as 'maggots'.	a	Head
		b	Thorax
		c	Abdomen
		d	Both a & b
85 does not lay eggs but produces one larva at a time when it is grown and ready to pupate.	a	Buffalo fly
		b	Tsetse fly
		c	House fly
		d	Bot fly
86	Horse flies and are very striking in their appearance. They are fairly large flies with aggressive biting habits.	a	Tsetse flies
		b	Buffalo flies
		c	House flies
		d	Deer flies
87	The house fly is a developmental host for Habronema musae and Draschia megestoma, spirurid nematodes the cause gastric and cutaneous forms of habronemiasis in horses.	a	Tsetse fly
		b	Buffalo fly
		c	House fly
		d	Deer fly
88	Upon completing larval development, the larva will back out of the hole and drop to the ground where they will pupate (transform into an adult fly). Cattle Grub (Heel Fly)	a	Cattle Grub
		b	Heel Fly
		c	House fly
		d	Both a & b
89	Stable flies can also act as mechanical vectors of pathogens, such as	a	Trypanosoma evansi
		b	Leishmania infantum
		c	Onchocerca gutturosa
		d	Both a & b
90	The following disease has been reported to be transmitted by sand flies:	a	Trypanosoma evansi
		b	Leishmania infantum
		c	Onchocerca gutturosa
		d	Both a & b
91	Ticks belong to which major class?	a	Myriapoda
		b	Crustacea
		c	Arachnida
		d	Insecta
92	Members of Order Diplopoda are also known as:	a	Mites
		b	Centipedes
		c	Millipedes
		d	None of these
93	Following are orders of class Insecta except:	a	Hemiptera
		b	Diptera
		c	Odonata
		d	Amphipoda
94	Following are orders of class Crustacea except:	a	Opiliones
		b	Mysidacea
		c	Amphipoda
		d	Decapoda
95	Shrimps belong to the class:	a	Insecta
		b	Crustacea
		c	Arachnida
		d	Myriapoda

96	Mosquitoes belong to the order:	a	Hemiptera
		b	Orthoptera
		c	Diptera
		d	Trichoptera
97	Order Acarina contains:	a	Ticks
		b	Mites
		c	Both
		d	None of these
98	Lice are categorized in subclass as:	a	Apterygota
		b	Exopterygota
		c	Endopterygota
		d	None of these
99	Centipedes are:	a	Insects
		b	Arachnids
		c	Crustaceans
		d	Myriapods
100	Members of order Hemiptera are also called as:	a	Ticks
		b	Mites
		c	Bugs
		d	Spiders
101	Orthoptera is an order of insects with	a	Complete metamorphosis
		b	Incomplete metamorphosis
		c	No metamorphosis
		d	Both a and b
102	Which one of the following includes in orthoptera	a	Fly
		b	Tsetse fly
		c	Grasshoppers
		d	none of these
103	Antennae have multiple joints and filiform type and are of variable length in	a	Orthoptera
		b	Lepidoptera
		c	Dipteral
		d	None of these
104	There are 2 suborders and 235 subfamilies in this order	a	Lepidoptera
		b	Diptera
		c	Orthoptera
		d	None of these
105	Ortho meaning straight and ptera meaning winged: statement is	a	False
		b	True
106	Orthoptera have mouthparts	a	Piercing type
		b	Sucking type
		c	Chewing type
		d	Both a and b
107	Which one of following is not a head and mouth part of orthoptera	a	Labrum
		b	Palpus
		c	Mandible
		d	Salivary Ducts
108	In orthoptera sensory structure in insects for tasting, smelling, and touching are found on palps of	a	Maxillae
		b	Labium
		c	Mandible
		d	Both a and b
109	Which one of following not includes in orthoptera	a	Grasshoppers
		b	Beetles
		c	Bugs
		d	cockroaches
110	In orthoptera upper lip is called	a	Labium
		b	Labrum
		c	Both a and b
		d	None of these

111	In sub-order Brachycera antennae are	a	Shorter than thorax
		b	Longer than thorax
		c	Equal to thorax
		d	Absent
112	All are classified into Brachycera except.....	a	Horse fly
		b	Deer fly
		c	Sand fly
		d	Soldier fly
113	which of the following following included in Brachycera	a	Ceratopodoniae
		b	Tabanidae
		c	Psychodidae
		d	Hippoboscidae
114	Abdomen of horse fly havesegments	a	6
		b	7
		c	8
		d	9
115	Which of the genus is not included in family Tabanidae	a	Genus haematopota
		b	Genus chrysops
		c	Genus pangonia
		d	Genus gastrophilus
116	In horse fly maxillary palps	a	Stiffly forward
		b	Stiffly backward
		c	Having one joint only
		d	Absent
117	Larvae of Tabanidae having retractile head and the mandibles bite.....	a	Horizontally
		b	Vertically
		c	Forward
		d	Backward
118	Proboscis are long, soft, hangs down in case of.....	a	Genus haematopota
		b	Genus chrysops
		c	Genus pangonia
		d	Genus gastrophilus
119	Which one of genus has metallic color eyes.....	a	Haematopota
		b	Pangonia
		c	Tabanus
		d	None of these
120	Which one of the following genera have same proboscis anatomy.....	a	Panagonia and Chrysops
		b	Heamatopota and Panagonia
		c	Tabnus and Heamatopota
		d	Chrysops and Tabnus

PARA Key Section C: Entomology

No.	Answer	No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	E	25	C	49	D	73	D	97	C
2	B	26	A	50	D	74	D	98	B
3	D	27	A	51	C	75	D	99	D
4	C	28	D	52	C	76	C	100	C
5	E	29	D	53	C	77	D	101	B
6	C	30	A	54	C	78	A	102	C
7	D	31	C	55	A	79	D	103	A
8	A	32	C	56	C	80	D	104	C
9	A	33	D	57	D	81	A	105	B
10	D	34	A	58	D	82	C	106	C
11	A	35	B	59	B	83	A	107	D
12	A	36	C	60	D	84	A	108	D
13	D	37	C	61	A	85	B	109	C
14	C	38	B	62	D	86	D	110	B
15	A	39	D	63	B	87	C	111	A
16	A	40	C	64	C	88	D	112	C
17	C	41	C	65	A	89	A	113	B
18	C	42	D	66	B	90	B	114	B
19	C	43	D	67	C	91	C	115	D
20	B	44	D	68	C	92	C	116	A
21	A	45	A	69	A	93	D	117	B
22	B	46	D	70	C	94	A	118	B
23	A	47	B	71	A	95	B	119	D
24	A	48	C	72	D	96	c	120	C

Pathology

MCQs Section A: Clinical Pathology

No.	Question	Choice	Answer
1	Animals suffering from anemia have	a	Decreased No. of RBCs, PCV and Hb. Conc. then healthy animals
		b	Only high No. of reticulocytes count
		c	Only decreased No. of RBCs then healthy animals.
		d	Only high No. of Polychromatophilic count
2	High no. basophilic stippling bodies are seen in	a	Lead poisoning in animals
		b	Copper poisoning in animals
		c	Mercury poisoning in animals.
		d	Mylobdenium poisoning in animals
3	Red colour urine is observed in	a	Hematuria
		b	Phenothiazine toxicity
		c	Both a & b
		d	Non
4	Morphology of anemia in chronic infections	a	Normocytic normochromic anemia
		b	Microcytic normochromic anemia
		c	Macrocytic normochromic anemia
		d	Macrocytic hyperchromic anemia
5	Protein deficiency leads to	a	Hypochromic anemia
		b	Normochromic anemia
		c	Microcytic anemia
		d	Hyperchromic anemia
6	Reduced activity of bone marrow leads to	a	Dec. in RBCs, TLC and thrombocytes
		b	Only dec. in TLC
		c	Only dec. in plasma proteins
		d	Increased no. of RBCs
7	Increased bilirubin conc. in blood is seen in	a	Hepatocellular damage
		b	Bile duct obstruction.
		c	Bone marrow depression
		d	Excessive hemolysis
8	Fatty casts are seen in urine of animals suffering from	a	Diabetes mellitus
		b	Milk fever
		c	Hepatitis
		d	Septecemi
9	Increased erythrocyte sedimentation rate is indicative of	a	Malignancy
		b	Nephritis
		c	Tuberculosis
		d	All of above
10	Mechanisms of neutropenia include:	a	Increased demand or consumption in tissues
		b	Decreased marrow production
		c	Increased movement from the circulating neutrophil pool to the marginal neutrophil pool
		d	All of the above
11	The precursors of macrophages are:	a	Eosinophils.
		b	Basophils.
		c	Monocytes
		d	Anisocytes

12	In case of endotoxic, septic or anaphylactic shock, retention of neutrophils in normal Reservoirs takes place usually in capillaries of -----	a	Lungs
		b	Spleen
		c	Liver
		d	All of the above
13	Skin scrapings are kept----- for digestion of debris	a	Formaline
		b	Ethanol
		c	Potassium hydroxide
		d	Potassium chloride
14	Anisocytosis is	a	Variation in size of erythrocytes
		b	Seen in anemia
		c	Bone marrow depression anemia
		d	Variation in shape of erythrocytes
15	Slides stained with immunoperoxidase techniques are visualized in microscope	a	Ordinary
		b	Flourescent
		c	Dark Field
		d	Phase contrast
16	Galactose tolerance test is	a	Inferior to BSP test in detection of liver deamage.
		b	Is a lipid metaboloism test
		c	Used for detection of liver damage
		d	Used for detection of pancreas damage
17	Type of anemia in CIN	a	Normocytic normochromic
		b	Normocytic hypochromic
		c	Microcytic normochromic
		d	Macrocytic Normochromic
18	M/E ratio is increased in	a	Infection, leukemia and hypoplasia of erytheroroid cells.
		b	Polycythemia.
		c	Hyperplasia of erytheroroid cells.
		d	All above
19	M/E ratio decrease in	a	Hyperplasia of erytheroid cells
		b	Hypoplasia of erytheroid cells
		c	Hyperplasia of myeloid cells
		d	Hypolpasia of myeloid cells
20	In morphine and chloral hydrate treatment the urine will be positive for	a	Glucose
		b	Blood
		c	Bilirubin
		d	Ketone bodies
21	Hyaline casts will be seen in animals suffering from	a	Fever
		b	Glomerlonephritis
		c	CIN
		d	Shock
22	Waxy casts are	a	Yellow/ gray in colour & highly refractile
		b	Orange in colour & highly refractile.
		c	Pink in colour & highly refractile
		d	Yellow in colour
23	Indirect Van Den Berg test is done to detect	a	Unconjugated bilirubin in serum
		b	Conjugated bilirubin in erum.
		c	Protein in serum
		d	Biliverdin im serum
24	Fibrinogen is increased in	a	Inflammation and chronic nephritis.
		b	In hepatitis.
		c	In CIN
		d	In diabetes mellitus

25	SGPT is increased	a	Only in liver damage
		b	In kidney damage
		c	In liver and kidney damage
		d	In cardiac muscle damage
26	Lactic dehydrogenase is increased in	a	Liver, kidney and heart damage
		b	Skeletal muscle damage.
		c	Liver damage
		d	Heart damage
27	Which of the following is incorrect?	a	Erythropoietin stimulates RBCs production
		b	Erythropoietin stimulates TLC production
		c	Erythropoietin produced from hepatocytes
		d	Erythropoietin is produced by nephrons
28	Which of the following can affect the neutrophil count in peripheral blood?	a	Changes in the rates of marrow production and release
		b	Exchange between marginal and circulating neutrophil pool
		c	Tissue demand
		d	Corticosteroids
29	Causes of neutrophilia include all of the following except:	a	Epinephrine release
		b	Glucocorticoid release
		c	Inflammation
		d	Hemorrhage
30	In chronic renal failure.	a	Serum phosphate level is decreased
		b	Serum creatinine is more than 2mg %.
		c	Pulmonary edema is secondary to fluid overload.
		d	Serum phosphate level is increased
31	Acanthocytes are	a	Erythrocytes with spine like projections
		b	Seen in autoimmune hemolytic anemia
		c	Seen in defective erythropoiesis
		d	Seen over dose of EDTA
32	Lipemic plasma is observed in	a	Diabetes mellitus and acute pancreatitis
		b	Bone marrow depression and dehydration
		c	Liver diseases
		d	Fever
33	Decreased leukocyte count is observed in:	a	Only in viral infection
		b	In viral and early bacterial infection.
		c	Bone marrow depression
		d	Dehydration
34	Shift to the left means.	a	Increase in the hyper mature neutrophils in circulation.
		b	Increase in the immature neutrophils in circulation
		c	Decrease in hyper segmented neutrophils in the circulation
		d	Increase in myelocytes in circulation

35	Shift to right means.	a	Increased hyper segmented neutrophils in circulation.
		b	Increase in immature neutrophils in circulation.
		c	Decrease in hyper segmented neutrophils in circulation.
		d	Increase in meta myelocytes in circulation
36	Chronic myeloproliferative disorders include the following:	a	Chronic myeloid leukemia.
		b	Polycythemia Vera.
		c	Primary myelodysplastic syndrome
		d	Absolute polycythemia
37	Number of pus cell increase in urine due to	a	Pyelonephritis
		b	Pasteurellosis
		c	Tuberculosis
		d	Brucellosis
38	Myoglobin in urine is detected in	a	Strangles
		b	Glanders
		c	Azoturia
		d	Equine infectious anemia

Keys MCQs Section A: Clinical Pathology

No.	Answer	No.	Answer
1	A	21	A
2	A	22	A
3	C	23	A
4	A	24	A
5	A	25	A
6	A	26	A
7	A,D	27	B
8	A	28	A,B,C,D
9	D	29	B
10	D	30	B
11	C	31	A
12	D	32	A
13	C	33	B
14	A	34	B
15	A	35	A
16	A	36	C
17	A	37	A
18	A	38	C
19	A,C		
20	A		

MCQs Section B: Systemic Pathology

No.	Question	Choice	Answer
1	Polymorphonuclear neutrophil granulocytes:	a	are important cells in bacterial diseases.
		b	play a role in inflammation by releasing histamine
		c	Are important cells in parasitic diseases.
		d	None of above
2	An old bitch has a malignant lymphoma involving lymph nodes in the para-aortic region. Bitch is treated with a chemotherapeutic agent which results in the loss of individual neoplastic cells through fragmentation of individual cell nuclei and cytoplasm. Over several weeks, the size of the lymphoma decreases, as seen on an abdominal CT scan. By which of the following mechanisms has her neoplasm primarily responded to therapy:	a	Coagulative necrosis
		b	Mitochondrial poisoning
		c	Apoptosis
		d	all of above
3	Which of the following would typically result in liquifactive necrosis?	a	cerebral infarction from middle cerebral artery thrombosis
		b	liberation of pancreatic enzymes into peritoneum due to acute pancreatitis
		c	myocardial infarction from coronary thrombosis
		d	all of above
4	Frozen section evaluation of a lymph node biopsy from the neck of an old dog shows granulomatous inflammation with large areas of necrosis. Which of the following would be most important to do?	a	cell surface markers for lymphocyte phenotyping
		b	chromosomal analysis by karyotyping
		c	cultures for acid fast bacilli and fungi
		d	None of above
5	A buffalo with immunodeficiency state presents with weight loss and cough. Chest x-ray shows pulmonary infiltrates. A tuberculin skin test shows no reaction. Which of the following interpretations is most correct?	a	she does not now have and never has had tuberculosis
		b	she does not now have tuberculosis, but may have in the past
		c	she may or may not have tuberculosis
		d	none of above
6	Amyloid consists of	a	A extracellular deposits of altered protein in a Beta-pleated sheet pattern
		b	extracellular accumulations of damaged collagen fibrils
		c	denatured proteins
		d	all of above
7	Each of the following may contribute to formation of edema EXCEPT:	a	decreased plasma oncotic pressure
		b	increased intravascular hydrostatic pressure
		c	increased serum albumin
		d	all of above
8	Unconjugated bilirubin is derived principally from:	a	glucuronyl transferase activity
		b	toxic liver injury
		c	intravascular haemolysis
		d	bile duct obstruction
9	Markedly increased concentration responsible for kernicterus in hemolytic disease of the newborn.	a	Unconjugated bilirubin
		b	Conjugated bilirubin
		c	Hemosiderin
		d	none of above

10	The main feature of a healing wound is:	a	Lymphocyte accumulation
		b	Fibrin deposition
		c	Granulation tissue formation
		d	tissue destruction
11	In addition to pulmonary stenosis and ventricular septal defect, Tetralogy of Fallot includes:	a	Dextroposition of aorta and right ventricular hypertrophy
		b	Dextroposition of aorta and left ventricular hypertrophy
		c	Right ventricular hypertrophy and left atrial dilatation
		d	all of above
12	Which of the following is most likely to result in cyanosis?	a	Anemia
		b	Polycythemia
		c	Left to right cardiac shunt
		d	bilirubinaemia
13	Clinical manifestations of right heart failure include each of the following EXCEPT:	a	dependent edema
		b	Ascites
		c	Pulmonary edema
		d	nutmeg liver
14	Left-sided heart failure is characterized by:	a	Hepatomegaly
		b	Dyspnea (shortness of breath)
		c	Varices
		d	nutmeg liver
15	The edema of nephrotic syndrome is best classified as	a	Hypovolemic
		b	Obstructive
		c	Oncotic
		d	none of above
16	Which one of the following is may be a malignant neoplasm?	a	Seminoma
		b	Trichoepithelioma
		c	Chondroma
		d	Hepatoma
17	Proto-oncogenes are:	a	Cellular sequences that are not oncogenes themselves, but are strong promoter sequences that flank the true oncogene
		b	Cellular copies of oncogenes that were first found in retroviruses
		c	DNA viral sequences that are known to infect human cells and have been implicated in neoplasia
		d	none of above
18	Which of the following findings is most useful for the staging of a tumor?	a	Presence of necrosis
		b	Presence of abnormal mitoses
		c	Presence of metastases
		d	presence of apoptosis
19	Benign tumors arising from the salivary gland epithelium are called:	a	Transitional cell epitheliomas
		b	Adenomas
		c	Fibromas
		d	adenocarcinoma
20	Which of the following finding is most important for the grading of tumors?	a	Presence of tumor cells in the vascular spaces
		b	Level of invasion
		c	Microscopic pleomorphism of nuclei and the number of mitoses
		d	degree of metastasis

21	Which of the following activates Hageman factor in blood clotting?	a	Kinins
		b	Negatively charged surfaces
		c	Complement C5a
		d	positively charged collagen
22	Epithelioid cells within granulomas are derived from which of the following?	a	Plasma cells
		b	Macrophages
		c	Lymphocytes
		d	Eosinophils
23	Biologically active metabolites of arachidonic acid include all of the following EXCEPT:	a	Leukotrienes (SRS)
		b	Thyromboxane A2
		c	Complement
		d	Antibodies
24	Bacterial opsonization is mediated by which one of the following?	a	Hageman factor
		b	Prostaglandin
		c	Antibodies
		d	Tumor Necrosis Factor
25	Predominant cell types in typical chronic inflammatory reactions include all of the following EXCEPT:	a	Polymorphonuclear leukocytes
		b	Macrophages
		c	T helper lymphocytes
		d	Epithelioid cells
26	Neutrophilia is most frequently seen in association with which of the following?	a	Allergic dermatitis
		b	Fungal esophagitis
		c	Bacterial pneumonia
		d	Viral encephalitis
27	Chemotactic factors are produced by:	a	Lymphocytes
		b	Monocytes
		c	Endothelial cells
		d	All of the above
28	Which of the following is diagnostic of pyknosis?	a	Enlargement of the nucleoli
		b	Condensed nuclear chromatin
		c	Dilated rough endoplasmic reticulum
		d	Disappearance of nucleus
29	Bats may act as a reservoir for human	a	Rabies
		b	Tuberculosis
		c	Malaria
		d	none of above
30	Rotavirus infections can cause which clinical entity?	a	stool leukocytes
		b	Exanthema
		c	watery, non-bloody diarrhea
		d	none of above
31	A granuloma is	a	a small nodule of granulation tissue
		b	a tumor composed of granulocytes
		c	composed primarily of epithelioid histiocytes and lymphocytes
		d	none of above
32	Severe babesiosis in dogs can result in which of the following:	a	an emia
		b	hypoalbuminemia
		c	all of the above
		d	none of above
33	Tissue damage in babesiosis occurs due to:	a	anemic hypoxia
		b	overwhelming inflammatory response
		c	two of the above
		d	none of the above
34	Bovine herpes virus 1 causes disease in bovines	a	Bovine viral diarrhoea
		b	Infectious bovine rhinotracheitis
		c	Rinderpest,
		d	Malignant catarrhal fever

35	In traumatic pericarditis, one of the following type of inflammation occur	a	Fibrinous
		b	purulent,
		c	fibrinopurulent,
		d	Catarrhal
36	Bilateral corneal opacity is seen in	a	FMD,
		b	Rinderpest,
		c	Bovine viral diarrhoea
		d	Malignant catarrhal fever
37	Haemorrhagic septicaemia in buffalo in Asia is caused by	a	B2 serotype
		b	E2 serotype
		c	A2 serotype
		d	all of above
38	Nibbling sign of disease in goats is characteristic for disease	a	Rabies
		b	enterotoxaemia
		c	Scrapie
		d	none of above
39	Subcutaneous edema is usually present in the submandibular region and neck, sometimes extending to the brisket in buffaloes at the time of postmortem in	a	Tuberculosis
		b	Haemorrhagic Septicaemia
		c	Infectious bovine Rhinotracheitis
		d	Babesiosis
40	Fluid sounds on auscultation of lungs, with sweetish fetid breath and reddish or green nasal discharge is characteristic of type of pneumonia	a	Brochopneumonia
		b	Aspiration pneumonia
		c	Chlamydial pneumonia
		d	None of the above
41	Predisposing factors for the development of keloid scars include:	a	secondary wound closure
		b	wound infection
		c	steroid therapy
		d	None of the above
42	The following statements are true of wound infections:	a	Staphylococcus aureus is the most common organism to infect the surgical wound
		b	MRSA wound infection is usually the result of wound contamination by hospital staff
		c	anaerobic organisms exert their lethal effects by producing endo- and exotoxins
		d	all of the above
43	Wound healing by secondary intention takes place:	a	when the wound does not break apart
		b	when the wound edges are brought together
		c	much more slowly than healing by first intention
		d	In surgically incised wounds
44	Clostridium tetani:	a	causes gas gangrene
		b	produces an exotoxin
		c	is non-motile
		d	causes pulpy kidney disease
45	Keloid scars:	a	are distinguished from hypertrophic scars by their extent.
		b	are caused by the excess deposition of fibrin in the wound
		c	may be prevented by pressure dressing
		d	does not re-occur after surgical removal

46	The following are true about atherosclerosis:	a	it occurs in the retinal artery
		b	foamy macrophages are seen in type I plaque
		c	proliferation of smooth muscle cells in the intima is typical
		d	no deposition of lipid occur in wall of artery
47	The following are true about cerebral infarction:	a	the area of infarct tends to be wedge-shaped
		b	it can result from thrombosis of the external carotid artery disease
		c	coagulative necrosis occurs in the brain tissue
		d	none of the above
48	The following conditions can give rise to metastatic calcification:	a	Coagulative necrosis
		b	Sarcoidosis
		c	Pulmonary Tuberculosis
		d	Liquifactive necrosis
49	In the presence of inflammation, the following are raised:	a	Platelets
		b	Ferritin
		c	Caeruloplasmin
		d	all of Above
50	One of these do not cause increase in permeability of vascular tissue:	a	Complement 5a
		b	Interleukin-1
		c	Adrenaline
		d	All of the above
51	The followings are true about basal cell carcinoma:	a	Affecting the Upper Lid More Commonly Than the Lower Lids
		b	Palisading of the Peripheral Cells
		c	Does Not Invade the Bone
		d	All of the above
52	One of these is wrong:	a	Gangrene Refers to Tissue Necrosis with Or Without Infection
		b	Acute Inflammation Usually Occurs Around Necrotic Tissues
		c	Apoptosis Does Not Usually Cause Inflammation
		d	Autolytic Changes in the Nucleus Are Pathognomonic of Necrosis
53	The following are true with regard to cell growth:	a	the Main Stimulus for Hypertrophy is Hormonal
		b	in Metaplasia, There is A Change of A Type of Differentiated Cell to A Type of Undifferentiated Cell
		c	Achondroplasia Does Not Affect Membranous Bone
		d	Metaplasia and dysplasia are similar in most extent
54	The following are true about squamous cell carcinoma:	a	it is A Commoner Malignant Skin Tumour Than Basal Cell Carcinoma
		b	it Only Occurs in the Skin
		c	Metastasis is Usually to the Regional Lymph Nodes
		d	Most commonly occur in bones
55	Features of a sebaceous cyst include:	a	it Arises in the Dermis
		b	it is Firmly Adherent to the Skin
		c	it Contains Mucopolysaccharides.
		d	All of the above

56	One of the following is true about malignant melanoma:	a	A-melanotic Type is More Aggressive Than Pigmented Type
		b	Staging is According to the Size of the Tumour
		c	it is Found Exclusively in the Skin
		d	All of the above
57	After phagocytosis by neutrophils, micro-organisms are killed by:	a	Lysozyme
		b	Lymphokines
		c	Complement System
		d	Antibodies
58	One of these about Anaphylaxis is false:	a	Occurs 24 Hours After the Initial Stimulus
		b	Causes Eosinophilia
		c	Causes Degranulation of Basophils and Mast Cells
		d	All of the above
59	Special stain for Amyloid is:	a	Congo Red
		b	Anilin blue
		c	Prussian Blue
		d	Haemosiderin
60	The following are true about chemicals involved in allergic reaction:	a	Thromboxane -Leukocyte Activation
		b	Prostaglandin-2 - Vasodilatation
		c	Platelet-activating Factor - Leukocyte Activation
		d	All of the above
61	One of these if false about Granulation tissue:	a	is A Feature of Wound Healing
		b	Contains Fibroblasts
		c	Contains Thin-walled Capillaries
		d	Often Contains Granuloma
62	Constituents of emboli may include:	a	Air
		b	Amniotic Fluid
		c	Tumour
		d	All of above
63	The following substances increase the capillary permeability in acute inflammation except:	a	Bradykinin
		b	Histamine
		c	Angiotensin
		d	Complement proteins
64	Opsonization:	a	is Mediated by Complement Components.
		b	Enhances Phagocytosis
		c	Involves Mainly the Fc Portion of the Immunoglobulins
		d	All of Above
65	The following promotes wound healing except:	a	Macrophages
		b	Myofibroblast
		c	Platelets
		d	apocrine Cells
66	The following are used in grading a tumour except:	a	Mitotic Index
		b	Necrosis
		c	Calcification
		d	Atrophy
67	TNF α (tumour necrosis factor alpha):	a	is Produced by T Lymphocytes
		b	is Produced by Macrophages
		c	Causes Hypercoagulability
		d	Does not cause necrosis of tumor cells

68	Intracellular messengers include all except:	a	Cyclic Guanosine Monophosphate (Cgmp)
		b	Inositol Triphosphate (Ip3)
		c	Cyclic Adenosine Monophosphate (Camp)
		d	GABA
69	The following are true about inositol triphosphate (IP3):	a	it is Increased by Activation of A1-adrenoreceptors
		b	it is Produced by the Action of Phospholipase C, A Membrane Bound Enzyme
		c	All of Above
		d	None of above
70	The following statements about tuberculosis are true:	a	Caseous Necrosis is Only Seen in Primary Lesions
		b	Langhans Cell Presence is A Must for Histological Diagnosis.
		c	Viable Bacteria May Be Found in Calcified Lesions.
		d	Occur Only in Lung Tissue
71	Which of the following is LEAST likely to regenerate?	a	cardiac muscle
		b	renal tubular cells
		c	hepatocytes
		d	fibroblasts
72	The newly formed, highly vascularized, connective tissue with a component of acute inflammatory exudation is known as	a	purulent exudate
		b	granulation tissue
		c	Scar
		d	Granuloma
73	Healing by first intention is characterized by each of the following EXCEPT	a	well-apposed skin edges
		b	epithelial proliferation
		c	abundant granulation tissue
		d	a few inflammatory cells
74	A biopsy is performed on a dog with a mass lesion that proves to be a neoplasm. Of the following histopathologic findings, the one that best indicates that a neoplasm is malignant is:	a	Pleomorphism
		b	Invasion
		c	Atypia
		d	Increased nuclear/cytoplasmic ratio
75	Each of the following is an example of apoptosis except	a	elimination of epithelial cells from the GIT
		b	destruction of hepatocytes in chronic hepatitis
		c	deletion of autoreactive T cells from thymus
		d	stroke caused by thrombosis of middle cerebral artery
76	Which of the following sequelae of ischemia would be considered an irreversible cellular injury?	a	switch to anaerobic glycolysis
		b	swelling of endoplasmic reticulum
		c	rupture of lysosomes
		d	cellular acidosis
77	Which virus is involved in development of feline sarcoids:	a	herpes virus
		b	pox virus
		c	Papilloma virus
		d	Leukaemia virus
78	Canine colorectal tumors show dysregulation in which of the following:	a	B Catenin
		b	E Cadherin
		c	p53
		d	All Ov Above

79	Thick hyalinized collagen fibers characterize which of the following canine tumors:	a	Fibroma
		b	fiboadenexal dysplasia
		c	Keloidal fibroma
		d	All Of Above
80	The origin of histiocytic sarcomas are most likely:	a	Reticular-endothelial cells
		b	B lymphocytes
		c	Myeloid dendritic cells
		d	Neutrophils

Keys MCQs Section B: Systemic Pathology

No.	Answer	No.	Answer	No.	Answer	No.	Answer
1	A	26	C	51	B	76	C
2	C	27	D	52	A	77	C
3	A	28	B	53	C	78	D
4	C	29	A	54	C	79	C
5	C	30	C	55	A	80	C
6	A	31	C	56	A		
7	C	32	C	57	A		
8	C	33	C	58	A		
9	A	34	B	59	A		
10	C	35	C	60	B		
11	A	36	D	61	D		
12	C	37	A	62	D		
13	C	38	C	63	C		
14	C	39	B	64	D		
15	C	40	B	65	D		
16	A	41	B	66	C		
17	B	42	D	67	B		
18	C	43	C	68	D		
19	B	44	A	69	C		
20	C	45	A	70	C		
21	B	46	C	71	A		
22	B	47	A	72	A		
23	C	48	B	73	C		
24	C	49	D	74	B		
25	A	50	C	75	D		

MCQs Section C: Poultry Pathology

No.	Question	Choice	Answer
1	Infectious Bursal Disease is caused by the virus of	a	Birnaviridae
		b	Orthomyxoviridae
		c	Paramyxoviridae
		d	Circoviriade
2	Gumboro disease is a clinical disease of	a	Chicken
		b	Quails
		c	Turkeys
		d	Pheasants
3	Immunosuppression is a characteristic feature of	a	Fowl typhoid
		b	CIA
		c	IBD
		d	Both B&C
4	Hydropericardium syndrome in broiler chicks usually appears at	a	1 st week of age
		b	4 th month of age
		c	3-4 th week of age
5	Hydropericardium syndrome in broiler chicks results in	a	Enteritis with swollen liver
		b	twisted legs with fluid in hydropericardium
		c	Swollen liver with fluid in pericardial sac
		d	Nephritis and Tracheitis
6	Incubation period of infectious bronchitis is	a	less than 24 hours
		b	one week
		c	3 days
		d	3 months
7	In young Chicks, Infectious bronchitis appears as an	a	Acute disease
		b	Chronic Disease
		c	Subacute disease
		d	None of above
8	Hosts for IB virus include	a	Turkeys
		b	Pigeons
		c	Chicken
		d	All of the above
9	Laryngotracheitis results in intracytoplasmic inclusion bodies in	a	tracheal epithelial cells
		b	endothelial cells of lungs
		c	Tubular epithelial cells of kidney
		d	Intestinal cells
10	Newcastle disease virus infects the birds of	a	all ages
		b	young chicks
		c	Adult birds
		d	Both B&C
11	NDV strains employed as live vaccine to protect poultry include	a	Mesogenic strains
		b	Velogenic strains
		c	Lentogenic strains
		d	All above
12	Avian Influenza virus is a RNA virus having	a	6 segments
		b	4 segments
		c	8 segments
		d	Both A and B
13	Spirochetosis is caused by	a	<i>Argas persicus</i>
		b	<i>Borrelia anserine</i>
		c	<i>Candida albicans</i>
		d	<i>Aspergillus fumigates</i>

14	Most common reservoir of Avian Influenza virus is	a	Insects
		b	Mammals
		c	Water fowl
		d	Swine
15	<i>Mycoplasma gallisepticum</i> infected breeder flock	a	Should not be used for production of chicks
		b	should be treated before hatching their eggs
		c	May be used for production of chicks
		d	Above all
16	Renal Coccidiosis is very common in	a	Chicken
		b	Turkeys
		c	Geese
		d	Pigeons
17	<i>Mycoplasma synoviae</i> is transmitted	a	Vertically
		b	Horizontally
		c	does not spread
		d	Both A & B
18	Round worms in the chicken gut can be successfully removed by administration of	a	Oxytetracycline
		b	Lincomycin
		c	Levamisole
		d	Furazolidone
19	Copper sulfate toxicity in chicken results in	a	liver damage
		b	muscular degeneration
		c	nervous derangement
		d	None of the above
20	Excess dietary Calcium levels result in	a	Urate deposits in kidneys
		b	liver damage
		c	cardiac dilatation
		d	None of the above
21	Characteristic lesion in <i>E.Coli</i> infection is	a	Pericarditis & Perihapatitis
		b	Hemorrhagic enteritis
		c	Swollen and edematous bursa
22	In Coccidiosis hemorrhages occur in	a	Intestine
		b	Proventriculus
		c	Heart
		d	Muscles
23	During 1st week of brooding period of broilers temperature of brooding room should be	a	100° F
		b	120° F
		c	90° F
		d	80° F
24	Heat stress can be partially alleviated by administering	a	Calcium
		b	high level of Phosphorus
		c	Vitamin C
		d	above all
25	In Ovo vaccination is performed in hatchery at the age of	a	14 days
		b	16 days
		c	18 days
		d	20 days
26	Birds suffering from Lymphoid leukosis shed virus in their eggs	a	Yes
		b	No
		c	May or may not shed
		d	None of the above
27	Among all four aflatoxins (B1, B2, G1 and G2) the most potent toxin is	a	Aflatoxin G1
		b	Aflatoxin G2
		c	Aflatoxin B1
		d	Aflatoxin B2

28	Thin shelled deformed eggs with thin albumin are indicative of	a	EDS infection
		b	Infectious bronchitis
		c	Pullorum disease
		d	ILT
29	Infectious agent known to induce hemorrhagic tracheitis in bird is	a	Infectious bronchitis
		b	Fowl cholera
		c	infectious laryngotracheitis
		d	Mycoplasma gallisepticum
30	Lesions in birds suffering from Fowl Cholera include	a	Facial cyanosis and swelling of wattles
		b	Feather ruffled and increased activity
		c	Soft shelled eggs and respiratory problem
		d	Swelling of wattles and subnormal body temperature
31	Infectious Coryza is a disease of	a	Middle portion of intestinal tract
		b	Upper respiratory tract
		c	Lower Respiratory tract
		d	Air sacs
32	Mycoplasma can be eliminated from the flock following treatment with	a	Sulfa drugs
		b	tylosine tartrate
		c	Lincomycin
		d	None of the above
33	Necrotic enteritis is caused by	a	<i>Corynaebacterium renale</i>
		b	<i>Clostridium perfringens type D and B</i>
		c	<i>Clostridium perfringens type A and C</i>
		d	None of the above
34	Airsacculitis in young chicks is suggestive of	a	Mycoplasma gallisepticum infection
		b	Salmonella gallinarum infection
		c	Fowl cholera
		d	Chicken Infectious Anemia
35	What are finding in birds suffering from sulfonamide toxicity	a	Swollen kidneys
		b	ruffled feathers
		c	pneumonia
		d	Thymic Atrophy
36	Coccidiosis is a	a	protozoal disease
		b	bacterial disease
		c	viral disease
		d	Both A&B
37	Coccidiosis is a	a	vertically transmitted disease
		b	horizontally transmitted disease
		c	None of any one
		d	Both A&B
38	<i>Staphylococcus aureus</i> is responsible for	a	early chick mortality
		b	Necrotic enteritis
		c	respiratory distress
		d	Enteric disease
39	Causative agent of Laryngotracheitis is a	a	Bacteria
		b	Virus
		c	Fungus
		d	Protozoa
40	Laryngotracheitis is a disease of	a	Chicks
		b	Growing and adult chicken
		c	Both of the above
		d	Laying Birds

41	Which of the following diseases spread rapidly in a flock?	a	Laryngotracheitis
		b	Infectious bronchitis
		c	<i>Mycoplasma gallisepticum</i> infection
		d	CIA
42	In laying hens IB virus infection results in	a	Thick egg albumin
		b	Thin egg albumin
		c	Egg albumin and yolk mixed
		d	None of the above
43	Breeding hens infected with field IBD virus transfer maternal antibodies to their chicks which may protect them from IBD for	a	2-4 weeks
		b	2-4 months
		c	for life
		d	Both A&B
44	Newcastle disease virus infects the birds of	a	all ages
		b	young chicks
		c	Adult birds
		d	Above all
45	Velogenic strains of NDV can cause	a	up to 100 percent mortality in susceptible birds
		b	up to 20 percent mortality in susceptible birds
		c	No mortality in susceptible birds
		d	Both A&B
46	Nervous signs are a prominent feature of ND virus infection caused by	a	mesogenic strains
		b	lentogenic strains
		c	velogenic strain
		d	Both A&B
47	Gross lesions in velogenic ND infection in chicken include	a	ulcers on the skin
		b	ulcers in the intestine
		c	hemorrhages on the mucosa of proventriculus
		d	Above all
48	. NDV strains employed as live vaccine to protect poultry include	a	Mesogenic strains
		b	Velogenic strains
		c	Lentogenic strains
		d	Above all
49	.ND virus agglutinates	a	Rabbit RBCs
		b	Sheep RBCs
		c	Horse RBCs
		d	None of the above
50	ND virus spreads by	a	Aerosol
		b	feed
		c	contaminated equipment
		d	Both A & B
51	Following diseases are vertically transmitted to newly hatched chicks	a	Newcastle Disease
		b	Infectious Bronchitis
		c	Gumboro Disease
		d	None of the above
52	Which of the Eimeria spp. is poor in cyst production	a	<i>E. tenella</i>
		b	<i>E. acervulina</i>
		c	<i>E. necatrix</i>
		d	<i>E. hagani</i>
53	Which of the following test can distinguish between Newcastle disease virus and Avian influenza virus	a	Hemagglutination test
		b	hemagglutination-inhibition test
		c	Both of the above mentioned
		d	None of above

54	What the usual look of bursa of Fabricius in birds affected with Mareks Disease	a	Normal
		b	Atrophied
		c	Swollen
		d	None of above
55	Which of the following salmonella species is host specific	a	<i>S. gallinarum</i>
		b	<i>S. typhimurium</i>
		c	<i>S. typhi</i>
		d	Both A&B
56	What is the appearance of <i>E. coli</i> colonies on MacConkey's agar	a	Pink
		b	Black
		c	Colorless
		d	Blue
57	Which one of the following Eimeria spp. is the most pathogenic	a	<i>E. acervulina</i>
		b	<i>E. hagani</i>
		c	<i>E. tenella</i>
		d	<i>E. praecox</i>
58	. Route of inoculation of embryonating eggs for Newcastle and Avian Influenza viruses is	a	Yolk Sac
		b	Chorioallantoic membrane
		c	Allantoic cavity
		d	None above
59	What are finding in birds suffering from sulfonamide toxicity	a	Swollen kidneys
		b	ruffled feathers
		c	pneumonia
		d	Both A&B
60	Thin shelled deformed eggs with thin albumin are indicative of	a	EDS infection
		b	Infectious bronchitis
		c	Pullorum disease
		d	All above
61	Airsacculitis in young chicks is suggestive of	a	<i>Mycoplasma gallisepticum</i> infection
		b	<i>Salmonella gallinarum</i> infection
		c	Fowl cholera
		d	All above
62	Infectious agent known to induce hemorrhagic tracheitis in bird is	a	Infectious bronchitis
		b	Fowl cholera
		c	infectious laryngotrachei
		d	Both B&C
63	. Causative agent of fowl typhoid is	a	<i>Salmonella pullorum</i>
		b	<i>salmonella gallinarum</i>
		c	<i>salmonella typhimurium</i>
		d	All above
64	Drug of choice for salmonella is	a	Chloromphenicol
		b	Oxytetracycline
		c	Tylosin
		d	Lincomycin
65	Coccidiosis is a disease of	a	Broilers
		b	Layers
		c	Both A&B
		d	None above
66	Cecal Coccidiosis is caused by	a	<i>Eimeria tenella</i>
		b	<i>Eimeria acervulina</i>
		c	<i>Eimeria praecox</i>
		d	All above
67	Coccidiosis is a	a	vertically transmitted disease
		b	horizontally transmitted disease
		c	None of any one
		d	All above

68	In Coccidiosis hemorrhages occur in	a	Intestine
		b	Proventriculus
		c	Heart
		d	All above
69	In recovery stage of Coccidiosis birds are more susceptible to	a	Clostridial diseases
		b	Fungal Diseases
		c	Viral diseases
		d	none of above
70	In chicken ----- species of <i>Eimeria</i> have been described	a	9
		b	6
		c	12
		d	10
71	Aflatoxin is produced by	a	<i>Aspergillus</i>
		b	<i>Alternaria</i>
		c	<i>Fusarium</i>
		d	<i>Mucor</i>
72	Which type of birds is more susceptible to aflatoxins?	a	Ducks
		b	Chicken
		c	Turkey
		d	Parrots
73	The most toxic Ochratoxin is	a	Ochratoxin A
		b	Ochratoxin B
		c	Ochratoxin C
		d	Ochratoxin D
74	DON toxin is produced by	a	<i>Fusarium</i>
		b	<i>Penicillium</i>
		c	<i>Aspergillus</i>
		d	All above
75	Ochratoxin is a	a	Nephrotoxic mycotoxin
		b	Hepatotoxic mycotoxin
		c	None of above
		d	All above
76	In Balkan nephropathies ----- toxin was involved	a	Ochratoxin
		b	Aflatoxin
		c	Zearalenone
		d	None above
77	Ochratoxin mostly contaminate	a	Wheat
		b	Maize
		c	Rice
		d	Above all
78	Aflatoxin mostly contaminate	a	Wheat
		b	Maize
		c	Rice
		d	None
79	Microscopic lesions of mycotoxicosis in chicken in liver	a	Biliary hyperplasia
		b	Biliary hypoplasia
		c	Biliary aplasia
		d	Above all
80	Therapeutic dose of gentamicin in poultry is	a	5-10 mg/kg
		b	10-20 mg/kg
		c	20-50 mg/kg
		d	None above
81	After I/M injection Gentamicin retained in kidneys for	a	10 days
		b	30 days
		c	3 months
		d	6 months

82	Vitamin A deficiency in poultry feeds may result in	a	Enhance epithelial repair
		b	visceral urate deposits
		c	Weak bones
		d	None above
83	Vitamin D deficiency may result in	a	Thin and soft shelled eggs
		b	Nervous signs
		c	Thick bone
		d	None above
84	Heat stress can be partially alleviated by administering	a	Calcium
		b	high level of Phosphorus
		c	Vitamin C
		d	Above all
85	Partially cooked muscles is a characteristic feature of	a	High protein diet
		b	Heat stress
		c	Calcium deficiency
		d	Above all
86	Dehydration in young chicks is evident by	a	broken wings and ruffled feathers
		b	dryness and grooves on the shanks
		c	Dry tongue
		d	Above all
87	Concurrent administration of Ionophore antibiotics and tiamulin may result in	a	Fatty liver in chicken
		b	Swollen kidneys
		c	Lameness
		d	None
88	Vitamin E supplementation of feed in chicken results in	a	improved spermatogenesis
		b	Decrease feed intake
		c	improved egg production
		d	None above
89	Excess ammonia in the poultry house results in	a	respiratory distress
		b	enteritis
		c	ruffled feathers
		d	Above all
90	Accumulation of smoke and foul gasses in the brooder house may result in	a	respiratory distress
		b	Ascites
		c	increased water and feed intake
		d	Above all
91	Which of the Eimeria species produces the largest schizonts?	a	<i>E. acervulina</i>
		b	<i>E. necatrix</i>
		c	<i>E. maxima</i>
		d	Above all
92	Lameness and blind ness is observed in flocks suffering from	a	Mareks disease
		b	Reticuloendotheliosis
		c	Myeloid Leukosis
		d	None above
93	Birds suffering from lymphoid leucosis can be kept for breeding purposes	a	No
		b	Yes
		c	Yes after treatment
		d	Above all
94	Birds suffering from Mareks disease can be kept for breeding purposes	a	No
		b	Yes
		c	No even after treatment
		d	Both A&B
95	<i>Mycoplasama gallisepticum</i> is the responsible for	a	respiratory disease
		b	enteritis
		c	nervous derangement
		d	None above

96	<i>Mycoplasma synoviae</i> is	a	a nonpathogenic organism
		b	causes lameness
		c	responsible for shell less eggs
		d	Above all
97	Chronic respiratory disease is caused by	a	concurrent infection of <i>E. coli</i> and MG
		b	Concurrent infection of Fowl cholera and <i>E. coli</i>
		c	caused by infectious bronchitis
		d	All above
98	Incubation period of CRD in chicken is	a	3 days
		b	3 weeks
		c	Long and protracted
		d	None above
99	In Mg infection prominent lesions are	a	Air sacculitis
		b	Peritonitis
		c	nervous disorder
		d	Above all
100	<i>Mycoplasma gallisepticum</i> infected breeder flock	a	Should not be used for production of chicks
		b	should be treated before hatching their eggs
		c	May be used for production of chicks
		d	None above
101	<i>Mycoplasma synoviae</i> is transmitted	a	Vertically
		b	Horizontally
		c	does not spread
		d	Above all
102	<i>Mycoplasma melagreadis</i> produces disease in	a	chicken
		b	turkeys
		c	all species of birds
		d	None of these species
103	<i>Mycoplasma galisepticum</i> antibodies in the serum are detected by	a	Agar gel diffusion test
		b	Hemagglutination test
		c	Plate serum agglutination test
		d	All three above
104	Serum plate agglutination test for MG gives false positive results if birds are	a	Fed canola meal
		b	infected with <i>E. coli</i>
		c	administered killed vaccines
		d	Both A & B
105	Infectious coryza is a disease of	a	Young Chicks
		b	growing and laying birds
		c	male chicken only
		d	None
106	Clinical signs of Infectious coryza include	a	swollen inflamed sinuses
		b	Conjunctivitis
		c	lameness
		d	nervous derangement
107	Infectious coryza is transmitted	a	horizontally
		b	Vertically
		c	does not spread
		d	All above
108	Infectious coryza	a	reoccurs after treatment
		b	solid immunity develops after infection
		c	causes high mortality
		d	All above

109	Infectious coryza can be prevented by	a	Continuous antibiotic treatment
		b	using live vaccines
		c	using killed vaccine
		d	None above
110	Incubation period for infectious coryza is	a	long duration (weeks)
		b	short duration (18-36 hours)
		c	Very short duration (3-6 hours)
		d	Above all
111	Causative agent of Fowl cholera is	a	<i>Pasturella multocida</i>
		b	<i>Salmonella typhi</i>
		c	<i>Pseudomonas auroginosa</i>
		d	All above
112	Fowl Cholera is a disease of	a	young chicks of 2 weeks of age
		b	Maturing and adult birds
		c	cull birds
		d	None above
113	In chronic fowl cholera characteristic findings are	a	Swelling of Wattles
		b	purulent pneumonia
		c	peritonitis
		d	None of the above mentioned
114	Fowl cholera is spread by	a	aerosol means
		b	vertical spread
		c	Carrier birds
		d	Above all
115	In acute fowl cholera mortality is	a	low (below 5%)
		b	high ((Above 30%))
		c	no mortality
		d	None above
116	Necrotic enteritis usually accompany or follows	a	coccidiosis
		b	Fowl cholera
		c	mycoplasma infection
		d	All above
117	Causative agent for necrotic enteritis is	a	<i>E. coli</i>
		b	<i>Streptococcus</i> spp.
		c	<i>Clostridium perfringens</i>
		d	All above
118	In necrotic enteritis duration of the clinical course is	a	very short (few hours)
		b	3-5 Days
		c	more than a week
		d	All above
119	Birds dying of necrotic enteritis are	a	emaciated
		b	Well fed
		c	males only
		d	None above
120	Ulcerative enteritis is caused by	a	<i>Salmonella typhimurium</i>
		b	<i>Mycoplasma iowe</i>
		c	<i>Clostridium colinum</i>
		d	All above
121	In acute cases of ulcerative enteritis birds may show	a	no clinical signs
		b	emaciation
		c	constipation
		d	No above
122	Gangrenous dermatitis is caused by	a	salmonella spp.
		b	clostridium spp.
		c	klebsella spp.
		d	None above

123	Clinical signs of <i>Clostridium botulinum</i> infection in chicken are characterized by	a	Progressive paralysis
		b	Respiratory signs
		c	Excitement
		d	None above
124	Clostridial organisms produce	a	endotoxins
		b	exotoxins
		c	calcium
		d	All above
125	<i>Staphylococcus aureus</i> is responsible for	a	early chick mortality
		b	Necrotic enteritis
		c	respiratory distress
		d	Above all
126	In chicken, <i>Staph. aureus</i> is mainly responsible for	a	Purulent arthritis
		b	Enteritis
		c	Pneumonia
		d	None above
127	Vertically transmitted diseases are	a	Mycoplasma
		b	Salmonella gallinarum
		c	Fowl cholera
		d	infectious coryza
128	Organism contaminating the eggs in the nest is	a	<i>Escherichia coli</i>
		b	<i>Mycoplasma gallisepticum</i>
		c	<i>Pasturella multocida</i>
		d	None above
129	For Biosecurity purposes distance between two breeding farms should be not less than	a	200 meters
		b	1000 meters
		c	5000 meters
		d	Above all
130	Round worms in the chicken gut can be successfully removed by administration of	a	Oxytetracycline
		b	Lincomycin
		c	Levamisole
		d	Above all
131	Coccidiosis can be prevented by dietary administration of	a	Zinc bacitracin
		b	chlortetracycline
		c	Salinomycin
		d	Above all
132	Egg drop syndrome virus infection results decreased egg production and	a	Lameness in the laying hens
		b	weak shelled eggs
		c	Watery albumin of eggs
		d	Above all
133	EDS virus is propagated in	a	chicken embryo
		b	Partridge embryo
		c	Duck embryo
		d	All above
134	In aflatoxicosis chicken liver shows	a	fatty change
		b	perihepatitis
		c	hepatocellular carcinoma
		d	All above
135	Minimum acceptable level of aflatoxins B1 in poultry feed is	a	100 ppb
		b	300 ppb
		c	20 ppb
		d	50 ppb
136	Furazilodone toxicosis in chicken caused	a	Cardiac dilatation
		b	atrophy of muscles
		c	nerve degeneration
		d	All above

137	Copper sulfate toxicity in chicken results in	a	liver damage
		b	muscular degeneration
		c	nervous derangement
		d	None above
138	Excess of Sodium in poultry feed results in	a	Ascites
		b	muscle degeneration
		c	soft bones
		d	None above
139	Low dietary phosphorus levels result in	a	hyperesthesia
		b	Visceral gout
		c	Blindness
		d	All above
140	Excess dietary Calcium levels result in	a	Urate deposits in kidneys
		b	liver damage
		c	cardiac dilatation
		d	None above
141	Low calcium levels in feed results in	a	small size of eggs
		b	weak shell of eggs
		c	kidney damage
		d	All above
142	Collibacillosis is caused by	a	<i>E. coli</i>
		b	<i>Salmonella</i>
		c	<i>Clostridium</i>
		d	All above
143	Characteristic lesion in <i>E. Coli</i> infection is	a	Pericarditis & Perihapatitis
		b	Hemorrhagic enteritis
		c	Swollen and edematous bursa
		d	None above
144	In myeloid leucosis tumor cells are comprised of	a	hepatocytes
		b	polymorph leukocytes
		c	Bone cells
		d	None above
145	In lymphoid leucosis clinical cases continue to appear up to	a	10 weeks after appearance of tumors
		b	For life
		c	20 weeks after appearance of tumors
		d	None above
146	In Lymphoid leukosis tumors cells give positive reaction for	a	IGg antibodies
		b	IGA antibodies
		c	IGM antibodies
		d	None of the above mentioned
147	In Lymphoid leucosis tumors do not develop in	a	nerves
		b	muscle s
		c	ovary
		d	None above
148	Mareks disease virus is present	a	World Wide
		b	In asian countries
		c	in American countries
		d	In all African Countries
149	Birds are vaccinated for lymphoid leucosis	a	at one day of age
		b	at one weeks of age
		c	Not vaccinated
		d	Above all
150	Birds recovered from Mareks disease shed virus in their eggs	a	Yes
		b	No
		c	may or may not shed
		d	Above all

Keys MCQs Section C: Poultry Pathology

No.	Answer	No.	Answer	No.	Answer
1	A	51	D	101	A,B
2	A	52	C	102	B
3	D	53	B	103	B,C
4	C	54	B	104	C
5	C	55	A	105	B
6	A	56	A	106	A,B
7	A	57	C	107	A
8	C	58	C	108	A
9	A	59	A	109	C
10	A	60	B	110	B
11	A,B	61	A	111	A
12	C	62	C	112	B
13	B	63	B	113	A,B,C
14	C	64	A	114	C
15	A	65	C	115	B
16	C	66	A	116	A
17	D	67	B	117	C
18	C	68	A	118	A
19	A	69	A	119	B
20	A	70	A	120	C
21	A	71	A	121	A
22	A	72	A	122	B
23	C	73	A	123	A
24	C	74	A	124	B
25	C	75	A	125	A
26	A	76	A	126	A
27	C	77	A	127	A,B
28	B	78	B	128	A
29	C	79	A	129	B
30	A	80	A	130	C
31	B	81	B	131	C
32	D	82	B	132	B
33	C	83	A	133	C
34	A	84	C	134	A
35	A	85	B	135	C
36	A	86	B	136	A
37	B	87	C	137	A
38	A	88	A	138	A
39	B	89	A	139	B
40	B	90	A,B	140	A
41	B	91	B	141	B
42	B	92	A	142	A
43	A	93	A	143	A
44	A	94	B	144	B
45	A	95	A	145	B
46	C	96	B	146	C
47	B	97	A	147	A
48	A,B	98	C	148	A
49	A,B	99	A,B	149	C
50	A,C	100	A	150	B

Institute of Pharmacy, Physiology and Pharmacology
MCQs Section A: Physiology

S.No	Question	Choice	Answer
1	Which subject deals with the integrated functions of the body?	a	Histology
		b	Anatomy
		c	Physiology
		d	Psychology
2	Which functional groups are formed by the association of various tissues?	a	System
		b	Body
		c	Skeleton
		d	Organ
3	What is the thickness of cell membrane?	a	70-100°A
		b	100-150°A
		c	30-60°A
		d	10-20°A
4	The properties of cell that are equated with those of life includes.	a	Growth
		b	Reproduction
		c	Metabolism
		d	All
5	Failure of a tissue or organ to develop is called.	a	Hypoplasia
		b	Aplasia
		c	Neoplasia
6	Following processes can occur across the cell membrane at the same time.	a	Osmosis
		b	Active transport
		c	Both
		d	None of them
7	The process of taking dissolved material into the substance of the cell is called.	a	Phagocytosis
		b	Pinocytosis
		c	Absorption
		d	Diffusion
8	The process by which cell can take in fluid and molecules too large to be carried across the plasma membrane by active transport is called	a	Phagocytosis
		b	Pinocytosis
		c	Absorption
		d	Diffusion
9	If useful products are released from the cell. The process is called	a	Secretion
		b	Excretion
		c	Sweating
		d	Urination
10	Neural excitability is not affected by	a	Alkalosis
		b	Acidosis
		c	Neutral
		d	None of them
11	Inhibitory transmitters may be	a	Glycine
		b	GABA
		c	Both
		d	None of them
12	Action potential in nerve fibers differ in	a	Magnitude
		b	Duration
		c	Both
		d	None of them
13	Homeostasis is controlled by regulating the activity of	a	Cardiac muscle
		b	Smooth muscle
		c	Gland
		d	All

14	Hygrometer is used to measure the	a	Water content
		b	Protein contents
		c	Lipid contents
		d	Mineral contents
15	What percent solution of NaCl is considered isotonic to mammalian RBCs?	a	0.8%
		b	0.85%
		c	0.90%
		d	0.95%
16	If a bathing fluid has a lower osmotic pressure than the cell, it is called	a	Isotonic
		b	Hypotonic
		c	Hypertonic
		d	All
17	If a bathing fluid has higher osmotic pressure than the cell it is called	a	Isotonic
		b	Hypotonic
		c	Hypertonic
		d	All
18	The property of being able to react to a stimulus is called.	a	Conductivity
		b	Irritability
		c	Contractility
		d	Transmission
19	Which ion is found in greater concentration inside the cell?	a	K
		b	Na
		c	Cl
		d	HCO ₃
20	Rough endoplasmic reticulum is involved in the synthesis of	a	Glycogen
		b	Protein
		c	Steroids
		d	Lipids
21	Metabolic water is the water generated in all cell of the body by	a	Ribosome
		b	Mitochondria
		c	Golgi bodies
		d	Centrosome
22	The second largest constituent of protoplasm is	a	Water
		b	Proteins
		c	Lipids
		d	Inorganics
23	Some proteins serve as structural element in	a	Hair
		b	Wool
		c	Horn
		d	All of them
24	Cell physiology includes application of most of laws of which subjects.	a	Biology
		b	Chemistry
		c	Physics and Chemistry
		d	Physics
25	Which protein represent about 30% of the total protein content of the animal body.	a	Collagens
		b	Elastins
		c	Keratins
		d	Fibrin
26	Reactive proteins include	a	Enzymes
		b	Hormones
		c	Globulins of blood
		d	All
27	Lipids includes	a	Triglycerides
		b	Waxes
		c	Prostaglandins
		d	All

28	RNA is intimately associated with synthesis of which constituent of the cell.	a	Carbohydrates
		b	Proteins
		c	Lipids
		d	Inorganics
29	How much percentage of inorganic material is contained in bones.	a	35%
		b	45%
		c	55%
		d	65%
30	Which mineral is an essential part of thyroxin?	a	Fe
		b	Mg
		c	Iodine
		d	Na
31	Smooth endoplasmic reticulum is involved in the synthesis of	a	Glycogen
		b	Lipids
		c	Steroids
		d	All
32	Oxidase enzymes responsible for producing H_2O_2 are present in	a	Mitochondria
		b	Ribosomes
		c	Peroxisomes
		d	Polysomes
33	Microfilaments may assist	a	in the movement of fibroblasts in heart
		b	growth of axons
		c	contraction of all muscle
		d	all
34	Centriole consists of how many paired filaments	a	5
		b	7
		c	9
		d	11
35	The life span of RBC is of	a	80 days
		b	100 days
		c	120 days
		d	140 days
36	Pyrimidine thymine occurs only in	a	RNA
		b	DNA
		c	Both
		d	All
37	Pyrimidine uracil occurs only in	a	RNA
		b	DNA
		c	Both
		d	None of them
38	Adenine is always paired with	a	Guanine
		b	Cytosine
		c	Thymine
		d	Uracil
39	Guanine is always paired with	a	Adenine
		b	Cytosine
		c	Thymine
		d	Uracil
40	During starvation of cell, the amount of following may decrease	a	RNA
		b	Protein
		c	Both
		d	None of them
41	The following are neurotransmitters in the autonomic ganglia:	a	GABA
		b	Noradrenaline
		c	Acetylcholine
		d	5 HT

42	True statements about the pH of the extracellular fluid:	a	In healthy people it is maintained between 7.4 and 7.5
		b	Is increased in hypovolemic shock
		c	Increases following a cardiac arrest
		d	Influences the binding of drugs to plasma proteins
43	The following occur in the proximal tubules of the nephron:	a	Reabsorption of all glucose
		b	Reabsorption of most water
		c	Active reabsorption of sodium
		d	All of these
44	Cytochrome P450 is:	a	Involves in phase I metabolic reactions
		b	Found in lysosomes
		c	Found in ribosomes
		d	Found in mitochondria
45	Actions of angiotensin II include:	a	Increases the release of aldosterone
		b	Reduces renin release from the kidney
		c	Promotes micro albuminuria
		d	All of these
46	In a normal nephron:	a	Anti-diuretic hormone (ADH) increases the permeability of collecting ducts to water
		b	All the filtered glucose is re-absorbed in the proximal tubule
		c	Nearly all the filtered protein is reabsorbed in the proximal convoluted tubule
		d	All of these
47	The release of acetylcholine is blocked by:	a	Hemicholinum
		b	Venom of black widow spider
		c	Cocaine
		d	Botulinum
48	Antidiuretic hormone:	a	Decreases the osmolarity of urine
		b	Decreases the volume of urine
		c	Increases the reabsorption of water in the proximal tubules
		d	Is synthesized in the posterior pituitary gland
49	Insulin secretion:	a	is inhibited by atropine
		b	is decreased by vagal stimulation
		c	is inhibited by amino acids
		d	is stimulated by beta agonists
50	Prolactin secretion:	a	Is higher in female than male
		b	Is inhibited by dopamine
		c	Is increased in patients taking phenothiazines
		d	all above
51	The following are true about DNA synthesis:	a	it requires DNA polymerase
		b	reverse transcriptase enzymes are involved
		c	moves in a 3'---> 5' direction
		d	the rate of error in DNA synthesis is 1 in 10 ⁵ base pairs

52	With regard to DNA molecules:	a	they contain adenine, cytosine, guanine and uracil bases
		b	they can be detected with Western blotting
		c	they can be detected with Southern blotting
		d	None of these
53	G-proteins:	a	are activated by the binding of an extracellular ligand to a membrane receptor
		b	mediate the action of glucocorticoid hormone
		c	they are inactivated by cholera toxins
		d	None of these
54	The following is true about gluconeogenesis:	a	it occurs in liver
		b	it occurs in kidney
		c	it occurs in adipose tissue
		d	Both (a) and (b)
55	With regard to membrane receptors for hormones:	a	they are often glycoproteins
		b	they are important for hormones made up of steroid
		c	those for insulin exhibit an intrinsic protein kinase activity
		d	Both (a) and (c)
56	The following factor(s) tend(s) to INCREASE the rate of glomerular filtration (GFR):	a	Decreased albumin concentration in plasma
		b	Vasodilation of the afferent (pre-glomerular) arteriole
		c	Vasoconstriction of the efferent (post-glomerular) arteriole
		d	All are correct
57	Aldosterone secretion is not controlled by:	a	plasma sodium concentration
		b	plasma calcium concentration
		c	plasma potassium concentration
		d	angiotensin II
58	In pregnancy:	a	the lysozyme in the tear film is increased
		b	the intraocular pressure is lower than pre-pregnancy state
		c	accommodation is decreased
		d	all above
59	The following may cause an elevated blood urea:	a	renal disease
		b	steroid therapy
		c	dehydration
		d	all above
60	The following occur in response to a major surgery:	a	increased potassium loss
		b	increased protein breakdown
		c	sodium and water retention
		d	all above
61	Hyperventilation causes:	a	an alkaline urine
		b	fall in the plasma bicarbonate concentration
		c	increased cardiac output
		d	all above
62	Bradycardia can occur in response to:	a	elevated intraocular pressure
		b	ocular massage
		c	pulling of the extra ocular muscle
		d	all above

63	The prothrombin time	a	assess the extrinsic pathway of the blood coagulation cascade
		b	is prolonged in patients with fat absorption
		c	is increased by warfarin
		d	all above
64	In human being, hemorrhage causes	a	venous constriction
		b	decreased blood flow to the skin
		c	a fall in cardiac output
		d	all above
65	The respiratory system exchanges gases between the _____ and the _____.	a	Blood vessels, tissue fluids
		b	Air in lungs, blood
		c	Air in lungs, air in organs
		d	Tissue fluid, blood
66	In the lungs, _____ gas enters the blood and _____ gas exits the blood.	a	O ₂ , PO ₄
		b	CO ₂ , H ₂ O ₄
		c	CO ₂ , O ₂
		d	O ₂ , CO ₂
67	Gout:	a	is characterized by hyperuricaemia.
		b	causes scleritis
		c	patient with gout should avoid eating offal
		d	all above
68	The following are true about cell-mediated immunity:	a	antigen-specific function is the role of the T-lymphocytes
		b	cell-mediated immunity can activate the complement system
		c	it is responsible for the delayed hypersensitivity reaction.
		d	Gamma interferon is an important mediator of B-cell activation.
69	The following are useful in the diagnosis of HIV infection:	a	polymerase chain reaction
		b	antibodies by enzyme-linked immunoadsorbent assay
		c	P24 protein assay
		d	all above
70	The following are true about chemicals involved in allergic reaction:	a	thromboxane -leukocyte activation
		b	prostaglandin-2 - vasodilatation
		c	platelet-activating factor - leukocyte activation
		d	heparin - augments inactivation of prostaglandins
71	In AIDS, the following abnormalities are seen:	a	persistent lymphopenia
		b	decreased interleukin-2 production
		c	impaired delayed cutaneous hypersensitivity reactions
		d	all above
72	Purines:	a	include guanine
		b	are metabolized to uric acid
		c	are mainly synthesized in the liver
		d	all above
73	Vitamin B12:	a	is essential for the metabolism of folic acid in the humans
		b	is attached to a glycoprotein in the circulation
		c	its deficiency is characterized by hypersegmentation of the neutrophils
		d	all above

74	Folic acid:	a	is water soluble
		b	is absorbed in the stomach
		c	deficiency leads to aplastic anaemia
		d	deficiency occurs with methatrexate treatment
75	Prostaglandins:	a	contains 20 carbon atoms
		b	are unsaturated fatty acids containing a cyclopentane ring
		c	the different types of prostaglandins are classified according to the configuration of the cyclopentane ring
		d	all above

Keys MCQs Section A: Physiology

No.	Answer	No.	Answer	No.	Answer
1	C	26	D	51	A
2	D	27	D	52	C
3	A	28	B	53	A
4	D	29	D	54	D
5	B	30	C	55	D
6	C	31	D	56	D
7	C	32	C	57	B
8	B	33	D	58	D
9	A	34	D	59	D
10	D	35	C	60	D
11	C	36	B	61	D
12	C	37	A	62	D
13	D	38	C	63	D
14	A	39	B	64	D
15	B	40	C	65	B
16	B	41	C	66	D
17	C	42	D	67	D
18	B	43	D	68	B
19	A	44	A	69	D
20	B	45	D	70	B
21	B	46	D	71	D
22	B	47	D	72	D
23	D	48	B	73	D
24	C	49	A	74	A
25	A	50	D	75	D

MCQs Section B: Pharmacology

No.	Question	Choice	Answer
1	Histamine is synthesized from;	a	Nor-epinephrine
		b	Histidine
		c	Nor-adrenaline
		d	Epinephrine
2	Prostaglandin is;	a	Neurotransmitter
		b	Autacoids
		c	Endocrine hormone
		d	Steroid hormone
3	Arichidonic acid is precursor of;	a	Histamine
		b	Epinephrine
		c	Prostaglandins
		d	Nor-epinephrine
4	Aspirin acts as analgesics and antipyretic by inhibiting;	a	Monoamine oxidase enzyme
		b	Cyclooxygenase enzyme
		c	Carbonic anhydrase enzyme
		d	Lipoxygenase enzyme
5	Quantal dose response relationship refers to;	a	All or non response
		b	Increase the intensity of action
		c	Decrease the intensity of action
		d	All above
6	Potency of a drug means;	a	Action of drug by a dose
		b	Activity of drug per unit mass
		c	Activity of a drug molecule
		d	Activity of drug per unit area
7	Efficacy refers to;	a	Potency of a drug
		b	Intrinsic activity of a drug
		c	Safety of a drug
		d	Binding capacity of drug
8	For computing kinetic parameters the concentration versus time data is plotted on;	a	Ordinary graph paper
		b	Plane paper
		c	Semi log graph paper
		d	Log graph paper
9	The discipline of pharmacology dealing with mode of action of drug is known as;	a	Pharmacotherapy
		b	Pharmacy
		c	Pharmacodynamics
		d	Pharmacognosy
10	Pharmacy deals with;	a	Mechanism of action of drug
		b	Preparation of drug
		c	Identification of drug
		d	Metabolism of drug
11	Subscription carries;	a	Instruction for pharmacist
		b	Instruction for the user
		c	Instruction for the prescriber
		d	Instruction for the doctor
12	Soporifics are;	a	Pain killer
		b	Sleep inducing agents
		c	Antipyretics
		d	Anesthetics
13	Intrathecal administration of drug means;	a	Epidural administration
		b	Administration into C.S.F
		c	Intraocular
		d	Intracranial

14	In epidural administration drug is administered;	a	into C.S.F
		b	Above the durameter
		c	Below the durameter
		d	Into the durameter
15	Derivatives of sulfanilamides are called;	a	Barbiturates
		b	Sulfonic acid
		c	Sulfonamide
		d	Sulfadiazine
16	Metabolite of drug may become;	a	More lipophilic
		b	More polar than parent drug
		c	Non polar than parent drug
		d	All of the above
17	Biotransformation of drug facilitates excretion of drug;	a	By changing it to more active
		b	By converting non polar drug to polar
		c	By converting polar drug to non polar
		d	None of the above
18	Polar substances are excreted;	a	Easily by kidney
		b	Slowly by kidney
		c	Normally by kidney
		d	Rapidly by the Kidney
19	1 st pass effect;	a	Increase the bioavailability of the drugs
		b	Decrease the bioavailability of the drugs
		c	Increase the excretion of drugs
		d	Decrease the excretion of drugs
20	Drug administered I/V may excrete in faeces due to;	a	Absorption of drug
		b	Metabolism of drug
		c	Due to entero-hepatic circulation
		d	All of the above
21	Biliary excretion drug refers to excretion;	a	In urine
		b	In milk
		c	In faeces
		d	In sweat
22	Tick the true statement;	a	All the antibacterials are antibiotics
		b	All the antibiotics are antibacterial
		c	All the antibacterial are obtained from living organism
		d	All the antibiotics prepared in laboratory
23	All the antibiotics are;	a	Bactericidal only
		b	Bacteriostatic only
		c	Bacteriostatic and bactericidal
		d	None of the above
24	Drugs give their action;	a	Due to their specific receptor only
		b	Due to non receptor mediated mechanism only
		c	Due 1 and 2
		d	Due to metabolism of drug
25	In anaphylactic shock due to drug;	a	Blood pressure is increased to high limit
		b	Blood pressure dropped to critical level
		c	Nothing happen to blood pressure
		d	None of the above

26	Posology deals with;	a	Weighing and measuring of drug
		b	Dose and dosage
		c	Metabolism of drugs
		d	Development of drug
27	Ice burge theory explains the mode of action of;	a	Local anesthetics
		b	All general anesthetics
		c	Volatile general anesthetics
		d	a and b
28	Penicillin gives their bactericidal action due to;	a	Inhibition of protein synthesis
		b	Inhibition of nucleic acid synthesis
		c	Inhibition of cell wall synthesis
		d	Inhibition of cell membrane synthesis
29	Sulfonamide give their bacteriostatic action due to;	a	Protein synthesis inhibition
		b	Competing antimetabolite
		c	Cell wall synthesis inhibition
		d	nucleic acid synthesis inhibition
30	Tachyphylaxis develops;	a	Over days
		b	Over weeks
		c	Within minutes
		d	Over Years
31	Tolerance to drug may develop due to;	a	Increase rate of metabolism of drug
		b	Decrease rate of metabolism of drug
		c	Decrease in the excretion of drug
		d	Impaired excretion of drug
32	Tachyphylaxis may develop due to;	a	Increase rate of metabolism of drug
		b	Exhaustion of mediators
		c	Decrease rate of metabolism of drug
		d	All of the above
33	Acetylcholine is a chemical mediator at;	a	Sympathetic nervous system
		b	Parasympathetic nervous system
		c	None of the above
		d	All of the above
34	Prontosil is reduced to _____ in the body;	a	Aryl amine
		b	Acetate
		c	Sulfanilamide
		d	Sulfamethazone
35	Acetate and choline are metabolite of;	a	Nor epinephrine
		b	Neostigmine
		c	Acetyl choline
		d	Epinephrine
36	Choral hydrate is converted into _____ by the liver which is an active metabolite;	a	Butanol
		b	Trichloroethanole
		c	Trichloroacetic acid
		d	All of the above
37	Glucoronide conjugation is missing in;	a	Cat
		b	Dog
		c	Pig
		d	Horse
38	Sulfate conjugation is of low level in;	a	Cat
		b	Pig
		c	Dog
		d	Horse
39	Sulfonamide are metabolized in the body by the reaction;	a	Oxidation
		b	Reduction
		c	Acetylation
		d	All of the above

40	Drug allergy refers to those situations in which unusual response is due to;	a	Over dose
		b	Wrong rout of administration
		c	Antigen-antibody reaction
		d	Hypersensitivity
41	Histamine is stored in the following cell in the body;	a	Epithelial cells
		b	Eosinophils
		c	Mast cells and basophis
		d	Plasma cells
42	Idiosyncrasy is attributable to;	a	Immunological basis
		b	Genetic abnormality
		c	Over dose of a drug
		d	Resistance to drug
43	Biotransformation facilitates the excretion of drugs by changing them into;	a	More ionized and less lipid soluble
		b	Less ionized and more lipid soluble
		c	More ionized and more lipid soluble
		d	less ionized and less lipid soluble
44	Basic nitrogenous substances available in plants are exploited for their pharmacological actions are known as;	a	Tannins
		b	Glucoside
		c	Alkaloids
		d	Saponins
45	Styptics are used to prevent;	a	Minor hemorrhages
		b	Clotting of blood
		c	Perfuse hemorrhages
46	Oxidative reactions are called;	a	Synthetic reaction
		b	Non synthetic reaction
		c	Conjugation reaction
		d	Acetylation reaction
47	When a drug potentiates or complements the action of other drug the phenomenon is called;	a	Antagonism
		b	Drug interaction
		c	Synergism
		d	Summation
48	The substances added to a dosage form in addition to active ingredients are called;	a	Inert
		b	Excipient
		c	Recipient
		d	Polar
49	Hard solid preparation applied to skin under a cloth are leather covering are known as;	a	Emulsions
		b	Lotions
		c	Plasters
		d	Cream
50	The drug preparations which are used by licking are;	a	Aerosole
		b	Dragee
		c	Linctures
		d	Lotions
51	Ad lib means;	a	Upto
		b	As desired
		c	Minimum
		d	Less than desired
52	The mechanism of transport of drug which work like active transport but the drug does not more against concentration gradient;	a	Pinocytosis
		b	Passive diffusion
		c	Facilitated diffusion
		d	Endocytosis
53	Hepatic and renal diseases	a	Decrease the half life
		b	Increase the half life
		c	Do not affect the half life
		d	All of the above

54	If the gut motility is increased then;	a	Drug absorption is decreased
		b	Drug absorption increased
		c	Drug absorption is not affected
		d	All of the above
55	The rate of drug absorption is greatest in;	a	The small intestine
		b	The large intestine
		c	The stomach
		d	Plasma
56	Drug distribution may depend on tissue perfusion;	a	Highly vascular organs a drug slowly
		b	Highly vascular organ rapidly acquire a drug
		c	Levels of drug in bone may rise quickly due to its high vascularity
		d	None of the above
57	Most drugs and metabolites are excreted by;	a	The kidneys
		b	The bile
		c	The lungs
		d	The saliva
58	Pharmacodynamics considers;	a	The way in which the drug affects the body
		b	The effect of drug in the body and mode of action
		c	Drug metabolism
		d	Drug excretion
59	A drug allergy occurs;	a	When too much drug has accumulated in the body
		b	When body sees the drug as an antigen and an immune response is established against the drug
		c	An unwanted but predictable response to a drug
		d	An unwanted but unpredictable response to a drug
60	The drug receptor interaction is usually;	a	Irreversible
		b	Reversible
		c	Always irreversible
		d	unchanged
61	Cholinestrase enzyme is inhibited by;	a	Atropine
		b	Organo phosphorus pesticide
		c	Pilocarpine
		d	Nicotine
62	The osmotic diuretic produces diuresis;	a	By increasing osmolarity of tubule urine
		b	By decreasing osmolarity of tubule urine
		c	Increasing reabsorption of water
		d	Decrease osmolarity of blood
63	The magnesium sulfate acts as a purgative because;	a	Magnesium and sulfate ions are rapidly absorbed
		b	Magnesium and sulfate ions are poorly absorbed
		c	Magnesium ion stimulate protect the mucosa
		d	Magnesium ion inhibit peristalsis
64	MAO inhibitors prevent;	a	The excretion of epinephrine
		b	The metabolism of epinephrine
		c	The distribution of epinephrine
		d	The absorption of epinephrine

65	Acetazolamide produces diuresis;	a	By inhibiting carbonic anhydrase
		b	By inhibiting cholinestrase
		c	By inhibiting M.A.O.
		d	By stimulating M.A.O
66	Blood brain barrier can be crossed easily by;	a	Unionized and lipophilic drug
		b	Ionized and hydrophilic drug
		c	Highly ionized drug
		d	Unionized and hydrophilic drug
67	Renal function can be estimated by determining;	a	Renal clearance of potassium
		b	Renal clearance of Na.
		c	Renal clearance of creatinine
		d	Plasma clearance of creatinine
68	Zero order elimination is;	a	Dose independent
		b	Dose dependent
		c	Both A and B
		d	None of the above
69	1 st order elimination is;	a	Dose independent
		b	Dose dependent
		c	Both A and B
		d	None of the above
70	Drugs mainly bind to protein in the body;	a	Albumin
		b	Globulin
		c	Hemoglobin
		d	Starch
71	H1-receptor of histamines are mainly associated with;	a	Blood vascular system
		b	Blood vascular and respiratory system
		c	Stomach
		d	Heart
72	Pharmacognosy deals with;	a	Preparation of drug
		b	Properties and identification of drugs
		c	Doses of drugs
		d	Weight and measures
73	Microsomal enzyme induction leads to;	a	Prolong the half life of drug
		b	Shorten the half life of drug
		c	No effect on the half life of a drug
		d	None of the above
74	Microsomal enzyme inhibitors;	a	Prolong the half life of a drug
		b	Shorten the half life of a drug
		c	None of A & B
		d	No effect on the half life of a drug
75	Renal clearance of a drug refers;	a	The volume of blood cleared of drug per unit time
		b	The volume of urine coming from kidney per unit time
		c	The volume of drug cleared from the blood
		d	The volume of drug cleared from the urine

Key MCQs Section B: Pharmacology

No.	Answer	No.	Answer	No.	Answer
1	B	26	B	51	B
2	B	27	C	52	C
3	C	28	C	53	B
4	B	29	B	54	A
5	A	30	C	55	A
6	B	31	A	56	B
7	B	32	B	57	A
8	C	33	B	58	B
9	C	34	C	59	B
10	B	35	C	60	B
11	A	36	B	61	B
12	B	37	A	62	A
13	B	38	B	63	B
14	B	39	C	64	B
15	C	40	C	65	A
16	B	41	C	66	A
17	B	42	B	67	C
18	A	43	A	68	B
19	B	44	C	69	A
20	C	45	A	70	A
21	C	46	B	71	B
22	B	47	C	72	B
23	C	48	B	73	B
24	C	49	C	74	A
25	B	50	C	75	A

Theriogenology**MCQs Section A: Theriogenology**

No.	Question	Choice	Answer
1	In general, hormones are classified as proteins, polypeptides and steroids, which one of the following is a polypeptide	a	Dopamine
		b	Epinephrine
		c	Progesterone
		d	Oxytocin
2	In the cow, at the time of ovulation, oocyte will be at:	a	Primary oocyte stage
		b	Secondary oocyte stage
		c	Tertiary oocyte stage
		d	Ootid stage
3	Which of the following hormones are transported in the blood in bound form?	a	Progesterone
		b	Testosterone
		c	Estrogens
		d	All of the above
4	Pheromones are hormone like substances that affect	a	Other animals of other species through olfaction
		b	Other animals of the same species through olfaction
		c	Other animals of the same species through skin
		d	None of the above
5	Rectally palpable positive sign of pregnancy in cattle at 45 days of gestation is	a	Disparity in uterine horn size
		b	Fluid fluctuation in uterine horns
		c	Presence of a big CL
		d	Presence of Amniotic vesicle
6	Functionally, hCG is predominantly like	a	Progesterone
		b	L.H
		c	Estrogen
		d	FSH
7	Ovulation without behavioral estrus signs is called as	a	Silent ovulation
		b	Sub ovulation
		c	Silent estrus
		d	Diestrus
8	When a cow not in true heat is bred through A.I, it will result in	a	Monozygotic pregnancy
		b	Dizygotic pregnancy
		c	Non conception
		d	Delayed conception
9	The primary oocytes are differentiated from	a	Oogonia
		b	Sertoli cells
		c	Myoid cells
		d	Connective tissue
10	The zygote undergoes cell proliferation to form	a	Blastomeres
		b	Cyst
		c	Blastocytic degeneration
		d	Antrum
11	The process of parturition is initiated by	a	Mother
		b	Temperature of uterus
		c	Fetus
		d	Age of the mother
12	The early pregnancy factor (EPF) has	a	Immunosuppressive properties
		b	Immunostimulating properties
		c	Autoimmune properties.
		d	None of the above

13	Presence of progesterone in maternal circulation indicates	a	Luteal activity
		b	Maternal activity
		c	Follicular activity
		d	Fetal activity
14	p FSH stands for	a	Porcine follicle stimulating hormone
		b	Purified follicle stimulating hormone
		c	Putrefied follicle stimulating hormone
		d	Partially purified follicle stimulating hormone
15	Circulating concentration of which hormone is lowest at estrus in cow?	a	Estradiol
		b	Progesterone
		c	FSH
		d	LH
16	Which hormones cause the expression of behavioral signs of estrus in the cow	a	Inhibin & estrogen
		b	Estrogen & progesterone
		c	Progesterone & GnRH
		d	LH & FSH
17	Immunization of a cyclic cow against oxytocin will lead to:	a	Prolongation of the cycle
		b	Shortening of the cycle
		c	No effect on the cycle
		d	None of the above
18	Ovulation in cattle occurs	a	At the beginning of heat
		b	At the mid of heat
		c	At the end of heat
		d	10-14 hours after the end of heat
19	Sperm capacitation in the cattle mostly occurs in	a	Vagina
		b	cervix
		c	Uterus
		d	uterus and fallopian tube
20	Length of estrus cycle does not change in cattle if embryo dies	a	10 days after conception
		b	16 days after conception
		c	17 days after conception
		d	19 days after conception
21	In general, GnRH analogs functionally are	a	more potent than natural GnRH
		b	less potent than natural GnRH
		c	equally potent to natural GnRH
		d	None of the above
22	In cattle oxytocin is synthesized in	a	hypothalamus only
		b	hypothalamus and CL
		c	hypothalamus and pituitary
		d	Posterior pituitary
23	From which duct of embryo the male reproductive system arises?	a	Mullerian
		b	Wolfian
		c	Oviduct
		d	Bile duct
24	The initiation of puberty in bovine is largely a function of animals	a	Age only
		b	Body weight only
		c	Both age & body weight
		d	Climate
25	The first heat of pubertal animal is often silent because of lack of	a	Progesterone
		b	Estrogen
		c	LH
		d	FSH
26	In bovine, CL attains maximum size by ____ day of cycle	a	5th day
		b	9 th to 10 th day
		c	15 th day
		d	189 th day

27	Which of the following animals is an induced ovulator?	a	Buffalo
		b	Camel
		c	Bitch
		d	Cow
28	What is the time of ovulation in the mare?	a	1-2 days after the start of estrus
		b	1-2 days after the end of estrus
		c	1-2 days before the end of estrus
		d	1-2 days after mating
29	Which of the followings is necessary for ovulation?	a	High blood progesterone levels
		b	Pre-ovulatory LH surge
		c	Low blood estrogen levels
		d	None of the above
30	Which of the followings inhibits ovulation?	a	High blood progesterone levels
		b	Pre-ovulatory LH surge
		c	High blood estrogen levels
		d	High blood glucose levels
31	What is the average duration of estrus period in the buffalo?	a	21 days
		b	42 days
		c	17 days
		d	None of the above
32	Placentomes are formed by the fusion of:	a	Maternal caruncles and fetal cotyledons
		b	Maternal cotyledons and fetal caruncles
		c	Both A and B
		d	None of the above
33	The first follicle formed in the fetal ovary is called as:	a	Primordial follicle
		b	Primary follicle
		c	Secondary follicle
		d	Graafian follicle
34	Which enzyme(s) play major role in the passage of sperm through Zona Pellucida during fertilization?	a	Acrosine
		b	Corona Penetrating enzyme
		c	Lypase
		d	Hyaluronidase
35	When does Zona hatching occur in a bovine embryo?	a	6-7 days after fertilization
		b	9-11 days after fertilization
		c	14-16 days after fertilization
		d	18-20 days after fertilization
36	The three germ layers of the embryo develop from:	a	Trophoblast
		b	Embryoblast
		c	Both A and B
		d	None of the above
37	What is the type of placenta in a cow?	a	Diffuse
		b	Zonary
		c	Discoid
		d	Cotyledonary
38	In which species 99% pregnancy occurs in the left uterine horn	a	Sheep
		b	Goat
		c	Camel
		d	Buffalo
39	The main mechanism involved in elimination of the bacteria from infected postpartum uterus is:	a	Sloughing of caruncles
		b	Phagocytosis
		c	Low estrogenic activity
		d	High progesterone blood level

40	Service period is defined as the period	a	From parturition to next calving
		b	From one conception to next conception
		c	From conception to calving
		d	From parturition to next conception
41	Cyclicity in mare is depending on photo-period and it	a	Start when daylight to darkness ratio decreases
		b	Start when daylight to darkness ratio increases
		c	Day light to darkness ratio is equal
		d	None of the above
42	The first stage of parturition is called as	a	Dilation of cervix
		b	Fixation of cervix
		c	Twisting of cervix
		d	Dilation of uterus
43	What is the duration of second stage of parturition in the mare?	a	15 to 30 minutes
		b	1.5 hour
		c	2-4 hours
		d	24 hours
44	In which phase of the oestrus cycle uterus is prone to infection	a	Pro-estrous
		b	Estrus
		c	Met-estrous
		d	Di-estrous
45	In the cow during natural mating, the semen is ejaculated in the	a	Uterus
		b	Cervix
		c	Oviduct
		d	Vagina
46	What is the optimum time of insemination in a buffalo?	a	8-10 hours before the start of estrus
		b	8-10 hours after the end of estrus
		c	12-15 hours after the start of estrus
		d	None of the above
47	The 2 nd stage of parturition is called as	a	Expulsion of fetus
		b	Expulsion of placenta
		c	Expulsion of embryo
		d	Expulsion of calf
48	The involution of uterus in cattle can be delayed due to:	a	Delivery of single calf
		b	Retention of fetal membranes
		c	Uterine prolapse
		d	Both B and C
49	Joining point of the fallopian tube with uterine horn is called as:	a	Ampullary-isthmic junction
		b	Utero-tubal junction
		c	Utero-ovarian junction
		d	Utero-vaginal junction
50	What is the average length of gestation in a buffalo?	a	310 weeks
		b	280 days
		c	340 days
		d	310 days
51	The corpus luteum is a principal source of:	a	Prostaglandin F2a
		b	Estradiol
		c	Testosterone
		d	Progesterone
52	In the mare, foal heat occurs:	a	2 1-30 days after foaling
		b	2 1-30 hours after foaling
		c	7-13 days after foaling
		d	7-13 hours after foaling

53	At puberty, a female attains about:	a	100% of its mature body weight
		b	30% of its mature body weight
		c	90% of its mature body weight
		d	60% of its mature body weight
54	A corpus luteum of pregnancy is also known as:	a	Corpus luteum spurium
		b	Corpus luteum verum
		c	Corpus haemorrhagicum
		d	Corpus albican
55	In a pregnant cow, placentomes can be palpated per rectum as early as:	a	30 th day of gestation
		b	75 th day of gestation
		c	90 th day of gestation
		d	120 th day of gestation
56	Ovarian cells that respond to FSH are	a	Theca interna
		b	Granulosa
		c	Interstitial ovarian cells
		d	Theca externa cells
57	What is the chemical nature of GnRH?	a	Fatty acid
		b	Polypeptide
		c	Steroid
		d	Glycoprotein
58	The inhibin hormone selectively suppresses the secretion of	a	FSH and LH
		b	LH only
		c	FSH only
		d	eCG
59	Oxytocin is stored in:	a	Neurohypophysis
		b	Adenohypophysis
		c	Hypothalamus
		d	None of the above
60	Which is the main luteolytic hormone in mammals?	a	FSH
		b	LH
		c	eCG
		d	PGF2a
61	Which gland secretes melatonin hormone?	a	Anterior Pituitary
		b	Posterior Pituitary
		c	Thymus
		d	Pineal
62	From which germ layer of embryo internal reproductive organs develops?	a	Ectoderm
		b	Mesoderm
		c	Endoderm
		d	Trophoblast
63	Fructose, a source of energy for spermatozoa, is found primarily in secretions from the	a	Testis
		b	Epididymis
		c	Prostate
		d	Seminal vesicles
64	Average ejaculation volume in a normal adult ram is	a	0.5-2 ml
		b	3-4 ml
		c	5-10 ml
		d	None of the above
65	Recommended number of motile spermatozoa per dose of liquid semen is:	a	1 billion
		b	10 million
		c	40 million
		d	70 million
66	The primary circulating androgen in animal body is	a	Androstenidione
		b	Testosterone
		c	Dihydrotestosterone
		d	Estradiol

67	The sac-like organelle on the anterior portion of the sperm head is known as	a	Acrosine
		b	Acrosome
		c	Acrocentric
		d	Lysosome
68	Absence of sperm in the semen is called	a	Azoospermia
		b	Haemospermia
		c	An spermia
		d	Oligospermia
69	The descend of testes into scrotum takes place in cattle at	a	One month after delivery
		b	One month before delivery
		c	100-115 days of gestation
		d	At birth
70	The seminal vesicles are	a	Absent in dog and cat
		b	Present in dog and cat.
		c	Absent in cattle.
		d	Absent in the horse.
71	In the stallion the prostate gland is	a	Wholly external
		b	Partially external.
		c	Half external and half internal.
		d	None of the statements is correct
72	Spermatozoa contain lactic dehydrogenase enzyme	a	More than seminal plasma.
		b	Less than seminal plasma.
		c	Equal to seminal plasma.
		d	None of the statements is correct.
73	Important cat ions of mammalian seminal plasma are	a	Calcium and sodium.
		b	Sodium and potassium.
		c	Potassium and calcium.
		d	Calcium and magnesium.
74	Spermiogenesis has the following phases	a	Golgi, cap and maturation phases
		b	Golgi, acrosomal and maturation phases
		c	Cap, acrosomal and maturation phases
		d	Golgi, cap, acrosomal and maturation phases
75	The duration of spermatogenesis in ram is	a	54-63 days
		b	64-74 days
		c	38-44 days
		d	40-49 days
76	The spermatozoa get ability to move in the	a	The tubuli recti
		b	Vas efferens
		c	Vas deferens
		d	The epididymis.
77	The normal osmotic pressure of seminal plasma is	a	265 milliosmoles
		b	285 milliosmoles
		c	385 milliosmoles
		d	All the statements are incorrect
78	Leydig cells produce	a	Estrogen
		b	Testosterone
		c	FSH
		d	Large quantities of inhibin
79	The bulk of the testis consists of	a	Seminiferous tubules
		b	Interstitial cells
		c	Both a and b
		d	None of the above

80	Which function is affected in cryptorchid testis	a	Sperm production
		b	Hormone production
		c	Libido
		d	Secondary sexual characters
81	Which of the following hormone is mainly responsible for libido in the male?	a	Estrogen
		b	Testosterone
		c	Progesterone
		d	None of the above
82	In males, LH receptors are found on the	a	Spermatogonia
		b	Sertoli cells
		c	Interstitial cells of the testis
		d	Connective tissue cells in the testis
83	In the male LH is also known as:	a	ICSH
		b	STH
		c	TSH
		d	None of the above
84	Chemically, testosterone is a	a	Glycoprotein
		b	Polypeptide
		c	Fatty acid
		d	Steroid
85	Which of the following compound is a precursor of steroids?	a	Serotonin
		b	Cholesterol
		c	Epinephrine
		d	Insulin
86	Clinically, based on the severity, endometritis is classified into:	a	Two degrees
		b	Three degrees
		c	Four degrees
		d	None of the above
87	The termination of pregnancy with the expulsion of a fetus of recognizable size before it is viable is called	a	Evacuation
		b	Evisceration
		c	Stillbirth
		d	Abortion
88	In cattle, eCG is used for	a	Treatment of follicular cyst
		b	Treatment of luteal cyst
		c	Treatment of cystic corpus luteum
		d	Multiple follicular growth
89	hCG in veterinary practice is used for	a	Multiple ovulation
		b	Delaying the ovulation time
		c	Treatment of follicular cyst
		d	Treatment of uterine prolapse
90	When a cow has persistent CL on the ovary, her estrus cycle will be	a	Shortened
		b	Prolonged
		c	Normal
		d	Cease
91	The best time of using LH as a treatment of follicular cyst is	a	Before the commencement of estrus
		b	During estrus
		c	During met estrus
		d	Just after A.I.
92	The dosage of antimicrobial drugs is not a fixed entity; the dose may be determined by	a	Weight of animal
		b	Severity of disease
		c	Intake of drug by animal
		d	Both a & b
93	Many drugs are poorly absorbed from the gut such as cephalosporin, polymixins, aminoglycoside and tetracycline one of the best route is	a	Oral
		b	I/V
		c	S/C
		d	None of the above

94	The incidence of follicular cyst is associated with	a	High milk production
		b	Non genetic basis
		c	Poor nutrition
		d	Season of year
95	In cattle, Persistent CL is mostly present due to	a	Embryonic loss before implantation
		b	Pyometra
		c	Use of PGF2 α
		d	Regular estrus cycle
96	Prolapse of vagina is differentiated from uterine prolapse by the presence of	a	Cotyledons over averted part
		b	No cotyledons over averted part
		c	Occurrence is not possible after parturition
		d	None of the above
97	A Freemartin heifer is born	a	Single
		b	As co-twin female
		c	As co-twin female + male
		d	As hermaphrodite
98	Oophoritis is a disease of	a	Testes
		b	Spermatic cord
		c	Ovary
		d	Fallopian tubes
99	Most commonly used instrument for traction in live calve is:	a	Krey's hook
		b	William's long blunt hook
		c	William's sharp pointed hook
		d	Obstetrical chain
100	A four years old bitch has been mated with a fertile dog, developed enlargement of abdomen looking pregnant. If she does not deliver after full term what could the possibility?	a	Normal pregnancy
		b	Pseudo-pregnancy
		c	Cystic ovaries
		d	None of above
101	Left flank incision is the most common technique and most appropriate for	a	Standing animals
		b	Sitting animals
		c	Vicious animals
		d	Anaesthetized animals
102	The dissection of fetus in the uterus in termed as	a	Fetotomy
		b	Embryotomy
		c	Caesarian section
		d	Non of the above
103	For per vaginal fetal delivery the basic obstetrical procedure is	a	Repulsion
		b	Version
		c	Presentation
		d	Traction
104	In which species uterine torsion is a common problem	a	Bovine
		b	Ovine
		c	Canine
		d	Equine
105	At which stage of pregnancy uterine torsion usually occurs	a	Near parturition
		b	During second trimester
		c	During first trimester
		d	Immediately after parturition
106	The most common fetal cause of bovine dystokia is	a	Lateral deviation of head
		b	Flexion of limb
		c	Transverse presentation
		d	Posterior longitudinal presentation
107	The traction can be safely applied, when	a	Pelvis is compatible with the fetal size
		b	Fetus is in transverse position
		c	In ring womb condition
		d	Uterus is lacerated

108	During handling bovine dystokia for per vaginal fetal delivery, the first step should be	a	Rectification of defect
		b	Apply traction
		c	Fetotomy
		d	Caesarian section
109	Which is the most commonly injured nerve during fetal traction in bovine dystokia	a	Obturator nerve
		b	Sciatic nerve
		c	Pudendle nerve
		d	Coccygeal nerve
110	Wry neck is more common condition in	a	Equine
		b	Bovine
		c	Canine
		d	Ovine
111	High incidence of repeat breeding within 25-35 days after service in a cattle herd is commonly due to	a	Brucellosis
		b	Campylobacterosis
		c	Trichomoniasis
		d	Salmonelosis
112	For controlling Compylobacterosis in a cattle herd	a	Use Compylobacterosis free bulls for service
		b	Use bulls vaccinated against Compylobacterosis
		c	Use only A.I
		d	Check every cow before service
113	Occurrence of abortions with retention of fetal membrane quite commonly in a herd is an indication of	a	Brucellosis
		b	Compylobacterosis
		c	Trichomoniasis
		d	Leptospirosis
114	Breeding bulls get Trichomonas infection by	a	Ingestion of infected feed
		b	Drinking contaminated water
		c	Infected bulls residing in the same shed
		d	Serving an infected cow
115	Inflammation of testis is called as:	a	Salpingitis
		b	Stomatitis
		c	Orchitis
		d	None of the above
116	Salpingitis is the disease of the:	a	Ovaries
		b	Uterus
		c	Cervix
		d	Fallopian Tubes
117	Genital prolapse before parturition is also called as:	a	Vagino-cervical
		b	Uterine
		c	Rectal
		d	Preputial
118	A 12 years old pregnant cow mated with a bull on farm started bloody discharge, during 7th month of pregnancy what you will expect	a	A mummified fetus on rectal palpation
		b	Large amount of fluid being a case of hydro-allantois
		c	Prominent amniotic sac with fluctuating fluid being a case of hydro-amnion
		d	A case of brucellosis
119	A high milk producing cow in her 3rd lactation shows remarkable long estrus with copious mucus discharge at an interval of each 16 days but did not conceive with more than three services. What is the most likely diagnosis?	a	Cystic corpora lutea
		b	Endometritis
		c	Follicular cyst
		d	Ovarian carcinoma

120	A steer like heifer presented with complete an-estrus, small vulvular lips. On rectal examination the genital tract was underdeveloped. What is the most common cause, based on the history of heifer?	a	Homozygous twin born
		b	Atrophy of the genital tract
		c	Hypoplasia of ovaries
		d	Endometritis
121	Epidural anesthesia is best performed by injecting drug between	a	3 rd and 4 th sacral vertebrae
		b	Lumbo-sacral space
		c	Sacro-coccygeal space
		d	Sacro-schiatic space
122	The Chromosome Number (2N) in domestic cattle (<i>Bos indicus</i>) is	a	64
		b	60
		c	64
		d	58
123	In artificial insemination in cattle, the semen is deposited in	a	Vagina
		b	Vestibule
		c	External os
		d	Body of uterus
124	A flow cytometric procedure has been developed to	a	Evaluate the motility of spermatozoa
		b	Evaluate the structural integrity of sperm chromatin
		c	Assess the mass activity
		d	Separate sperm bearing X and Y chromosome
125	In bovine embryo transfer, it is the transfer from donor to the recipient of	a	Unfertilized ovum and insemination of recipient
		b	Fertilized egg
		c	3 month old fetus
		d	Primary oocyte
126	The most important single technique devised for the rapid genetic improvement of animals is	a	Rectal palpation
		b	Artificial insemination
		c	Sperm sexing
		d	In vitro maturation
127	The gametes are haploid cells containing	a	Either X or Y chromosome
		b	XY chromosomes
		c	XO chromosomes
		d	YZ Chromosomes
128	Synchronization of estrus in a group of cattle can be achieved with prostaglandin F-2a if two injections are given	a	5 days apart
		b	14 days apart
		c	11 days apart
		d	21 days apart
129	The first birth of a cloned offspring took place in a	a	Sheep
		b	Goat
		c	Woman
		d	Cattle
130	The current method of embryo transfer in buffalo is	a	Transcervical
		b	Transabdominal
		c	Through laparotomy
		d	Through laproscopy
131	At 35 days of gestation in cattle, palpation of the following will confirm pregnancy	a	Asymmetry of uterine horns
		b	Fluid fluctuation in the uterus
		c	CL on the ovary
		d	Presence of amniotic vesicle
132	The chromosome number in the sperm of horse is	a	30
		b	27
		c	33
		d	32

133	Standard practice to add antibiotics, penicillin and streptomycin in semen extender is at the rate	a	Penicillin-1000 I.U and streptomycin-1 mg per ml of extender
		b	Penicillin 1500 I.U and streptomycin-2 mg per ml of extender
		c	Penicillin 1500 I.U and streptomycin-1 mg per ml of extender
		d	Penicillin 2000 I.U and streptomycin-1 mg per ml of extender
134	The temperature of liquid Nitrogen is	a	-165c
		b	-180c
		c	-196c
		d	-79
135	The best temperature for thawing of semen is	a	4°C for one minute
		b	20°C for five minutes
		c	37°C for 30 seconds
		d	70°C for two minutes
136	Teasing of bull before mounting results in	a	Increase sperm concentration
		b	Decrease sperm concentration
		c	Increase seminal fluid
		d	Decrease prostate secretion
137	Best quality of bull semen may be collected by using	a	Artificial vagina
		b	Electro-ejaculator
		c	Seminal/Ampullary massage
		d	None of above method
138	Electro-ejaculation is a method of choice in	a	Young healthy bulls
		b	Trainee bulls
		c	Old or injured breeding bulls
		d	None of the above
139	At which developmental stage the bovine embryos are collected for transfer to recipient	a	Morula
		b	Hatched blastocyst
		c	Gastrula
		d	Hatched embryo
140	Which is the most commonly used ultrasound display format in veterinary practice?	a	Motion mode
		b	Amplitude mode
		c	Brightness mode
		d	None of the above
141	In B-mode ultrasound, the image of a Graafian follicle will be?	a	Bright
		b	Black
		c	Grey
		d	None of the above
142	Ultrasonically, bovine fetal sexing is done at:	a	20-30 days of gestation
		b	30-40 days of gestation
		c	50-60 days of gestation
		d	90-100 days of gestation
143	In a male fetus, the genital tubercles are located between:	a	Hind limbs and tail
		b	Hind limbs and the umbilicus
		c	Forelimbs and the umbilicus
		d	Forelimbs and the head
144	In bovines, pregnancy can be detected ultrasonically as early as:	a	12-15 days after fertilization
		b	20-25 days after fertilization
		c	30-35 days after fertilization
		d	50-60 days after fertilization
145	Pregnancy diagnosis through milk or plasma progesterone can be made days after mating	a	At 9 days
		b	11 days
		c	24 days
		d	17 days

146	A teaser male is used for:	a	Estrus detection
		b	Pregnancy testing
		c	Natural mating
		d	None of the above
147	Which of the following is the confirmatory sign of heat in a cow?	a	Urination
		b	Bellowing
		c	Stands to be mounted
		d	Off feed
148	Which is the main luteotropic hormone in mammals?	a	Prolactin
		b	Follicle stimulating hormone
		c	Luteinizing hormone
		d	Gonadotropin releasing hormone
149	On a B-mode ultrasound, image of a bone will be_____.	a	Yellow
		b	Bright
		c	Blue
		d	None of the above
150	Which of the following is applied for recording of movements of a female in heat?	a	Urimeter
		b	Pedometer
		c	Pelvi-meter
		d	Glucometer

Key MCQs Section A: Theriogenology

No.	Answer	No.	Answer	No.	Answer
1	D	51	D	101	A
2	B	52	C	102	A
3	D	53	D	103	A
4	B	54	B	104	A
5	D	55	B	105	A
6	B	56	B	106	A
7	C	57	B	107	A
8	C	58	C	108	A
9	A	59	A	109	A
10	A	60	D	110	A
11	C	61	D	111	B
12	A	62	B	112	C
13	A	63	D	113	A
14	A	64	A	114	D
15	B	65	B	115	C
16	B	66	B	116	D
17	A	67	B	117	A
18	D	68	A	118	D
19	D	69	C	119	C
20	A	70	A	120	C
21	A	71	A	121	C
22	B	72	A	122	B
23	B	73	B	123	D
24	C	74	D	124	D
25	A	75	D	125	B
26	B	76	D	126	B
27	B	77	B	127	A
28	C	78	B	128	C
29	B	79	C	129	A
30	A	80	A	130	A
31	D	81	B	131	D
32	A	82	C	132	D
33	A	83	A	133	A
34	A	84	D	134	C
35	B	85	B	135	C
36	B	86	B	136	A
37	D	87	D	137	A
38	C	88	D	138	C
39	B	89	C	139	A
40	D	90	B	140	C
41	B	91	D	141	B
42	A	92	A	142	C
43	A	93	B	143	B
44	D	94	A	144	A
45	D	95	B	145	C
46	C	96	B	146	A
47	A	97	C	147	C
48	D	98	C	148	C
49	B	99	B	149	B
50	D	100	B	150	B

MCQs Section B: Theriogenology / Animal Reproduction

No.	Question	Choice	Answer
1	Temperature of cow suffering from milk fever is	a	96°F
		b	104°F
		c	107°F
		d	110°F
2	The pulse rate in goat is taken from the arteries:	a	Jugular and maxillary
		b	Maxillary & coccygeal
		c	Coccygeal & Jugular
		d	Pulmonary & Jugular
		e	None of these
3	Foot and mouth in cattle is due to infection by:	a	Bacteria
		b	Virus
		c	Parasite
		d	Fungus
		e	None of these
4	Average range of bovine oestrous cycle is:	a	21 days
		b	18 Hours
		c	281 days
		d	30 days
		e	None of these
5	What is the heat period in buffalo?	a	2 to 8 hours
		b	4 days
		c	8 to 12 days
		d	12 to 34 days
		e	None of these
6	Udder secretion immediately after calving is called:	a	First milk
		b	Special milk
		c	Colostrum
		d	Calf starter
		e	None of these
7	Scrotal temperature of a bull for spermatogenesis compared with body temperature is:	a	Less
		b	Indefinite
		c	More
		d	Equal
		e	None of these
8	Dry matter required by cow of 400 kg body weight should be (per day)	a	10 kg
		b	20 kg
		c	2.5 kg
		d	0.5 kg
		e	None of these
9	Pica is caused due to the deficiency of:	a	Vitamin B ₁₂
		b	Protein
		c	Phosphorus
		d	Cystine
		e	None of these
10	Best method of milking is:	a	Suckling
		b	Knuckling
		c	Full hand milking
		d	Stripping
		e	None of these
11	Name the disease where carcass must be pitted with lime:	a	Anthrax
		b	Black quarter
		c	Tuberculosis
		d	Malaria
		e	None of the above

12	A teaser bull is maintained to:	a	Keep herd moving
		b	Detect the animal in heat
		c	Protect weak animals
		d	Inseminate cow
		e	None of the above
13	Total solid percentage of cow milk is approximately:	a	13
		b	25
		c	0.5
		d	None of these
14	Total solid percentage of buffalo milk is approximately:	a	13
		b	25
		c	0.5
		d	17
		e	None of these
15	Mark the time of insemination of a cow in heat:	a	At the onset of heat
		b	Mid of estrus
		c	Between mid to late of heat
		d	Between late to end of heat
		e	None of these
16	Mark the average lactation milk yield of Sahiwal cow.	a	1100 kg
		b	1400 kg
		c	1800 kg
		d	2000 kg
		e	None of these
17	Gestation period in case of buffalo is of:	a	282 days
		b	151 days
		c	310 days
		d	335 days
		e	None of these
18	Addition of water in milk will:	a	Increase specific gravity
		b	Decrease specific gravity
		c	Increase total solids
		d	No change in specific gravity
		e	None of these
19	Flushing can increase the lamb crop by	a	50%
		b	2%
		c	30%
		d	10-20%
20	Small ruminant contribution towards total meat production of the country is	a	10%
		b	20%
		c	33%
		d	50%
21	Which one is the fat tail breed of sheep?	a	Lohi
		b	Salt Range
		c	Sipli
		d	Kajli
22	Which one is the Kharif fodder?	a	Barseem
		b	Oats
		c	Barley
		d	Sorghum
23	The most killer disease of sheep and goat is	a	H.S
		b	Foot & Mouth
		c	Rinderpest
		d	Enterotoxemia
24	Vaccination in livestock is mostly done by	a	Orally
		b	Intramuscular injection
		c	Intrauterine injection
		d	Subcutaneous injection

25	The total solids %age in goat colostrum is	a	10%
		b	40%
		c	15%
		d	20%
26	Marbling in meat is due to deposition of	a	Subcutaneous fat
		b	Intramuscular fat
		c	Intramuscular fat
		d	None of these
27	Chevon is the meat of	a	Cattle
		b	Camel
		c	Deer
		d	Goat
28	Mohair is the fleece of	a	Beetal goat
		b	Sheep
		c	Camel
		d	Angora goat
29	If cow gets excited or disturbed at milking time the "Hold-up" of milk occurs, it is due to release of:	a	oxytocin
		b	progesterone
		c	renine
		d	Adrenalin
		e	None of these
30	A cow can best be judged when she:	a	is dry
		b	has just calved
		c	is in full milk production
		d	5 years old
		e	None of these
31	The udder of good dairy cow should:	a	be long and narrow
		b	be wide and extend well up behind
		c	round, smooth and hard
		d	pendulous
		e	None of these
32	Yellow colour of cow milk is due to :	a	Riboflavin
		b	Carotene
		c	Casein
		d	Lactose
33	Which part of stomach is fully developed in a sucking calf?	a	Reticulum
		b	Rumen
		c	Omasum
		d	Abomasum
34	The maximum lactose content is found in the milk of:	a	Cow
		b	Buffalo
		c	Goat
		d	Woman
35	Mastitis in cattle is usually due to:	a	bacteria and viruses
		b	viruses and worm
		c	fungi and dry milking
		d	worms
36	A feed high in energy or protein, low in fiber and highly digestible is	a	Roughage
		b	Concentrate
		c	Silage
		d	Hay
37	The average lactation period of milch goats in Pakistan on average it is	a	120 days
		b	350 days
		c	400 days
		d	305 days

38	The standard lactation period of milch cattle is	a	305 days
		b	320 days
		c	250 days
		d	150 days
39	Name the most common disease transmitted to human through cow's milk:	a	Smallpox
		b	Malaria
		c	Tuberculosis
		d	Milk fever
40	Red Sindhi is a:	a	Draft breed
		b	Milch breed
		c	Dual purpose breed
		d	None of them
41	Mark the age of marking a calf for identification.	a	Ist day of birth
		b	One week age
		c	2 weeks age
		d	3 weeks age
		e	None of these
42	Mark the total number of all temporary teeth in both jaws of a cow.	a	10
		b	20
		c	32
		d	50
		e	Non of these
43	Mark the optimum age for castration of male calves by bloodless castration method.	a	2 months
		b	2 to 3 months
		c	3 to 4 months
		d	4 to 6 months
		e	None of these
44	Castration in female calves is called:	a	Sterilization
		b	teaser
		c	vasectomization
		d	spaying
		e	None of these
45	Approx. age of sexual maturity of buffalo bull is:	a	15 months
		b	18 months
		c	20 months
		d	22 months
		e	None of these
46	Mark the optimum dry matter %age in green maize for silage making:	a	10-20
		b	20-30
		c	30-40
		d	40-50
		e	None of these
47	Mark the pH of good silage:	a	3.5-4.2
		b	4.2-4.5
		c	4.5-4.8
		d	Above 4.8
		e	None of these
48	Mark the max. moisture in fodder stored as hay:	a	18 %
		b	25
		c	30
		d	40
		e	None of these
49	One livestock unit is equal to body weight of:	a	300 kg
		b	400 kg
		c	500 kg
		d	600 kg
		e	None of these

50	Under hand method of milking good milker at a stretch can efficiently milk	a	8 cows
		b	12 cows
		c	18 cows
		d	22 cows
		e	None of these
51	Which 'hormone' causes milk ejection?	a	Estrogen
		b	Oxytocin
		c	Thyroxin
		d	Parathormone.
52	In a mixed farm, the minimum contribution to total income from animals should be:	a	50%
		b	40%
		c	20%
		d	10%
53	What is the number of pairs of chromosome in goat?	a	30
		b	27
		c	23
		d	21
54	What is the best basis for selection of bull calves for breeding?	a	Birth weight of male
		b	Body conformation
		c	Dam's milk yield
		d	None of above
55	Mule is an example of:	a	Close breeding
		b	Line breeding
		c	Hybridization
		d	Out crossing
56	Which one of the following correctly represents the thumb rule for feeding of buffaloes?	a	One kilogram of concentrate for each half litre of milk
		b	One kilogram of concentrates for each litre of milk
		c	One kilogram of concentrate for each three litres of milk
		d	One kilogram of concentrates for each two and half litres of milk.
57	Which one of the following should not be fed urea?	a	Bull
		b	Suckling calves
		c	Heifer
		d	Cow
58	Name the organ where microbial digestion in non-ruminant animals occurs:	a	Stomach
		b	Small intestine
		c	Large intestine
		d	None of the above
59	Cereal grains by products are:	a	Rich in Ca
		b	Rich in P
		c	Low in P and rich in Ca
		d	Rich in P and low in Ca.
60	How much milk should be fed per day to a calf during second week?	a	Half body weight
		b	¼ body weight
		c	1/8 body weight
		d	1/10 body weight
61	How many crossbred cows can be maintained on the green fodder available from one hectare of land?	a	Three
		b	Five
		c	Seven
		d	Ten
62	Thick purulent discharge from the vagina of cow indicates:	a	Uterine infections
		b	Heat cycle
		c	Mastitis
		d	Vaginitis.

63	For getting advantage from the male and female genotypes, which practice should be adopted?	a	Embryo transfer
		b	Artificial insemination
		c	Synchronisation of estrus
		d	Natural mating
64	Gestation period of goat is:	a	307 days
		b	145 days
		c	270 days
		d	60 days
65	Medicines which check the growth of micro-organisms but do not kill are known as:	a	Antibiotic
		b	Antiseptic
		c	Purgative
		d	Anthelmentic.
66	The duration of passive acquired immunity is:	a	10-20 days
		b	20-30 days
		c	30-40 days
		d	40-50 days
67	Indicate the period during which the intestinal mucosa of the new born animal is able to absorb immunoglobulin of colostrums:	a	upto few hours after birth
		b	upto 48 hours after birth
		c	upto 96 hours after birth
		d	upto 144 hours after birth
68	The most suitable time for vaccination against H.S is:	a	October
		b	December
		c	Just before monsoon
		d	February
69	In which disease swelling in the neck and throat region is noticed?	a	Rinderpest
		b	Anthrax
		c	Bloat
		d	Haemorrhagic septicaemia.
70	Anti-foaming agents are used in the treatment of:	a	Impaction of rumen
		b	Primary ruminal tympany
		c	Secondary ruminal tympany
		d	None of the above
71	What is the casein percentage in milk of Sahiwal cow?	a	1.55
		b	2.55
		c	3.55
		d	4.55
72	Which is the unit for measuring the viscosity of milk?	a	Allbumin
		b	Globulin
		c	Casein
		d	Alfa- Globulin
73	The milk fat percentage is highest in which of the following animals?	a	Mare
		b	Buffalo
		c	Goat
		d	Cow
74	Which constituent affects freezing point of milk?	a	Fat
		b	Protein
		c	Lactose
		d	None of the above
75	What is the Legal Standard for S. N. F % of buffalo milk?	a	8.0
		b	8.5
		c	9.0
		d	9.5
76	At what temperature the Gerber Butyrometer should be kept in hot water bath for determination of milk fat?	a	50
		b	65
		c	70
		d	75

77	Indicate the nitrogenous substance in milk:	a	Lactose
		b	Uric acid
		c	Cholesterol
		d	Carotene
78	In which portion of milk from udder bacteria content is highest?	a	Secretary phase
		b	Fore milk
		c	Mid milk
		d	Stripping
79	What is the function of milk veins?	a	To carry milk from different quarter of udder
		b	To supply blood from heart to udder
		c	To carry blood from udder towards the heart
		d	None of the above
80	Mark the desirable gain per day of healthy growing calf:	a	200
		b	300
		c	400
		d	500
		e	None of these
81	Water percentage of cow milk is approximately:	a	87
		b	13
		c	75
		d	50
		e	None of these
82	Mark the heat period of a healthy goat:	a	21 days
		b	22 hours
		c	16 hours
		d	38 hours
		e	None of these
83	Mark the age at first calving of a crossbred heifer	a	20-24 months
		b	24-30 months
		c	36-40 months
		d	3-4 years
		e	None of these
84	Mark the best place of insemination of a buffalo in heat	a	Vulva
		b	Vagina
		c	Cervix
		d	Dioestrus
		e	None of these
85	Central pair of incisor in cattle start wearing off at:	a	5 to 6 years
		b	6 to 7 years
		c	7 to 8 years
		d	8 to 9 years
		e	None of these
86	Mark the normal pulse rate per minute of a bullock:	a	60-70
		b	42-60
		c	98.6
		d	100
		e	None of these
87	Wether is the castrated animal of:	a	Cow
		b	Buffalo
		c	Sheep
		d	Goat
		e	None of these

88	Milking of cow yielding 15 kg milk/day should be completed within:	a	7 minutes
		b	10 minutes
		c	12 minutes
		d	15 minutes
		e	None of these
89	Mark the temperature suitable for normal spermatogenesis in bull:	a	36.6 C
		b	39 F
		c	42.6 F
		d	52.6 C
		e	None of these
90	A vasectomized male is called:	a	Streer
		b	Teaser
		c	Stage
		d	Bullock
		e	None of these
91	Which of the salt in mineral mix of cow prevents goiter:	a	Cobalt chloride
		b	Iron Sulphate
		c	Pot. Iodide
		d	Sodium chloride
		e	None of these
92	Best method of milking of cow is by:	a	Wet hand with water
		b	Dry hand
		c	Wet hand with milk froth
		d	Wet hand with oil
		e	None of these
93	Best method of recording milk for true picture is to record:	a	Milk daily
		b	Milk weekly
		c	Certain days in a week
		d	Milk and feed weekly
		e	None of these
94	Dry matter per day needed by a buffalo of 500 kg body wt. should be:	a	12.5 kg
		b	15 kg
		c	20 kg
		d	25 kg
		e	None of these
95	For every kg of milk produced the water needed by the cow is:	a	1 to 1.5
		b	2 to 2.5
		c	3 to 3.5
		d	4 to 4.5
		e	None of these
96	Width of a double row system (tail to tail barn) is:	a	10 m
		b	11.5 m
		c	12.5 m
		d	15.4 m
		e	None of these
97	A double row dairy shed of 24.6 m x 11.54 m (L x W) can house cows	a	20
		b	30
		c	40
		d	50
		e	None of these
98	A constituent found in milk and blood both is:	a	Globulin
		b	Casein
		c	Albumen
		d	Minerals
		e	None of these

99	Parturient paresis can be prevented by feeding a diet prepartum:	a	High in calcium
		b	High in phosphorus and low in calcium
		c	High in calcium and low in phosphorus
		d	More salt in diet
100	Heamoglobinuria in buffaloes can be treated more effectively by:	a	Intravenous calcium
		b	Sodium acid phosphate
		c	Antifibrinolytic drugs
		d	Dextrose saline
101	H. S. occurs in the severe form in:	a	Cattle and buffalo
		b	Horse and mules
		c	Dogs and cats
		d	Pigs and rodents.
102	In domestic animals the fertilized egg reaches the uterus:	a	Immediately
		b	1 to 2 days after fertilization
		c	3 to 5 days after fertilization
		d	6 to 8 days after fertilization
103	Infection transmitted to human through milk is:	a	Salmonella
		b	Lesteria
		c	Clostridium
		d	Both A and B
104	The thermophillic bacteria in raw milk are:	a	Bacillus
		b	lactobacillus
		c	Staphylococcus
		d	None of these
105	The protein content of Mutton is:	a	18.5 %
		b	23.0 %
		c	21.4%
		d	24.0%
106	The fertile life of ovulated bovine eggs is:	a	6 to 12 hours
		b	20 to 40 hours
		c	30 to 48 hours
		d	48 to 72 hours
107	Most of the glycogen in the animal body is present in:	a	Lung
		b	Spleen
		c	Liver
		d	Heart
108	Oxidative rancidity during frozen storage of meat gradually decreases:	a	Odour
		b	Flavor
		c	Taste
		d	Both A and B
109	The earliest pregnancy diagnosis test for bovine is:	a	Rectal Examination
		b	Progesterone Assay
		c	Ultrasound
		d	Radiography
110	Beta carotene is the source of:	a	Vitamin A
		b	Vitamin C
		c	Riboflavin
		d	Niacin
111	Which goat is reared for Mohair?	a	Angora
		b	Teddy
		c	Beetal
		d	Jamnapari
112	Calving interval is the total sum of:	a	Lactation length and gestation length
		b	Gestation length and dry days
		c	Service period and gestation days
		d	Open days and dry days

113	A common but effective disinfectant for water trough of cattle farm is:	a	Phenol
		b	Potassium permanganate
		c	Lime
		d	Washing soda
114	The daily dry matter requirement of cattle per 100 Kg body weight is:	a	5 to 7 kg
		b	3.5 to 4.5 Kg
		c	2 to 2.5 Kg
		d	1 to 1.5 Kg
115	Lucern hay contains;	a	14 to 15 % DCP and 50 % TDN
		b	50 % DCP and 10 % TDN
		c	30% DCP and 31 % TDN
		d	20 % DCP and 30 % TDN
116	Most essential vaccination in goats is:	a	Foot and mouth disease
		b	Pox
		c	Enterotoxemia
		d	Rinderpest
117	Bone meal is a good source of:	a	Carbohydrates
		b	Fat
		c	Phosphrous
		d	Calcium and phosphorus
118	The most appropriate method of dehorning (debudding) calves is:	a	Caustic potash stick
		b	Surgical removal
		c	Electric dehorner
		d	None of these
119	Mark the ovulation time after onset of heat in buffaloes:	a	5 hr
		b	7 hr
		c	10 hr
		d	13 hr
		e	None of these
120	Breeding age (years) of a crossbred heifer having attained 250 kg body weight is	a	1.0-1.5 years
		b	1.5-2.0 years
		c	2.0-2.5 years
		d	2.5-3 years
		e	None of these
121	The control ectoparasites in growing calves spraying may be done with BHC solution of:	a	.2%
		b	.3%
		c	.4%
		d	0.5%
		e	None of these
122	At what age of heifers you would suggest vaccination for Rinderpest, T.B. and FMD	a	3 months
		b	4 months
		c	10 months
		d	6 months
		e	None of these
123	Mark the optimum calving interval for the high level of breeding efficiency in cows:	a	250 days
		b	310 days
		c	395 days
		d	450 days
		e	None of these
124	In general low percentage of infertility occurs in younger animals but increase in case of older cows which is approximately:	a	2-3 %
		b	3-4 %
		c	4-5 %
		d	5-6 %
		e	None of these

125	Mark the optimum dry matter %age in green maize for silage making:	a	10-20
		b	20-30
		c	30-40
		d	40-50
		e	None of these
126	Mark the age of calf when calf starter can be fed in gruel form:	a	3 days
		b	2 weeks
		c	4 weeks
		d	4.36 weeks
		e	None of these
127	Mark the temperature of electrical dehorner used for disbudding:	a	240° C
		b	340° C
		c	440° C
		d	540° C
		e	None of these
128	Mark the air space for cow sufficient to provide enough ventilation:	a	22.5 m ³
		b	33.5 m ³
		c	44.5 m ²
		d	55.6 m ³
		e	None of these
129	Mark the age of crossbred heifer when central pair of permanent incisor erupts.	a	1 year 9 months
		b	2 year 3 months
		c	2 year 9 months
		d	3 year 3 months
		e	None of these
130	Mark the minimum score points of a dairy cow judged on type and appearance by score card method:	a	90-95
		b	85-90
		c	80-85
		d	80-70
		e	60-50
131	Mark the length of tail to tail, face to face barn (including walls) for 40 crossbred cows:	a	14.6 m
		b	24.6 m
		c	34.6 m
		d	48 m
		e	None of these
132	Mark the width (including walls) of a tail to tail barn for keeping 50 crossbred cows:	a	5.54 m
		b	10 m
		c	11.54 m
		d	24.6 m
		e	None of these
133	The best kind of manger is made of cement with corners rounded and is:	a	Continuous
		b	Partitioned
		c	Covered
		d	Open
		e	None of these
134	Mark the size of stanchion stall per cow:	a	1.2 x 1.5 m
		b	1.5 x 1.7 m
		c	1.5 x 2.0 m
		d	2 x 2.5 m
		e	None of these
135	Mark the most important factor to consider in selection of bull:	a	His size
		b	His type
		c	His masculinity
		d	His dam production
		e	None of these

136	The best and only basis for selecting the young untried bull is by:	a	Pedigree
		b	Conformation
		c	Disposition
		d	Breed
		e	None of these

Keys MCQs Section B: Theriogenology / Animal Reproduction

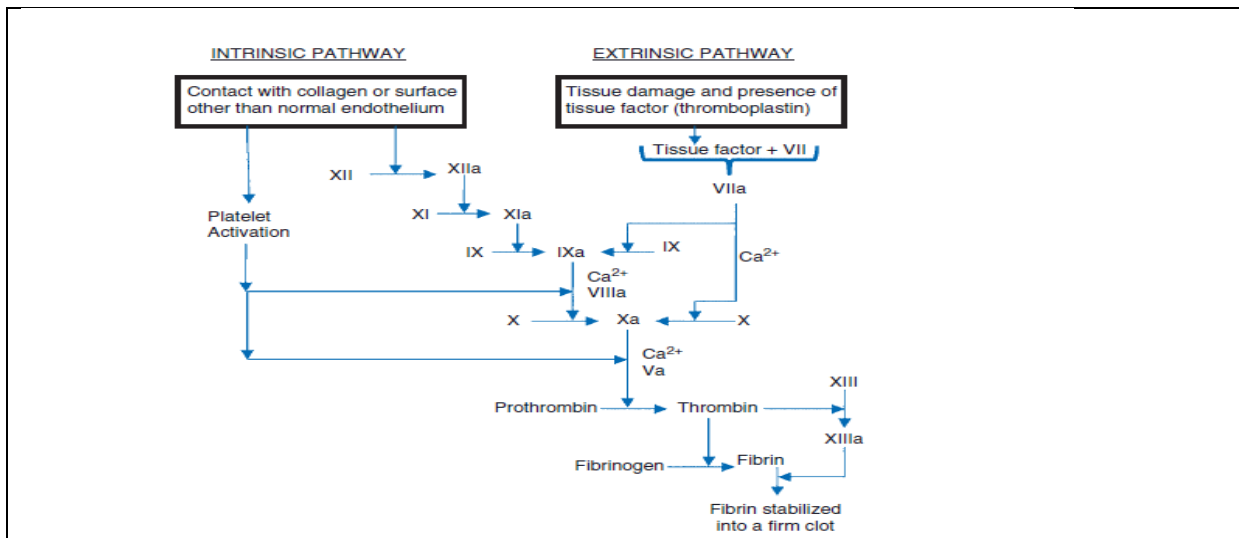
No.	Answer	No.	Answer	No.	Answer
1	A	51	B	101	A
2	A	52	D	102	D
3	B	53	A	103	A
4	A	54	C	104	A
5	E	55	C	105	A
6	C	56	D	106	A
7	A	57	B	107	C
8	A	58	C	108	D
9	C	59	C	109	B
10	C	60	D	110	A
11	A	61	A	111	A
12	B	62	A	112	C
13	A	63	A	113	B
14	D	64	B	114	C
15	C	65	A	115	A
16	C	66	A	116	C
17	C	67	A	117	D
18	B	68	C	118	A
19	D	69	D	119	B
20	C	70	A	120	B
21	B	71	B	121	D
22	D	72	C	122	D
23	D	73	B	123	C
24	D	74	A	124	D
25	D	75	B	125	C
26	B	76	B	126	B
27	D	77	B	127	D
28	D	78	B	128	A
29	D	79	C	129	A
30	C	80	D	130	D
31	B	81	A	131	B
32	B	82	D	132	C
33	D	83	B	133	B
34	D	84	C	134	A
35	A	85	C	135	D
36	B	86	A	136	A
37	A	87	C		
38	A	88	A		
39	C	89	A		
40	B	90	B		
41	A	91	C		
42	B	92	B		
43	D	93	A		
44	D	94	B		
45	D	95	C		
46	C	96	B		
47	B	97	C		
48	A	98	A		
49	C	99	C		
50	B	100	C		

Short Questions with answers
Clinical Medicine and Surgery
1. Describe the signs of aspiration pneumonia in buffaloes?
Typically, the cow has a painful expression and stands with a roached back stance with the neck extended and the head held lowered and walks slowly. The animal does not eat. The rectal temperature is elevated within a range 39.5 to 40.0°C. There is a bilateral mucoid/purulent nasal discharge and the animal coughs frequently. The respiratory rate is elevated with an obvious abdominal component. The cow has halitosis. The milk yield is greatly reduced.
2. Give the protocol for preparation of autovaccine in papillomatosis in bovines?
Five grams active growth removed. Tissue cut into small pieces, homogenized in 50% glycerol-saline solution(30ml/g of tissue) and the mixture filtered through muslin cloth Antibiotics(200,000 IU of Procaine Penicillin and 250mg of Dihydrostreptomycin sulphate) be added to prevent bacterial growth. Formalin 0.4ml per 100ml of filtrate added to inactivate virus and refrigerated for 24hrs. Vaccine (15 ml SC) administered twice at one week interval .
3. Write treatment protocol of actinobacillosis in buffaloes?
Sodium iodide is the treatment of choice in actinobacillosis in ruminants. IV sodium iodide (70 mg/kg of a 10%–20% solution) is given once and then repeated 1 or 2 times at 7- to 10-day intervals. If clinical signs of iodine toxicity develop (including dandruff, diarrhea, anorexia, coughing, and excessive lacrimation), iodine administration should be discontinued. Clinical improvement is often seen within 48 hr of therapy, and treatment is usually successful when only the tongue is involved. Systemic antibacterial agents, such as ceftiofur, penicillin, ampicillin, florfenicol, and tetracyclines may be effective and are primarily recommended in severe cases of actinobacillosis or in cases refractory to sodium iodide therapy. Surgical debulking of lesions, especially if they interfere with breathing, may be useful. This is particularly true when large granulomatous masses that do not respond to medical therapy are present. Prevention of actinobacillosis in ruminants primarily relies on avoidance of coarse, stemmy feedstuffs and pastures full of hard, penetrating plant awns.
4. What is the normal rectal temperature range during morning hours in camels.
Rectal temperature in camels 106 °F (41 °C) during the day.
5. Write medicines used cautiously in cats (Any two)?
Enrofloxacin and Gentamicin
6. Give the treatment protocol of parturient haemoglobinuria in buffaloes?
Day-1: Sodium dihydrogen phosphate 60g.Dissolve it in 300ml distilled water. Add this to 3 liters of Dextrose 10% and give I/v.Sodium dihydrogen phosphate 60g dissolve in 300ml distilled water. Add 10ml xylocaine 2% with adrenaline and give SC. Sodium dihydrogen phosphate 100g dissolve in ½ litre tap water and drench.Inj. Fosfan ,35ml.Progestrone 10ml,Vitamin AD3E or Vitomineral –T powder given PO in the morning.Copper sulphate 2g ,grind it in to fine powder,dissolve in 250 ml each water and vinegar and drench it in evening. Stop berseem feeding and manage the animal on maize or oat fodder. Give a gruel containing candied roses (gulqund ½ kg),glycerine (250 ml, wheat porridge), (jiggery ½ kg) and milk(1 ½ litre).
Day 2, 3 and 4: Repeat the treatment.
Pharmacology:
Describe vaso-reversal phenomena of Dale.
This was first discovered by Dale in 1913, thus is also called Dale vasomotor reversal phenomenon. When adrenaline is administered it acts on both alpha and beta receptors, causing increased temperature, pulse, respiration (TPR) and increased blood pressure (both systolic and diastolic). When alpha blockers are given, they antagonize the effects of alpha receptors, causing decrease in systolic blood pressure. Adrenaline effect is

reversed by administration of alpha blockers. This has no therapeutic importance.
Discuss the pharmacology of ganglion blocking drugs.
Ganglion blocking agents competitively block the action of acetylcholine and similar agonists at nicotinic receptors of both parasympathetic and sympathetic autonomic ganglia. Some members of the group also block the ion channel that is gated by the nicotinic cholinceptor. The ganglion-blocking drugs are important and used in pharmacologic and physiologic research because they can block all autonomic outflow. However, their lack of selectivity confers such a broad range of undesirable effects that they have limited clinical use.
Describe bioavailability, bioequivalence and chemical equivalence.
The rate and extent to which the active ingredient or therapeutic moiety is absorbed from a product and become available at the site of drug action is called bioavailability.
Two or more chemically or pharmaceutically equivalent products produce comparable bioavailability characteristics in any individual when administered in equivalent dosage regimen is known as bioequivalence.
Chemical equivalence indicates that drug products contain the same active compound in the same amount and meet current official standards; however, inactive ingredients in drug products may differ.
Describe resistance, tolerance, tachyphylaxis and drug allergy.
Drug resistance means the loss of the effectiveness of antimicrobial or antitumour drugs.
Tolerance is a reduced effect or increased dose requirement after repeated administration of a drug. It may be due to receptor down-regulation or increased metabolism. e.g. opiates, barbiturates.
Tachyphylaxis is a rapid diminution in responsiveness following administration of a drug.
A drug allergy is an adverse drug reaction that results from a specific immunologic response to a medication.
Discuss idiosyncratic reactions of drugs.
Idiosyncratic drug reactions, also known as type B reactions, are drug reactions that occur rarely and unpredictably amongst the population. They frequently occur with exposure to new drugs, as they have not been fully tested and the full range of possible side-effects have not been discovered; they may also be listed as an adverse drug reaction with a drug, but are extremely rare.
OR
An idiosyncratic reaction is an unusual adverse reaction, sensitivity or resistance to a drug, usually genetically determined. An example is suxamethonium apnoea in pseudocholinesterase deficiency.
Write down mode of action of penicillin, quinolones and chloramphenicol.
Penicillin has an interesting mode of action: it prevents the cross-linking of small peptide chains in peptidoglycan, the main wall polymer of bacteria. Pre-existing cells are unaffected, but all newly produced cells grow abnormally, unable to maintain their wall rigidity, and they are susceptible to osmotic lysis.
Or Penicillin inhibit cell wall synthesis.
The mode of action of quinolones involves interactions with both DNA gyrase, the originally recognised drug target, and topoisomerase IV, a related type II topoisomerase.
Inhibition of protein synthesis, Chloramphenicol irreversibly binds to a receptor site on the 50S subunit of the bacterial ribosome, inhibiting peptidyl transferase.
Discuss the pharmacology of tribrissen also enlist the cardinal principles of sulpha therapy.
In general tribrissen behave as weak organic acids. tribrissen have low water solubility. Tribrissen (Sulphas) are structural analogs of Para Amino Benzoic Acid (PABA) and competitively inhibit an enzymatic step (dihydropterate synthetase) during which PABA is incorporated into synthesis of dihydrofolic acid (folic acid or B2).
Cardinal Principles of Sulpha Therapy includes
1. Should be given as early as possible
2. Parenteral injection should be preferred in critical cases
3. Maintenance doses should be given to maintain effective concentration in blood
4. Plenty of water and urinary alkalizers should be given
5. In anuria and dysuria, stop sulpha therapy
6. Treatment should not be continued for longer than 7-8 days.
7. If no response of sulpha is shown within first 2-3 days, stop giving sulpha
8. Dosing should be continued for 48 hrs even after disappearance of symptoms
Describe mechanism of action of general and local anaesthetics; also enlist different stages of anaesthesia.
General anesthetics modulate the activity of ion channels, the main targets being GABA and NMDA channels and possibly voltage-gated and background channels, thereby directly or indirectly hyperpolarizing neurons in thalamocortical loops, and thereby disrupting coherent oscillatory activity in the cortex.
Local anesthetic drugs act mainly by inhibiting sodium influx through sodium-specific ion channels in the neuronal cell membrane, in particular the so-called voltage-gated sodium channels. When the influx of sodium is interrupted, an action potential cannot arise and signal conduction is inhibited.
Stage I stage of analgesia or disorientation

Stage II stage of excitement or delirium
Stage III stage of surgical anesthesia
Stage IV: Medullary paralysis
Enlist different classes of diuretics.
Carbonic Anhydrase Inhibitors
Loop Diuretics
Thiazides diuretics
Potassium-Sparing Diuretics
Osmotic Diuretics
Write down difference between lotion, cream, emulsion and ointment.
An emulsion is a thermodynamically unstable two-phase system consisting of at least two immiscible liquids, one of which is dispersed in the form of small droplets throughout the other, and an emulsifying agent.
Cream is an emulsion of water and oil or classified as oil in water (o/w) or water in oil (w/o) emulsions.
Ointment is semi-solid preparations of hydrocarbons (petrolatum, mineral oil, paraffins, synthetic hydrocarbons).
Lotion is a loosely used term that nowadays includes any liquid preparation in which inert or active medications are suspended or dissolved.
Write down mode of action of steroids and NSAIDs.
Steroids act as nonselective inhibitors of the enzyme lipoxygenase (LOX) while NSAIDs act as nonselective inhibitors of the enzyme cyclooxygenase (COX), inhibiting both the cyclooxygenase-1 (COX-1) and cyclooxygenase-2 (COX-2) isoenzymes.
Discuss plants sources of drugs.
Alkaloids: Basic nitrogenous substances, which are insoluble in water but form water soluble salts with acids.
Glycosides: various sugars combined with organic structures through an ether like linkage.
Saponins: Non-nitrogenous substances soluble in water and capable of causing foam/froth when shake with water.
Tannins: Non-nitrogenous substances having a characteristic astringent action upon the mucosa by precipitating the proteins.
Resins: Brittle, amorphous compounds formed from the oxidation or polymerization of terpenes, components of volatile oils.
Gums: Polysaccharides secreted by trees and capable of forming thick mucilaginous colloids when mixed with water.
Balsams: Resins containing Benzoic or cinnamon acid.
Describe receptor theory and drug receptor interactions.
Receptor theory is the application of receptor models to explain drug behavior. Postulates of receptor theory includes
Receptors must possess structural and steric specificity.
Receptors are saturable and finite (limited number of binding sites)
Receptors must possess high affinity for its endogenous ligand at physiological concentrations.
Once the endogenous ligand binds to the receptor, some early recognizable chemical event must occur.
The drug- receptor reaction is essentially an exchange of the hydrogen bond between a drug molecule, surrounding water, and the receptor site.
Describe the mechanism of action of macrolides.
The mechanism of action of macrolides is inhibition of bacterial protein biosynthesis, and they are thought to do this by preventing peptidyltransferase from adding the growing peptide attached to tRNA to the next amino acid.
Macrolide antibiotics do so by binding reversibly to the P site on the subunit 50S of the bacterial ribosome
Enlist different classes of purgatives.
Bulk-forming agents
Emollient agents (stool softeners)
Hyperosmotic agents
Stimulant agents
Saline laxative agents
Lubricant agents
Physiology

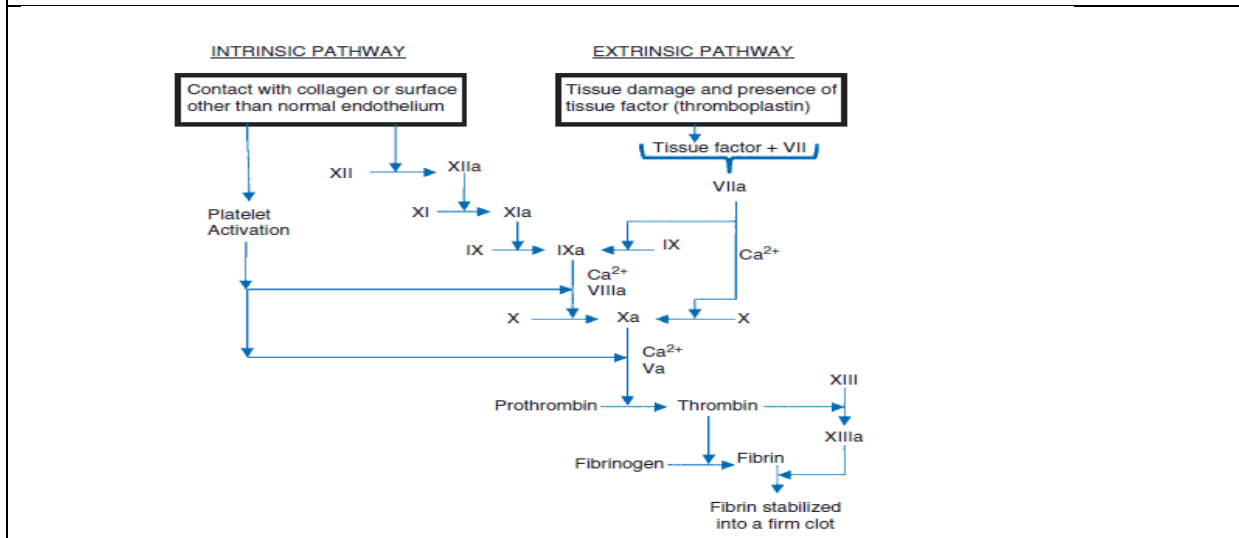
What is passive immunity?
It is temporary immunity achieved by transfusion of “antibodies or sensitized T-cells”
Examples are ATS and colostrum.
What is role of macrophages?
Macrophages are mature monocytes present in different tissues and are given name according to their locations,
They accumulate at the site of lesions in inflammatory conditions and also help in immune response.
Their main function is to be actively phagocytic and they act as scavenger ingesting bacteria, foreign bodies, damaged host cell, tumor cells and other debris.
What is hemolytic anemia?
In these types of anemia RBCs rupture with release of Hb”
Types:
Hereditary Spherocytosis
Sickle Cell Anemia
Thalassemia
Erythroblastosis Fetalis
What is sickle cell anemia & pernicious anemia?
In sickle cell anemia an abnormal variety of hemoglobin (Hb S) is present in blood. When this Hb exposed to low concentration of oxygen , it precipitates into long crystals inside RBC. The precipitated Hb damage cell membrane and give red cells a sickle appearance, which are highly fragile leading to serious anemia.
When Intrinsic factor is deficient, Vit. B ₁₂ can't be absorbed leading to Megaloblastic anemia, particularly called pernicious anemia
What are the different types of T-lymphocytes?
There are three main types of T-lymphocytes
Helper T-cells
Cytotoxic cells
Suppresser T- cells
What is the MOA of antibodies?
Antibodies act mainly in two different ways:
By direct attack on invader.
Agglutination
Precipitation
Lysis
By activation of complement system
Classical pathway
Alternate pathway
Discuss intrinsic clotting pathway?



What is hemophilia?

Hemophilia is bleeding disorder resulting from deficiency of factor 8. It can only occur in males because of a single X-gene in males while females never have hemophilia because at least one of their X-chromosomes is healthy.

Discuss extrinsic clotting pathway?



What is dyspnea?

Difficulty in breathing.

What are respiratory volumes?

Respiratory volumes measure the amount of air for a specific function.

The respiratory volumes that can be measured using a spirometer include

Tidal volume (TV).

Expiratory reserve volume (ERV).

Inspiratory reserve volume (IRV).

Residual volume

What is dead space?

Dead space comprises of those areas of respiratory tract where gases are present but do not take part in gas exchange.

What are respiratory capacities?
Respiratory capacities are the sum of two or more volumes.
The lung capacities that can be calculated include
Vital capacity (ERV+TV+IRV),
Inspiratory capacity (TV+IRV),
Functional residual capacity (ERV+RV), and
Total lung capacity (RV+ERV+TV+IRV)
Enlist different forms of CO₂ transport in blood?
Carbonic acid
Bicarbonate ion
Carbaminohemoglobin
What are the different enzymes present in gastric juice?
Pepsinogen
Gastic lipase
Gastic amylase
Gelatinase
What are the different enzymes present in pancreatic juice?
Proteolytic enzymes
Trypsin
Chymotrypsin
Carboxypolypeptidase
Ribonuclease
Deoxyribonuclease
Carbohydrate splitting enzymes
Pancreatic amylase
Lipolytic enzymes
Pancreatic lipase
Cholesterol esterase
Phospholipase
What is the composition of bile?
water
bile salts
bilirubin
cholesterol
fatty acid
lecithin
sodium, potassium, calcium, chloride, bicarbonate.
What is Erythroblastosis detalis ?
This type of anemia occurs in new borns because fetus is Rh positive while mother is Rh negative. So Rh positive red cells of the fetus are attacked by antibodies of Rh negative mother. These antibodies make red cells fragile and cause the child to be born with serious anemia,
What is Heat Rigor ?
The degree of elevated temperature at which coagulation of protoplasm occurs with death of the cell.
How lymph is forms in the body? Also differentiate between compositions of Blood & Lymph?
Lymph is the fluid that circulates throughout the lymphatic system. The lymph is formed when the interstitial fluid (the fluid which lies in the interstices of all body tissues) is collected through lymph capillaries. It is then transported through lymph vessels to lymph nodes before emptying ultimately into the right or the left subclavian vein, where it mixes back with blood.

Lymph has a composition comparable to that of blood plasma, but it may differ slightly. Lymph contains white blood cells. In particular the lymph that leaves a lymph node is richer in lymphocytes.
What are different factors that affect GFR (glomerular filtration rate) ?
Increasing factors
Increased renal blood flow
Increased glomerular pressure
Increased blood pressure
Efferent arteriolar constriction
Decreasing factors
Increased plasma colloid osmotic pressure
Increased Bowman capsule pressure
Afferent arteriolar constriction
Sympathetic stimulation, causing afferent arteriolar constriction.
What are different means by which pumping of heart is regulated?
The pumping of heart is regulated by means of:
Intrinsic regulation
Frank-Starling mechanism (within physiological limit, heart pumps all the blood that comes to it without causing excess damming of blood into veins)
Control by autonomic nerves
Sympathetic system (increase heart rate and strength, thereby increasing the pumping ability. It can increase pumping up to 2-3 fold).
Parasympathetic system (decrease heart rate, strength, thereby decreasing the pumping ability. It reduces ventricular pumping by 50 percent)
Name major and minor salivary glands?
Parotid gland (serous type)
Submandibular and sublingual gland (serous mucous)
Small mucous gland (mucous type)
What are different types of hormones? Write respective type of gland which produces a particular type of hormone.
Types of hormone:
local hormones e.g. Ach, secretin, CCK
general hormones e.g. epinephrine and nor epinephrine, growth hormone, thyroid hormone
endocrine glands of body
Pituitary gland
Thyroid gland
Parathyroid gland
Thymus gland
Adrenal gland
Pancreas
Ovaries
Testes
Placenta
What is the role of S.A node in conductive system of heart?
It is a small flattened, ellipsoid strip of muscle located on the supralateral wall of right atrium and controls the heart beat and maintains it in rhythm. Therefore called pacemaker of heart.
The resting membrane potential of sinus node is -55 mV to -60 mV. It has an inherent tendency to sodium ion leakiness. This sodium ion influx raises the membrane potential to threshold value of about -40 mV causing action potential. At the end of action potential positive potassium charges go outside causing temporary hyperpolarization. In the next few seconds K ⁺ channels close. As a result of this normal resting membrane potential is achieved and SA node ready for another impulse.
Differentiate between Arteries, Veins & Capillaries?

Arteries:

Transport blood away from the heart

Carry blood under high pressure

Are elastic, muscular, and thick-walled

Dilate and constrict, which creates a pulse

Appear bright red due to high oxygen levels

Veins:

Carry deoxygenated blood to the heart

Contain one-way valves

Store about 65% to 70% of the body's total blood volume

Blood appears darker in color

Blood flows in a slow manner

Capillaries:

Are the smallest blood vessels

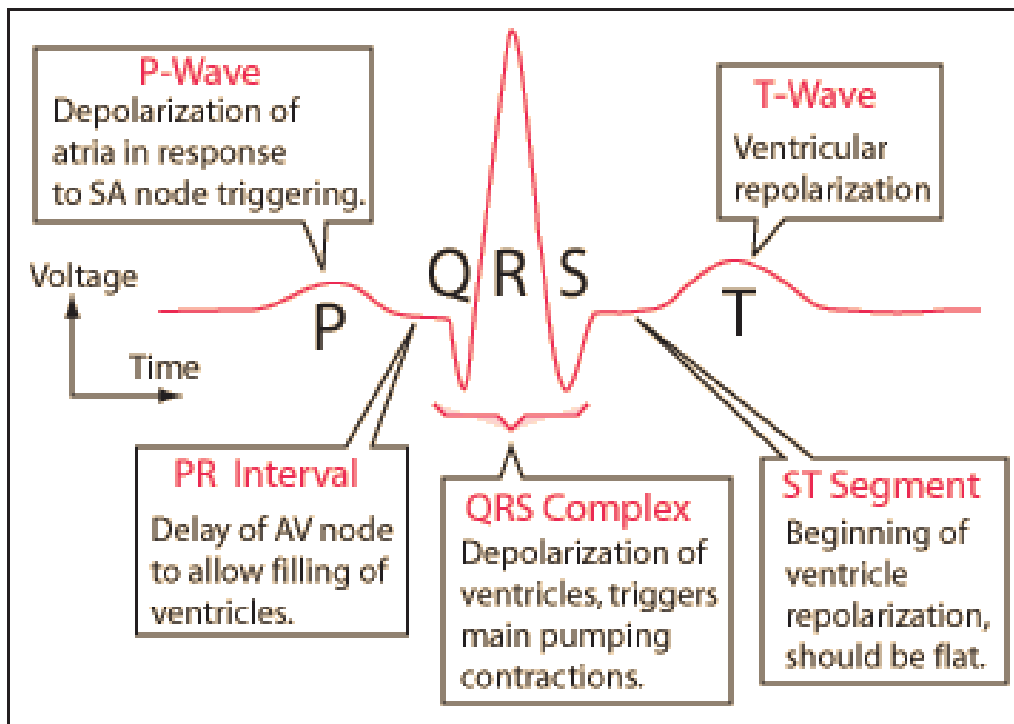
Provide a link from arterioles to venules

All gas exchange occurs at this level

Walls are very thin to allow for gas and nutrient exchange

Discuss briefly normal Components of ECG ?

Graphic recording of changes in potential generated by transmission of cardiac impulse through the heart'

**In which form iron is present in hemoglobin?**

Iron is required for Hb synthesis and it is present in Fe^{++} form(ferrous form)

What are Endocrine, paracrine, autocrine, neuroendocrine signaling ? Differentiate with Examples.

Endocrine signalling uses chemicals called hormones to send messages throughout the body. The hormones are released from the cell into the bloodstream and can travel around the entire body.

e.g production of FSH and LH from anterior pituitary secreted into blood stream and act on target(ovary) that is far away from its site of production.

Neuroendocrine cells are cells that receive neuronal input (neurotransmitters released by nerve cells or neurosecretory cells) and, as a consequence of this input, release message molecules (hormones) to the blood. In this way they bring about an integration between the nervous system and the endocrine system, a process known as neuroendocrine integration.

An example of a neuroendocrine cell is a cell of the adrenal medulla (innermost part of the adrenal gland), which releases adrenaline to the blood. The adrenal medullary cells are controlled by the sympathetic division of the autonomic nervous system
Paracrine signaling is a form of cell-cell communication in which a cell produces a signal to induce changes in nearby cells, altering the behavior or differentiation of those cells.
E.g. production of Prostaglandins and its action is paracrine.
Autocrine signaling is a form of cell signaling in which a cell secretes a hormone or chemical messenger (called the autocrine agent) that binds to autocrine receptors on that same cell, leading to changes in the cell.
Cancerous cell action is autocrine.
What are different VFAs produced in rumen and their fate in blood ?
Acetic acid
Butyric acid
Propionic acid
50-60% of VFAs produced is acetic acid. It predominates on a high roughage diet and is a precursor for mammalian milk fat. Some is also used for muscle metabolism and body fat.
12-18% of VFAs produced is propionic acid. It predominates on a high concentrate diet and provides energy via the conversion of blood glucose in the liver
18-20% of VFAs produced is butyric acid. Comes out from rumen as B-hydroxybutyric acid and it is oxidized by many tissue to produce energy.
Pathology
The most characteristic lesions seen in buffaloes died due to HS are?
widespread hemorrhages, edema and hyperemia. Subcutaneous edema is usually present in the submandibular region and neck, sometimes extending to the brisket. The lymph nodes may be enlarged, and the thoracic and abdominal cavities and pericardial sac often contain blood-tinged fluid. Petechiae are frequently found on many organs, especially on the serosal surface, throughout the body.
The most significant findings at postmortem examination in animals died due to contagious bovine pleuropneumonia are?
The thoracic cavity may contain up to 10 L of clear yellow or turbid fluid mixed with fibrin flakes, and the organs in the thorax are often covered by thick deposits of fibrin. The disease is largely unilateral, with more than 80%–90% of cases affecting only one lung. The affected portion is enlarged and solid. On section of the lung, the typical marbled appearance of pleuropneumonia is evident.
Pulpy kidney disease in lambs, the postmortem findings?
Swollen and oedematous lungs, swollen, congested, soft and pulpy kidneys, haemorrhages (petechial and echymotic) on most organs, full urinary bladder, urine with high glucose, the intestine appear congested, thin and may contain haemorrhages with segmental gas distention, pericardial effusions and effusions in abdominal and thoracic cavity.
Postmortem findings with gross and microscopic changes in cattle died due to paratuberculosis?
the carcass may be thin or emaciated. Dependent edema can sometimes be seen, and fluid may be found in the body cavities. The characteristic lesion is a thickened, often corrugated, wall in the distal small intestine. In more advanced cases, the lesions can extend from the duodenum to the rectum. The mesenteric lymph nodes and other regional nodes are often enlarged and edematous. Histologically, the lesions are characterized by diffuse granulomatous enteritis, with the accumulation of epithelioid macrophages and giant cells in the intestinal mucosa and submucosa. Acid-fast organisms may be found inside macrophages.
In dysplasia, the microscopic changes are:
There is cell atypia and disorderliness.
Loss of uniformity of the individual cells and loss of architectural orientation.

Cellular atypia is characterized by pleomorphism and hyperchromasia
Mitotic figures are seen in abundant cells.
The gross changes in necrosis are:
Lighter colour (coagulation of proteins, reductio of blood supply)
May be swollen area or depressed
May be softer to touch
Loss of Strength
Red Zone of Congestion (2-3 days old)
Coagulated, Creamy liquid or Dry crumbly
In hypoxaemia due to too little oxygen in the blood, the situation may be that:
There is too little oxygen in the air
Failure to properly ventilate the lungs
Failure of the lungs to properly oxygenate the blood
Failure of the heart to pump enough blood through the lungs
Tremendously increased dead space (i.e., pulmonary thromboembolus)
The oxygen independent mechanism in phagocytosis and Microbicidal Mechanism by defence cells includes:
The lysozyme attacks bacterial cell walls of especially gramnegative bacteria (digest muramic Acid in membrane)
Lactoferrin is microbicidal at acid pH
Cathepsin G (a protease) is antibacterial activity against gram negative and gram positive bacteria and some of the fungi.
Phagocytin can also lyse the bacterial cell membranes,
defensins have broad spectrum activity and kills gram positive, gram negative bacteria, some of the fungi and certain enveloped viruses.
What factors lead to reduced erythropoiesis.
Ans.
1. Anemia due to chronic disorders
Chronic inflammation
Neoplasia
2. Cytotoxic bone marrow damage
Cytotoxic drugs
Estrogen
Furazolidone
Phenylbutazone
Radiation
3. Lack of erythropoiten
Chronic renal disease
Hypoadrencorticism
Hypothyroidism
4. Immune mediated anemia
Pure red cell aplasia
5. Infection
Ehrlichia
Feline leukemia virus
Feline pan leucopenia virus
Parvovirus
Trichostrongyloids
6. Myelopathies

Lymphocytic leukemia
Metastatic neoplasia
Myeloproliferative disorder
Osteopetrosis
In which situations Schistocytes appear in blood.
Hemolytic anemia
Thrombosis of small blood vessels
Splenic neoplasm
What is toxic granulation of neutrophils.
Neutrophils contain dark purple and coarser granules than normal. At times the cytoplasm is basophilic and vacuolated. They are seen in severe infection and other toxic states that interfere with normal cytoplasm maturation and thus inhibit normal transformation of granules.
Name and principle of detection of blood in urine, name the diseases in which hematuria is observed in animals.
Benzidine Test
Principle: Oxygen is liberated from hydrogen peroxide when it reacts with peroxidase in blood, which is indicated by indicator green or blue in colour.
Diseases
Anthrax,
Leptospirosis
Canine Hepatitis
Dioctophyma Renale infection
Institute of Microbiology
Draw sketch diagram of observational epidemiological studies
A) Descriptive epidemiological studies, longitudinal (retrospective & prospective) & vertical epidemiological studies. B) Analytical epidemiological studies, it includes; case-control, cohort and cross-sectional epidemiological studies.
What is Veterinary Public Health, enlist its salient components
<u>VPH</u> : sum of all contributions for disease prevention, prevention of zoonotic diseases, prolonging life and promoting physical health in a population. <u>Salient components</u> are; sanitation of environment, control of community infections through vaccination, adaptation of principles of personal hygiene, education of community about diseases, early diagnosis and treatment.
Parasitology
Describe congenital toxoplasmosis
Intracerebral calcification (toxoplasmic encephalitis) – fever, severe headache, convulsions
Chorioretinitis (Ocular toxoplasmosis) – Inflammation of choroid and retina
Hydrocephaly – accumulation of CSF in brain
What is apical complex in apicomplexan parasites?
The sporozoite of apicomplexan parasites possesses distinct structures in an apical complex, which consists of a set of spirally arranged <u>microtubules</u> (known as conoid), a club-shaped secretory body – the <u>residual body</u> , one or more <u>polar rings</u> , and additional slender dense secretory bodies – <u>miconemes</u>
What are various risk factors associated with the occurrence of babesiosis and theileriosis?

(1) The virulence of the particular species of <i>Babesia</i>
(2) The age of the host
(3) The immune status of the host
(4) The level of tick challenge
(5) Stress
What is undulating membrane?
In some Protozoan species, the cell membrane (pellicle) is pulled up to form an undulating membrane. It enhances motility of the parasite in a viscous fluid, such as blood.
What are various locomotory organs in protozoa?
Whip-like tails called flagella (5-10 μm long)
Hair-like structures called cilia (20-30 μm long)
Foot-like structures called pseudopodia (2 μm and thick by 20 μm)
Name any four Genera of superfamily Trichostrongyloidea.
Genera included in this superfamily are <i>Dictyocaulus</i> , <i>Ostertagia</i> , <i>Cooperia</i> , <i>Nematodirus</i> , <i>Haemonchus</i> , <i>Trichostrongylus</i> .
Write a note on effects of ostertagia on its final host.
Ostertagia spp. affect their hosts in several complex interactions involving structural, biochemical, hormonal, nutritional and immunological mechanisms. Following infection with Ostertagia spp. the specialised secretory function and junctional integrity of gastric epithelial cells is lost. The pH of the abomasal contents is elevated and pepsinogen concentration in the plasma increases. There is a concurrent elevation in the concentration of blood gastrin. The effects may be a response to the physical interaction of parasite with epithelial cells, may be mediated through parasite excretory/secretory products, or by neural mechanisms. There may also be interactions between the responses since elevated abomasal pH stimulates secretion of gastrin. Hormonal changes may also have a role in the increased susceptibility of host to parasite during the periparturient period. Prolactin was considered the most likely hormone candidate although there is now a body of evidence to suggest that elevated prolactin concentrations are not solely responsible. Infection with Ostertagia spp. causes a marked inappetence, negative nitrogen balance and reduction in apparent gross energy digestion. The level of nutrition may also affect the response of the host to the parasites and establishment of <i>O. circumcincta</i> is lower in animals on a low plane of nutrition than those on a high plane. Immunity of Ostertagia spp. develops slowly and once established is manifest following challenge by an initial hypersensitivity response, followed by a cell mediated response and then an antibody response. Parasites may fail to establish or may be expelled from immune animals and if they do establish may be stunted with small vulval flaps and lower biotic potential and may become inhibited at the early fourth stage of development.
How <i>Haemonchus contortus</i> can be identified with naked eye?
<i>Haemonchus contortus</i> are known as “Barber pole worm” or “Blood worm”. The worms are large (1.5 to 3.0 cm), easily visible to the naked eye and the female oviduct is visible as a white stripe around the red blood-filled intestine, giving a barber-pole appearance. Eggs are typical of the Trichostrongyloidea Superfamily. The males are smaller, and appear red
Write a short note on the self-cure phenomenon in haemonchosis.
In endemic areas, sometimes FEC in <i>H. contortus</i> infected sheep drops sharply following heavy spells of rain due to expulsion of the adult worm population from the abomasum. This phenomenon is described as the self-cure phenomenon which is due to super infection by large numbers of L3 that are released from feces following the rain which are ingested over a very short period of time. Immunologically, this phenomenon is attributed to the development of immediate or type-I hypersensitivity to the larval antigens mediated by IgE (Mitchell et al., 1983; Smith et al., 1984; Yakoob et al., 1983). The sensitization to worm antigens has already occurred with the current established population of worms and upon subsequent exposure to incoming infection the immediate type of hypersensitivity takes place that leads to expulsion of adult worms (Miller, 1984; Urquhart et al., 1996a)

Explain the Clay pipe stem liver.
A characteristic pipe-shaped fibrosis formed around hepatic portal veins in some cases of long-continued heavy infection with <i>Schistosoma mansoni</i> ; thought to be induced by the presence of large numbers of schistosome eggs in the hepatic tissues. This is also called as “Symmers clay pipestem fibrosis” or “Symmers fibrosis”
A descriptive term for the histologic appearance—portal vein fibrosis with hyaline thickening and tortuosity of vessels—of portal spaces in liver involvement by <i>Schistosoma mansoni</i> and <i>S. mekongi</i> ; schistosomal hepatopathy mimics cirrhosis with hepatosplenomegaly, portal hypertension, secondary hypertension, and variceal bleeding; native architecture is preserved
What are the complications of fasciolosis? write a brief note.
The disease involves a serious infection of the bile ducts whereby the adult flukes in it causes hyperplasia or an abnormal proliferation of cells in the region causing undesirable inflammation and enlargement. The resulting cholangitis (inflammation of bile ducts) and cholecystitis (inflammation of pancreas) may cause an obstruction in the bile ducts inhibiting the flow of the bile. This condition causes permanent damage to the bile ducts of the liver and gall bladder and in rare circumstances has led to cholangiocarcinoma (cancer of the bile ducts).
How you will differentiate between Spastic and Flaccid paralysis?
Flaccid Paralysis
An abnormal condition characterized by the weakening or the loss of muscle tone. It may be caused by disease or by trauma affecting the nerves associated with the involved muscles.
Flaccid paralysis is paralysis or reduced muscle tone without other obvious cause. Flaccid paralysis is caused by diseases or trauma. This condition is due to affected nerves, which are involved in muscle action. Flaccid paralysis can be fatal depending on which muscles are affected. Acute flaccid paralysis can also be caused by other pathogens like enteroviruses. Botulism is caused by a bacterium known as <i>Clostridium botulinum</i> . The main route of its entry is through the digestive tract. Sometimes it may enter through wounds. A toxic substance produced by <i>Clostridium botulinum</i> blocks the release of acetylcholine. Due to this the muscles lose the ability to contract. Curare is a toxin. It is taken from a plant grown in the rainforests of South America. The toxin binds to the acetylcholine molecule which makes it unable to bind to the acetylcholine receptors on the muscle cells. Due to this, the muscles cannot be stimulated.
Spastic Paralysis
An abnormal condition characterized by the involuntary contraction of one or more muscles with associated loss of muscular function. Spastic paralysis is also a form of paralysis which is involved with unusual tightness of the muscles. It changes skeletal muscle performance in muscle tone involving hypertonia. This is a condition that arises when the nerves coordinating the voluntary muscle actions are disabled. During this condition, the nerves controlling muscle movement become hyperirritable. Due to this the skeletal muscles become unable to function in a coordinated manner.
Define Instar?
An instar is a developmental stage of arthropods , such as insects , between each moult (ecdysis) , until sexual maturity is reached. Arthropods must shed the exoskeleton in order to grow or assume a new form. Differences between instars can often be seen in altered body proportions, colors, patterns, or changes in the number of body segments. After moulting, i.e. shedding their exoskeleton, the juvenile arthropods continue in their life cycle until they either pupate or moult again. This period of growth, instar, is fixed. Some arthropods can continue to moult after sexual maturity, but the stages between these subsequent moults are generally not called instars.
Define metamorphosis?
It is process of transformation from an immature form to an adult form in two or more distinct stages. A change in the form and often habits of an animal during normal development after the embryonic stage. <i>Metamorphosis</i> includes, in insects, the transformation of a maggot into an adult fly and a caterpillar into a butterfly and, in amphibians, the changing of a tadpole into a frog.
Enlist any four orders of class arachnida
1-Order Acari (ticks and mites)
2- Araneae (spiders)

3-Scorpions (scorpion spp)
4-Shizomeda (soft-bodied arachnid similar to whip scorpions)
5-Opiliones (spider like insects)
Enlist the pathogens tranmited by tabanus spp?
1-Trypnosomiasis (Dourine)
2-Anthrax
3-filariasis (in mammals)
4-Africon swine Fever
5-Equine infectious Anemia
6-Tularemia (rabbit fever and deer fly fever)
7-Africon horse sickness
8-Anaplomosis