FACULTY OF AGRICULTURAL ENGINEERING & TECHNOLOGY, UAF

MULTIPLE CHOICE QUESTIONS

DEGREE PROGRAM IN AGRICULTURAL ENGINEERING

Q. No.	Question Statement	Ans.
1.	A device used to increase the temperature of the saturated steam without raising its pressure is called_____. a) blow off cock b) fusible plug c) Superheater d) economizer	**c**
2.	The theoretical air supply required per kg of fuel comprising of C = 86%; H_2= 11.75%; O_2= 2.25% is……... a) 8.36 kg b) 13.96 kg c) 19.52 kg d) 24.54 kg	**b**
3.	The amount of heat absorbed to evaporate 1 kg of water from its saturation temperature, without change in temperature is called……. a) Sensible heat of wat b) Latent heat of vaporization c) Enthalpy of steam d) Entropy of steam	**b**
4.	The heat absorbed by one kg of water heating from 0 ^oC to 75 ^oC is…….. a) 250 kJ/kg b) 315 kJ/kg c) 400 kJ/kg d) None of these	**b**
5.	The dryness fraction of steam is equal to……... a) $\frac{m_g}{m_g + m_f}$ b) $\frac{m_f}{m_g + m_f}$ c) $\frac{m_g}{m_f}$ d) $\frac{m_f}{m_g}$ Where; m_g= Mass of dry steam and m_f= Mass of water in suspension.	**a**
6.	When the enthalpy or total heat of steam is h (kJ/kg) and the enthalpy or sensible heat of water is h_{f1} (kJ/kg), then the factor of evaporation is given by…….. a) $\frac{h + h_{f1}}{2257}$ b) $\frac{h \times h_{f1}}{2257}$ c) $\frac{h - h_{f1}}{2257}$	**c**

	d) $\frac{h}{2257 h_{f1}}$	
7.	The latent heat of steam at atmospheric pressure is……. a) 1535 kJ/kg b) 1895 kJ/kg c) 2257 kJ/kg d) 2690 kJ/kg	**c**
8.	The ratio of heat actually used in producing the steam to the heat liberated in the furnace is called…….. a) Equivalent evaporation "from & at 100 ºC" b) Evaporative capacity of a boiler c) Boiler efficiency d) Both a and b	**c**
9.	One kg of carbon monoxide (CO) requires 4/7 kg of oxygen and produces…… a) 11/3 kg of CO_2 b) b) 7/3 kg of CO c) 11/7 kg of CO_2 d) 8/3 kg of CO	**c**
10.	Which one is the physical property of materials……..... a) Ductility b) Conductivity c) Strength d) None of these	**b**
11.	The maximum engineering stress is called…….. a) tensile strength b) fracture stress c) Poisson's ratio d) None of these	**a**
12.	The ratio of stress to strain in the elastic region is known as…… a) Young's modulus b) Ultimate tensile stress c) Poisson's ratio d) All of these	**a**
13.	The energy required to raise the temperature of a unit mass of material by one degree is known as…… a) Thermal expansion b) Thermal conductivity c) Specific heat d) None of these	**c**
14.	The most common example of property improvement of material is……... a) Casting b) Heat treatment c) Machining d) All of these	**b**
15.	Which of these is the surface hardening process……..……. a) Carburizing b) Boronizing c) Induction hardening d) All of these	**d**
16.	…….. is used to describe the restoration of a cold worked or heat treated alloy to its original properties. a) Normalizing b) Annealing c) Austempering	**b**

	d) None of these	
17.	……are the channels that carry the molten metal from the sprue to the mold cavity. a) Runners b) Risers c) gate d) None of these	**a**
18.	The solidification time is a function of the volume of a casting and its …….. a) Surface area b) b) time **c)** c) pressure **d)** d) density	**a**
19.	……..are used to mold the sand mixture into the shape of the casting. a) Chaplets b) Plates c) Patterns d) All of these	**c**
20.	The distance travelled by the tool per unit revolution of the work piece during turning operation is termed as…….. a) Depth of cut b) pitch c) feed d) All of these	**c**
21.	The process used to enlarge the internal diameter of a work piece is called…….. c) Drilling d) b) Reaming c) Boring d) All of these	**c**
22.	During drilling process in drill press, the work piece is clamped in ……. a) Vise b) Fixture c) Jig d) All of these	**d**
23.	The machining operation in which work is fed past a rotating tool with multiple edges is called……. a) Turning b) shaping c) milling d) None of these	**c**
24.	The basic form of peripheral milling in which the cutter width extends beyond the work piece on both sides is called…… a) Peripheral milling b) Face milling c) Slab milling d) Slotting	**c**
25.	When the material is loaded within elastic limit, then the stress is……to strain a) Equal b) Directly proportional c) Inversely proportional d) None of these	**b**
26.	A line shaft rotating at 200 rpm is to transmit 20kW. The torque transmitted by the shaft is……. a) 915 N-m b) 955 N-m c) 970 N-m d) 990 N-m	**b**
27.	A solid shaft running at 400 r.p.m transmits 10kW. The diameter of the shaft is ……if allowable	**c**

	shear stress in the shaft is 40 MPa. a) 15mm b) 25mm c) 35mm d) 45mm	
28.	In the atmosphere, tiny solid or liquid suspended particles of various composition are called……. a. aerosols b. carcinogens c. greenhouse gases d. microbes	**a**
29.	Which of the following processes acts to remove carbon dioxide from the atmosphere? a. lightning b. deforestation c. photosynthesis d. burning fossil fuels	**c**
30.	Which of the following is an air pollutant? ……. …… (a) Nitrogen (b) Carbon dioxide (c) Carbon monoxide (d) Oxygen	**c**
31.	Which of the following on inhalation dissolved in the blood hemoglobin more rapidly than oxygen?..... (a) Sulphur dioxide (b) Carbon mono-oxide (c) Ozone (d) Nitrous oxide	**b**
32.	Smog is……. (a) A natural phenomenon (b) A combination of smoke and fog (c) Is colourless (d) All of the above	**b**
33.	Air pollution from automobiles can be controlled by fitting……. (a) Cyclone separator (b) Electrostatic precipitator (c) Catalytic converter (d) Wet scrubber	**c**
34.	Excess fluoride in drinking water is likely to cause…… (a) Blue baby syndrome (b) Fluorosis (c) Change in taste and odour (d) Intestinal irritation	**b**
35.	Which of the following is a non-point source of water pollution?..... (a) Factories (b) Sewage treatment plants (c) Urban and suburban lands (d) All of the above	**c**
36.	Carbon monoxide is……. (a) caused by ozone depletion (b) (b) a major component of the atmosphere (c) extremely damaging to human blood (d) consumed by plants for photosynthesis	**c**
37.	Lead enters the atmosphere as a particulate pollutant. This is a problem because it……... (a) is a precious metal, and it is being lost to the atmosphere (b) causes central nervous system malfunction in humans (c) can become attached to radon	**b**

	(d) causes excess nutrification of waterways, resulting in eutrophication	
38.	One of the problems that occur as a consequence of CFC pollution is…… (a) increasing skin cancer in humans (b) toxins accumulating in homes (c) damage to human red blood cells (d) eutrophication	**a**
39.	Bacteria and fungal spores can be included ..... (a) contributors to indoor pollutants (b) VOCs and POPs (c) the cause of high pesticide use in the home (d) sources of radon in the home	**a**
40.	Tillage is the practice of……. (a) Modifying the soil state (b) (b) Controlling weed (c) Controlling soil loss (d) Applying soil nutrients	**a**
41.	Function of mould board is to……. (a) Cut the soil (b) Lift the soil (c) Turn the soil (d) Both (b & c)	**d**
42.	Spike tooth harrow is used after…….... (a) Ploughing (b) Inter culturing (c) Seeding (d) Spreading of fertilizer	**a**
43.	Seeding rate of machine is expressed as…… (a) Weight/unit time (b) Weight per unit area (c) Volume/time (d) None of the above	**b**
44.	In seed drill, the furrow opener is generally……... (a) Shovel type (b) Shoe type (c) Disc type (d) All above	**d**
45.	Distribution of seeds in row by seed drill is affected by……... (a) Shape of seed tube (b) Inclination of seed tube (c) Height of seed released from tube (d) All the above	**a**
46.	Which of the following is a nonrenewable energy resource?……..... a) Solar b) Biomass c) Hydroelectric d) Coal	**d**
47.	Energy resources derived from natural organic materials are called……... a) Geothermal b) Fossil fuels c) Wind d) All of these	**b**
48.	The radiation received from the sun without having been scattered by the atmosphere is called…… a) Total radiation b) Diffuse radiation	**c**

	c) Normal radiation d) None of these	
49.	The angle between the horizontal and the line to the sun is called…… a) Azimuth angle b) Zenith angle c) Solar altitude angle d) All of these	**c**
50.	The latest value of solar constant is taken as……... a) 1390.1 W/m^2 b) 1366.1 W/m^2 c) 1300.1 W/m^2 d) 1345.1 W/m^2	**b**
51.	The declination on February 18 is nearly.…….. a) +12.27^o b) +13.27^o c) -12.27^o d) -13.27^o	**c**
52.	The summation of altitude angle and zenith angle is…….. a) 0^o b) 45^o c) 90^o d) None of these	**c**
53.	The angular location to north or south of the equator is called……... a) Meridian b) Longitude c) Latitude d) None of these	**c**
54.	Hydroelectric power (hydropower) systems convert the ……..in flowing water into electric energy. a) Potential energy b) Kinetic energy c) Chemical energy d) None of these	**b**
55.	The amount of electricity that can be generated by a hydropower plant depends on… a) Head b) Flow rate c) Both a and b d) None of these	**c**
56.	In Horizontal Axis Wind Turbine (HAWT), the Lift Force is perpendicular to the direction of motion. We want to make this force……. a) Small b) Big c) Equal d) None of these	**b**
57.	Doubling wind speed means ……. more power. a) 2 times b) 4 times c) 6 times d) 8 times	**d**
58.	……. are massive steel or concrete structures attached to the base of the units to achieve stability by their own inertia. a) Piled structures b) Gravity structures c) Floating structures d) None of these	**b**
59.	The declination on February 18 is nearly.……..	**c**

	a) +12.27º b) +13.27º c) -12.27º d) -13.27º	
60.	Angular displacement of the sun from the plane of the earth`s equator ……. a) Declination b) Altitude c) Latitude d) None of these	**a**
61.	The sun takes.....to transverse 1 degree of longitutde. a) 1 min b) 2 min c) 3 min d) 4 min	**d**
62.	The instantaneous efficiency of the solar air heater can be calculated from the ratio of the …… a) Useful heat and the incident energy b) Incident energy and Useful heat c) Thermal losses to the incident energy d) None of these	**a**
63.	Photovoltaics (PV) or solar cells are often called as…… a) Semiconductor b) Conductor c) Insulator d) None of these	**a**
64.	The material used for N-type doping in solar cell is……. a) Silicon b) Aluminum c) Indium d) Phosphorus	**d**
65.	The conversion of organic material directly to a gas, termed biogas is …….. a) Pyrolysis b) Anaerobic digestion c) Fermentation d) Combustion	**b**
66.	Waterwheels convert the kinetic energy of flowing water to …… a) Potential energy b) Thermal energy c) Mechanical energy d) None of these	**c**
67.	A fuel cell is an electrochemical device that combines ……to produce electricity, with water and heat as its by-product. a) Hydrogen b) Oxygen c) Both a and b d) None of these	**c**
68.	Amount of heat needed to raise the temperature of 1 g of distilled water by 1 K at sea level and normal temperature (15°C) is called……. a) Joule b) Calorie c) British thermal unit d) None of these	**b**
69.	1 BTU is equal to…….. a) 1054.6 J b) 252 Cal c) Both a and b d) None of these	**c**

70.	Primary tillage is normally designed to_____. a-Reduce soil strength b-Cover plant materials c-Rearrange aggregates d-All the above	**d**
71.	Secondary tillage is performed_____. a-After primary tillage b-Ploughing the soil c-After crop planting d-All the above	**d**
72.	Two stoke engine is preferred for small vehicles because_____. a- Fuel consumption is low b-Shock and vibrations are less c- Its size is small d- It is easy to control	**c**
73.	Piston displacement is calculated from the_____. a- Cylinder diameter and length b- Piston length and diameter c-Bore and stroke d-None of the Above	**c**
74.	In constant volume combustion, the air fuel mixture is ignited_____. a- Within the cylinder b- b- By spark c- Outside the cylinder **d-** d- None of the above	**a**
75.	If compression ratio is increased_____. a- Thermal efficiency will be increased b- Volumetric efficiency will be increased c-Air standard efficiency will be decreased d- Air standard efficiency will be increased	**d**
76.	In 2-stroke cycle engine, one cycle is completed in_____. a. 2 revolutions of crank shaft b. One revolution of crank shaft c. 4 revolutions of crank shaft d. 3 revolutions of crank shaft	**b**
77.	In a four stroke diesel engine, the ignition takes place due to_____. a. Spark b. High pressure c. High temperature d. Both b & c	**d**
78.	Cam shaft is driven by_____. a-Crank shaft b-Drive wheel c-Piston d-Piston rod	**a**
79.	Which type of valve arrangements requires the use of rocker arms? a- H-head b- T-head c- I-head d- L-head	**c**
80.	In diesel engine the component placed at the place of spark plug, is_____. a-Nozzle b- Intake valve c- Exhaust valve d- Piston rod	**a**

81.	The combustion process in a diesel engine is_____. a. Constant pressure process b. Isothermal process c. Constant volume process d. Adiabatic process	**a**
82.	In disc harrow the penetration depth can be increased by_____. a-Increasing disc angle b-Increasing speed c-Removing weight box d-All above	**a**
83.	Tachometer measures_____. a-Engine speed b- Engine power c-BHP d- IHP	**a**
84.	In tandem disc harrow the two fronts throw the soil_____. a-Outward b-Inward c-Left side the gang d-Inside the gang	**a**
85.	A high speed of thresher mainly causes_____. a- Grain damage b- b- poor threshing c- Greater Threshing **d-** d- All the above	**a**
86.	In 4-stroke diesel engines, the sequence of strokes is_____. a-Intake, compression, expansion and exhaust stroke b- Intake, expansion, compression and exhaust stroke c-Expansion, intake, exhaust and compression stroke d-Compression, expansion, intake and exhaust stroke	**a**
87.	A good fuel should contain the quality of_____. a-Good volatility and free from gum b- high antiknock value c- chemical purity d- all above	**d**
88.	Renewable energy as source of farm power includes_____. a-Bio gas b-Solar Energy c-Wind Energy d-All of the Above	**d**
89.	A device which is used to convert solar energy directly into electrical energy is called as_____ a- Solar heater b-Solar concentrator c-Solar furnace d-Solar cell	**d**
90.	If we know the engine speed, bore, stroke, number of cylinders and mean effective pressure in the cylinders, we can calculate_____. a- FHP b-IHP c-BHP d-All of the Above	**d**
91.	Strength of any material is indicated by its_____. a-Stress b- strain c- compressiveness	**a**

	d- compactness	
92.	Subsoiler is the_____. a-Primary tillage plough b-Secondary tillage implement c-Conservation tillage tool d-Zero tillage machine	**a**
93.	Knowing the speed at which an engine is running and the torque it is developing, we can calculate_____. a-FHP b-IHP c-BHP d-All of the Above	**a**
94.	In a material, the tensile stress is due to_____ a-Tension b- compactness c- sliding on another surface d- none	**a**
95.	During combustion the pressure in the cylinder may increase to as much as_____. a-50 Kg/cm2 b-400 Kg/cm2 c-10 Kg/cm2 d- 1 kg/cm2	**a**
96.	A normal ploughing is done for the depth of about_____. a-15 cm b-50 cm c-100 cm d-150 cm	**a**
97.	Piston displacement is calculated from the_____. a- Cylinder diameter and length b- Piston length and diameter c-Bore and stroke d-None of the Above	**c**
98.	A bushing is the_____. a-Replaceable lining for a bearing b-Worm for worm gear c-Pitch for pulley d-Sleeve in cylinder	**a**
99.	A petrol engine consists of_____. a-Carburetor b-Ignition coil c-Spark plug d-All above	**d**
100.	Washers are used_____. a- Beneath the bolt head b- beneath the nut c- To hold two metal pieces d- Both (a & b)	**d**
101.	Which is not the part of M.B plough_____. a-Tail piece b-Shovel c-Frog d-Land side	**b**
102.	External combustion engine is_____. a- Steam engine b- Petrol engine	**a**

	c- Diesel engine d- Both (a & c)	
103.	Water cooled tractors are more suitable for the areas of_____. a-Hot climate b-Desert land c-Cold climate d-Both (a & b)	**d**
104.	In diesel engine the component placed at the place of spark plug is_____. a-Nozzle b- Intake valve c- Exhaust valve d- Piston rod	**a**
105.	The combustion process in a diesel engine is_____. a. Constant pressure process b. Isothermal process c. Constant volume process d. Adiabatic process	**a**
106.	In 4-stroke diesel engines, the sequence of strokes is_____. a-Intake, compression, expansion and exhaust stroke b- Intake, expansion, compression and exhaust stroke c-Expansion, intake, exhaust and compression stroke d-Compression, expansion, intake and exhaust stroke	**a**
107.	The temperature of the compressed air should be _____ of the fuel. a. Below the flash point b. Above the flash point c. Above the fire point d. Between the fire and flash point	**c**
108.	In the intake stroke of diesel engine_____. a-Only air enters into the cylinder b-Piston is idle c-Piston is at the top or cylinder d-Wheel does not turn	**a**
109.	The compression ratio in a diesel engine is as high as_____. a. 35:1 b. 20:1 c. 10:1 d. 5:1	**b**
110.	In expansion stroke of engine, when fine spray of diesel is injected into cylinder, the piston reaches at_____. a- The upper part of cylinder b- The middle of cylinder c- The bottom of the d- None of the above	**a**
111.	In two stroke engines, the exhaust port is located_____. a- Opposite to the transfer port b- At the top of cylinder c- At the bottom of cylinder d- Beside transfer port	**a**
112.	The actual area covered by the implement during its total consumed time is known as_____. a-Effective field capacity b-Field efficiency c-Theoretical field efficiency d-Theoretical field capacity	**a**
113.	Soil pulverization is evaluated in terms of_____. a-Soil aggregates and clod size	**a**

	b-Depth of ploughing c-Level of soil surface d-Inversion of soil	
114.	During compression stroke the air is compressed according to_____. a- Isothermal process b- Hyperbolic process c- Adiabatic process d- Constant pressure process	**c**
115.	The soil mass which is cut lifted and threw during ploughing is called_____. a-Furrow slice b-Cut volume c-Replaced mass d-Inverted mass	**a**
116.	Entry of rich mixture in the cylinder can cause the problem of_____. a-Over heating b- Engine smoke c- Failure to start the engine d- All above	**b**
117.	The function of an inverter in solar PV system is to a-store energy b- convert DC to AC current c- convert AC to DC current d- None of these	**b**
118.	In seed drill the kind of drive used to transmit the power from ground wheel to the seed metering device is_____. a- gears b- belt and pulley c- chain and sprocket d- all above	**c**
119.	A residence needs 4 kW load for electricity for 12 hours per day. Average insolation = 6 kWh m^{-2} d^{-1} and the photovoltaic system efficiency is 20%. The area required of PV array will be ---------- a) 30 b) 40 c) 60 d) 80	**b**
120.	In Pakistan, mostly the biogas plants are operated in the----------of temperature a) Psychrophilic range b) Mesophilic range c) Thermophlic range d) All of these	**b**
121.	Optical losses of solar collector ……. with the increase in temperature difference of pot content temperature and ambient temperature a) Increase b) decrease c) remain the same d) depend on fluid to be heated	**c**
122.	For the same surface area, vacuum tube collectors are more efficient than the flat plate collectors as the ……..losses become negligible theoretically. i) conduction ii) convection iii) radiation a) (i) & (ii) only b) (ii) & (iii) only c) (i) & (iii) only d) All three losses	**a**
123.	Which is not a renewable energy resource a) Solar	**d**

	b) Hydel c) Geo-thermal d) Natural gas	
124.	Transesterification process is performed to change the ..... of vegetable oil i) Viscosity ii|) Calorific value iii) Cetane No. iv) Molecular Weight a) i) & ii) b) ii) & iii) c) i) & iv) d) iii) & iv)	**c**
125.	During the transesterification process, bio diesel is produced in the form of a) Methyle ester b) trygleceride c) both d) Non of these	**a**
126.	Average solar global insolation in Pakistan lies from a) 5–7 kJ m^{-2} day^{-1} b)5–7 kW m^{-2} day^{-1} c) 5–7 kWh day^{-1} d) 5–7 kWh m^{-2} day^{-1}	**d**
127.	For silicon solar cell, the energy needed to get an electron across a p-n junction is a) 1 eV b) 1.1 eV c) 1.5 eV d) 3 eV	**b**
128.	For safe and economical operation, the stack temperature in a biomass boiler should be maintained within……..-. a) 90-100°C b) 180-200 °C c) 500-600°C d) non of these	**b**
129.	The range of H_2S in biogas lies from …… a) 50-5000 ppm b) b) 0.5-10 ppm c) c) 0-5% d) d) 5-10%	**a**
130.	On PV-Diagram, the area of a closed figure for a thermodynamic cycle represents – a) Work done b) Heat energy absorbed c) Total internal energy d) Total entropy	**a**
131.	Using approximation on TS-diagram, amount of heat energy absorbed can be calculated by multiplying the change in …… with the average --------- during the process. a) Temperature and entropy b) Entropy and temperature c) Entropy and pressure d) Volume and pressure	**b**
132.	One Tonne of refrigeration is equivalent to rate of heat abstracted from the system @..,……. J S^{-1} a) 2500 b) 3500 c) 4500 d) 5500	**b**
133.	In a refrigeration cycle, the sequence of thermodynamic processes is a) i) compression ii) heat addition iii) expansion iv) heat rejection b) i) compression ii) heat rejection iii) expansion iv) heat addition c) i) compression ii) expansion iii) heat rejection iv) heat addition	**b**

	d) i) compression ii) heat rejection iii) heat addition iv) expansion	
134.	If the value of n=1 in the general law $PV^n = C$, then the process is called ……. a) Isochoric process b) Isobaric process c) Isothermal process d) Isentropic process	**c**
135.	Isothermal process on TS-Diagram is represented by a straight line parallel to …… axis a) Temperature b) Entropy c) Pressure d) Volume	**b**
136.	The change in entropy for a given mass of a gas is measured in ……. a) kJ kg^{-1} b) kJ c) kJ K^{-1} d) kJ C^{-1}	**c**
137.	One kg of air is heated at a constant volume from I bar and 27°C to a pressure of 5 bar. The change in entropy is …….. (Assume $C_v = 0.712$ kJ kg^{-1} K^{-1}). a) 0 b) 0.145 kJ c) 1.145 d) 2.145	**c**
138.	Air standard efficiency is calculated for comparison of different air cycles to eliminate the effect of ……. a) Stroke length b) Compression ratio c) Clearance volume d) Calorific value of fuels	**d**
139.	The efficiency of a Carnot cycle will be ..... if the temperature of the source and sink are 1000°C and 200°C respectively. a) 62.84% b) 72.84% c) 80% d) cannot be determined	**a**
140.	In perfect inter-cooling of a multistage compressor, ..…….process is converted into ……. process to minimize the compressor power. a) Isobaric and Isothermal b) isothermal and reversible adiabatic c) Irreversible adiabatic and isothermal d) Reversible adiabatic and isothermal	**d**
141.	By ..... compression ratio and ..... cut-off ratio, the ideal efficiency of a Diesel engine will be increased a) Increasing and increasing b) Increasing and decreasing c) Decreasing and increasing d) Decreasing, decreasing	**d**
142.	Under practical conditions, the efficiency of a diesel engine is more as compared to the petrol engine for the same engine dimensions due to ……. a) Higher compression ratio b) Constant pressure heat addition c) High speed of the engine d) Physical properties of Diesel	**a**
143.	The air/fuel ratios (on mass basis) for an engine using petrol (C_8H_{18}) and natural gas (CH_4) are .....and .....respectively. a) 3.5 and 4	**b**

	b) 15.2 and 17.4 c) 25 and 12.5 d) 17.2 and 15.2	
144.	On complete combustion, one kg of Diesel ($C_{16}H_{34}$) will produce …….kg of CO_2. a) 1.3 kg b) 3.1 kg c) 16 d) 32	**b**
145.	According to ……., an isothermal process is also a hyperbolic process for all gases. a) Joule's Law b) Charles Law c) Boyle's Law d) None of these	**c**
146.	The specific heat of water is …… kJ kg^{-1} K^{-1} a) 1 b) 4.187 c) 335 d) 2257	**b**
147.	Internal energy of a gas is a function of……. a) Pressure b) Entropy c) Temperature d) Molecular weight	**c**
148.	Sequence of power strokes in multi cylinder engine is known as; a-Firing interval, b- Firing order, c- Idle strokes, d- Stroke order	**b**
149.	Compression ratio of diesel engine is acceptable in the range of a) 6-9:1, b) 32-36:1, c) 30-36:1, d) 14-25:1	**d**
150.	Compression ratio can be find out by the formula; (I- TCV/CV, II- (PD/CV) + 1, III-CV/TCV, IV-PD/CV). a) I & II only b) I & III only, c) I, II & IV, d) I, II & III	**a**
151.	The movement of inlet and exhaust valves is controlled by_____ a) Crank shaft b) Cam shaft c) Connecting rod, d) None of them	**b**
152.	Power is produced once in _____ revolution of crankshaft in 2-stroke engine. A) Two, B) B) Three, C) C) One, D) D) Four	
153.	Petrol engine has _____ while diesel engine has _____. (I- Carburetor & fuel injector, II- Injection pump & spark plug, III- Spark plug & carburetor, IV- Fuel injection pump & injector). a) I & III b) II & IV c) III & IV d) I & II	**c**

154.	Water pump takes the drive from_____ a) Crank shaft b) Cam shaft c) Timing gears d) Cooling fan	**a**
155.	In diesel engine _____ is sucked in cylinder during _____(I-Air + fuel , power stroke, II- Air + fuel, suction stroke, III- Air, suction stroke, IV- Air, compression stroke). a) II & III b) I only c) I & IV d) III only	**d**
156.	Connecting rod establishes a connection between ____ and ____. (I-Cam shaft & crank shaft, II-Cam shaft & piston rings, III-Crankshaft & piston rings, IV- Crankshaft & piston) a) I & II, b) IV only, c) III only, d) I & III	**b**
157.	The distance covered by the piston when moving from TDC to BDC and vice versa is known as_____ a) Stroke b) Piston displacement c) Clearance volume d) Engine size	**A**
158.	Cooling system of diesel engine helps to maintain the temperature of engine at about _____. a) 50^{o}C b) 90^{o}C c) 120^{o}C d) 30^{o}C	**b**
159.	Cooling system has following components. (I-Radiator, II-Intake & exhaust valve, III- Oil bath air cleaner, IV-Thermostat valve). a) I & III b) I only c) I & IV d) III only	**c**
160.	Fuel injection system has following components. (I- Intake & exhaust valves, II- Radiator, III-Thermostat valve, IV- Atomizer). a) I & IV b) I only c) II & IV d) III only	**A**
161.	Lubrication system has following components. (I-Radiator, II-Oil sump, III- Strainer, IV-Water jackets). a) I & III b) II & III c) I & IV d) III only	**b**
162.	MF-375 & MF-260 turbo tractors have ____ and____ brake horse power respectively. I) 65, II) 85, III) 75, IV) 60). a) I & III b) II & III c) III & IV d) III only	**c**
163.	In a material, the tensile stress is due to a) Tension b) compactness	**a**

	c) sliding on another surface d) compressiveness	
164.	To an object, the tensile stress always tends to a) Increase longitudinally b) decrease longitudinally c) Compress d) all above	**a**
165.	The ratio of change in shape due to some external force to the original shape of the object, is called a) Strain b) compression c) stress d) compactness	**a**
166.	Internal combustion engine is_____ a) Steam engine b) Petrol engine c) Diesel engine d) Both (b) & (c)	**d**
167.	Diesel engine is the a) External combustion engine b) Internal combustion engine c) Semi internal combustion engine d) None of the above	**b**
168.	Diesel engine follows the principle of a) Diesel cycle b) Otto cycle c) Petrol cycle d) Auto cycle	**a**
169.	Engine, in which one cycle is completed in one revolution of crank shaft, is called a) 4-stroke cycle engine b) 2-stroke cycle engine c) External combustion engine d) None of the above	**b**
170.	In 4-stroke cycle engine, one cycle is completed in a) 2 revolutions of crank shaft b) One revolution of crank shaft c) 4 revolutions of crank shaft d) 3 evolutions of crank shaft	**a**
171.	In a four stroke diesel engine, the ignition takes place due to a) Spark b) High pressure c) High temperature d) Both (b) & (c)	**d**
172.	In compression stroke of 4-stroke diesel engine, the piston a) Moves upward b) Moves downward c) Becomes idle d) Moves upto middle of the cylinder	**a**
173.	In 4-stroke engine, there is a) Only one power stroke b) Three idle strokes c) Three power stroke d) Both (a) & (b)	**d**
174.	The fine spray of the diesel oil is injected into the cylinder of an engine during a) Intake stroke b) Compression stroke	**c**

	c) Power stroke d) Exhaust stroke	
175.	In carburetor type petrol engine, the fuel is ignited by a) Electric spark b) High compression c) Petrol flame d) All above	**a**
176.	In carburetor type petrol engine, the fuel is mixed with air a) In cylinder b) Before entering into cylinder c) After entering into cylinder d) None of the above	**b**
177.	In diesel engine, the fuel is ignited by a) Heat of the compressed air b) Spark plug c) Electrical spark d) None of the above	**a**
178.	In diesel engines, fuel is injected into cylinder through a) Automisers b) Manifold c) Air intake d) Exhaust valve	**a**
179.	Engine weight per horse power (H.P.) is more, in case of a. Petrol engine b. Diesel engine c. Air-cooled engine d. Motor cycles	**a**
180.	Top of the piston is called a) Crown b) TDC c) BDC d) Sleeve	**a**
181.	The function of cam shaft, is to a) Lower and raise the inlet valve b) Lower and raise the exhaust valve c) Close the oil pan d) Both (a) & (b)	**d**
182.	In four stroke engine, the speed of cam shaft is a) Exactly half the speed of crank shaft b) 5 m/s c) 2.5 cm/s d) 10 mm/s	**a**
183.	The function of timing gear in the engine is to a) Open and close the valves b) Control the fuel injection timing c) Control the ignition timing d) All above	**d**
184.	The diameter of engine cylinder, is called a) Bore b) Sleeve c) Stroke d) Swept	**a**
185.	The linear distance, travelled by the piston from T.D.C. to B.D.C, is called a) Bore b) Sleeve	**c**

	c) Stroke d) Swept	
186.	The portion of piston, below pin, which is designed to absorb the side movement of piston, is called a) Piston head b) Piston skirt c) Sleeve d) Cam	**b**
187.	A shaft containing lobe, which operates the valves of the engine, is known as a) Crank shaft b) Cam shaft c) Piston rod d) None of the above	**b**
188.	The sub-soilers are operated by tractor of a) 60 to 80 hp b) 35 hp c) 50 hp d) 25 to 35 hp	**a**
189.	To pulverize the soil for seed bed preparation is the a) Objective of primary tillage b) Objective of secondary tillage c) Practice of zero tillage d) Practice of conservation tillage	**B**
190.	Seeding rate of machine is expressed as A. Weight per unit time B. Weight per unit area C. Volume per unit time D. None of these	**B**
191.	What are the number of gangs in offset disc harrow A. 1 B. 2 C. 3 D. 4	**B**
192.	What is the tilt angle of disc plow? A. 0 to 10 degree B. 15 to 25 degree C. 42 to 45 degree D. None of these	**B**
193.	How the width of cut of disc plow can be increased? A. By increasing disc angle B. By increasing tilt angle C. By decreasing disc angle D. By decreasing tilt angle	**A**
194.	What is the area covered by 3 row seed drill having row size of 150 mm if the drive wheel revolves 20 revolutions having 10 mm diameter? A. 282450 mm B. 392600 mm C. 282540 mm D. 282600 mm	**D**
195.	In which sprayer the droplets emerge from delivery gun with an electric charge? A. ULV sprayer B. Aerosol sprayer	**D**

	C. Air blast sprayer D. Electro-dyn sprayer	
196.	Which type of mouldboard is often used, where the soil is sticky? A. Stubble B. Sod or breaker C. Slat D. General purpose	**C**
197.	The furrow opener, which works well in trashy soils is? A. Inverted T type B. Shoe type C. Hoe type D. Disc type	**B**
198.	The metering mechanism suitable for metering small and large seeds is? A. Fluted roller B. Cup feed type C. Cell feed type D. Internal double run type	**D**
199.	The most common power transmission system used in seed drill is A. Belt and pulley B. Chain and sprocket C. Gears D. PTO Shaft	**B**
200.	Determine the travel speed of planter having ground wheel diameter of 610 mm and rotating at 100 rpm. A. 3.2 km/hr B. 3.2 m/s C. 3.2 ft/min D. 3.2 km/min	**B**
201.	The metering mechanism used in potato planter is A. Fluted roller B. Brush feed type C. Picker wheel type D. Cell feed type	**C**
202.	A motorized rotary tiller is.....equipment A. Tractor mounted B. Self-propelled C. Manual D. Animal drawn	**B**
203.	Hollow cone nozzle employed on boom type sprayer have spray angle of A. 30-50 degree B. 40-60 degree C. 65-110 degree D. 90-120 degree	**C**
204.	Leaf colour chart LCC is used to indicate real time A. Nitrogen level B. Carbon level	**A**

	C. Moisture content D. Chlorophyll	
205.	. .....refers to the spread of fertilizer in between the rows and around the plants A. Plough sole placement B. Localized placement C. Side dressing D. Band placement	**C**
206.	The metering in which seeds are held by atmospheric pressure at drum hole is called A. Mechanical metering B. Pressurized metering C. Vacuumed metering D. Cup feed metering	**C**
207.	Foliar application of fertilizers are generally refers to A. Micro nutrients B. Macro nutrients C. Dusting powdery nutrients D. Insecticide application	**A**
208.	In case of.....puddling is required for sowing of rice crop. A. Broadcaster B. DSR drill C. Transplanter D. None of these	**C**
209.	..... is used for sowing of dry rice seeds. A. Dibbler B. DSR drill C. Transplanter D. All of these	**B**
210.	Which of the following consists of a large bucket in case of land development equipment? A. Escalator B. Scraper C. Grader D. None of these	**B**
211.	Which of the following is considered as unmanned aerial vehicle? A. Thematic soil mapper B. MSS sensor C. Drone D. Aerosol	**C**
212.	In which of the followings, the application rate is adjusted based on digital maps of field properties? A. Map based VRA B. Sensor based VRA C. Both Map and sensor based VRA D. None of these	**A**
213.	In case of sensor based VRA, the amount of material applied into the fields is regulated using A. Actuators B. Speed sensor C. Pressure relief valve	**A**

	D. None of these	
214.	. .....is used to cut the sugarcane stalks from ground in sugarcane harvester. A. Chopper B. Topper C. Base Cutter D. None of these	**C**
215.	Which of the following is not used for cutting of cereal crops? A. Reaper cum binder B. Combine harvester C. Windrower D. Mower	**D**
216.	Which of the followings is used to cut the crops and ties them into a knot and uniform sheaves? A. Mower B. Windrower C. Reaper cum binder D. Combine harvester	**C**
217.	A tractor drawn semimounted mower is operated using A. Belt and pulley drive B. Tractor hydraulic linkages C. Tractor power take off D. Tractor hitch	**C**
218.	In case of reaper, the knife clips are placed with A. Ledger plate B. Wearing plate C. Guard D. Cutter bar	**B**
219.	A reaper is moving with 2.77 m/s in the field. The stroke length of cutter bar is 8 cm and cutting speed is 720 strokes per minute. What will be the cutting index of reaper? A. 0.50 B. 1.25 C. 1.75 D. 2.25	**B**
220.	Which of the followings is not performed by a reel of the combine harvester? A. Preventing shattering of the crop B. Allow crop to move uniformly to platform C. Handle matted crop D. Picking up shattered grains	**D**
221.	Now a days, Which of the followings is most commonly used reel in combine harvesters A. Slat type reel B. Pick up type reel C. Wooden reel D. Bar type reel	**B**
222.	In case of combine harvester, the optimum value of reel index for minimum cutter bar loss is taken as A. 1.25 to 1.50 B. 2.25 to 3.25 C. 3.25 to 4.50 D. 4.25 to 5.50	**A**

223.	If the..... the mechanical wheat thresher causes more seed damage. A. Speed is increased B. Clearance is increased C. Speed is decreased D. Feed rate is reduced	**A**
224.	Which of the followings is not to remove grains from grain heads? A. Cylinder B. Concave C. Beater D. Sieve	**D**
225.	. ..... is the ratio of mass of threshed grains received at grain outlets to the total mass of input grains is A. Cleaning efficiency B. Winnowing efficiency C. Threshing efficiency D. Sieving efficiency	**C**
226.	Which of the followings causes broken grains at main outlet of the thresher? A. Less clearance of concave B. Lower speed of threshing drum C. High concave clearance D. High crop feed rate	**A**
227.	What should be the roller tip speed in case of sugarcane harvester A. 15 to 25 percent of chopper tip speed B. 25 to 45 percent of chopper tip speed C. 55 to 65 percent of chopper tip speed D. 75 to 95 percent of chopper tip speed	**C**
228.	For conventional maize sheller threshing drum speed should be A. 300 to 400 rpm B. 500 to 600 rpm C. 700 to 800 rpm D. 900 to 1000 rpm	**B**
229.	The Spindle type cotton pickers are capable of cotton picking upto A. 48 percent of cotton produced B. 68 percent of cotton produced C. 78 percent of cotton produced D. 98 percent of cotton produced	**D**
230.	The flow rate is..... in case of hydrodynamic transmission. A. Higher than hydrostatic transmission B. Lower than hydrostatic transmission C. Equal to hydrostatic transmission D. Variable compared with hydrostatic transmission	**A**
231.	In pneumatic system, the operating pressure is A. 10 to 60 psi B. 70 to 150 psi C. 150 to 180 psi D. 180 to 250 psi	**B**

232.	Which of the followings is not classified as hydraulic valves A. Pressure control valve B. Flow control valve C. Direction control valve D. Solenoid valve	**D**
233.	Which of the followings in tractor is used for automatic raising and lowering of the implements? A. Position control B. Draft control C. Flow control D. Direction control	**B**
234.	The speed of PTO shaft with six splines is A. 420 B. 540 C. 640 D. 720	**B**
235.	Which of the followings is not used for navigation purpose? A. GPS B. DGPS C. GNSS D. GIS	**D**
236.	Seed material can be saved upto.....using Intelligent Distribution System (IDS). A. 1 percent B. 6 percent C. 16 percent D. 26 percent	**B**
237.	Which of the followings is not an air metering mechanism? A. Pressurized metering drum B. Pressurized metering disk C. Vacuum drum D. Vacuum metering disk	**C**
238.	Scraper is designed to dig, load, haul, dump and spread the soil. It is also called as A. Dumper B. Carryall C. Power shovel D. Excavator	**B**
239.	Laser land leveler works on A. Excavation and dumping ratio B. Drag and fill ratio C. Cut and fill ratio D. Digging and scraping ratio	**C**
240.	What will be the hydraulic power of a tractor if the fluid flow rate is 16 lps and pressure is 200 kPa? A. 3.20 kW B. 32.0 kW C. 320 kW D. None of these	**A**
241.	What will be the interest on machine if the purchase price of machine is PKR 800000 and annual interest rate ia 8 percent.	**A**

	A. 3520 Rupees B. 35200 Rupees C. 45200 Rupees D. 65200 Rupees	
242.	What will be the annual depreciation cost of machine if purchase price of machine is PKR 800000. A. PKR 7200 B. PKR 72000 C. PKR 82000 D. PKR 96000	**B**
243.	. The cotton stripper is used for A. Pod picking B. Ginning of cotton crop C. Harvesting tuber crop D. Threshing of cotton crop	**C**
244.	The cutting edge just above the landside and share in MB plough is known as A. Frog B. Shin C. Mold board D. Beam	**B**
245.	In disc plough, the angle used to control the width of furrow and pulverization is called A. Disc angle B. Tilt angle C. Gang angle D. Beam angle	**A**
246.	Which tillage implement does not invert the soil? A. Chisel plough B. Sub soiler C. Bar harrow D. All of these	**D**
247.	Which cutting depth best describe disc plough? A. 9 to 12 cm B. 15 to 22 cm C. 22.5 to 30 cm D. 25 to 38 cm	**C**
248.	Which tillage implement does not invert the soil? A. Chisel plough B. Sub soiler C. Bar harrow D. All of these	**C**
249.	In disc harrow the standard disc spacing is A. 5 inches B. 7 inches C. 10 inches D. 12 inches	**C**
250.	Which one is not PTO operated machine? A. Rotavator	**D**

	B. Thresher C. Broadcaster D. Seed drill	
251.	Which of the followings is a semi mounted implement? A. Thresher B. MB plough C. Seed drill D. Disc harrow	**C**
252.	The maximum allowable tire slippage for productive usage is A. 2 to 4% B. 12 to 15% C. 25 to 35% D. 45 to 55%	**B**
253.	Ballasting is a process to control A. Excessive draft B. Slippage C. Implement position D. Weight of implement	**B**
254.	In seed drill one complete revolution of drive wheel means the ground distance covered by seed drill is A. 3.14 B. 3.14 times of diameter C. 3.14 times of diameter squared D. 3.14 times of radius squared	**B**
255.	To calculate discharge rate of boom sprayer, which one of the following procedure is not true? A. Operate sprayer with tractor at standing single position B. Maintain pressure of boom C. Collect boom discharge in polyethene bags D. Note time of sample collection	**C**
256.	The mechanical connection between tractor and implement is called A. Hitching B. Drafting C. Attaching D. Locking	**A**
257.	Tachometer is a device that is used to measure A. Engine speed B. PTO speed C. Cutter bar RPM D. All of these	**D**
258.	A tractor is pulling a 0.745 m wide implement working at depth of 6 inches with average speed of 23.5 m/s, what will be its theoretical field capacity? A. 0.48 ha per hr B. 17.5 ha per hr C. 48.6 ha per hr D. 1.75 ha per hr	**A**
259.	A tractor is pulling a 0.745 m wide implement working at depth of 8 inches, if it takes 7 minutes and 48	**A**

	seconds to cover 0.044 ha area, what will be the actual field capacity? A. 0.32 B. 0.47 C. 0.032 D. 0.06	
260.	A tractor is pulling a 0.745 m wide implement working at depth of 9 inches with average speed of 23.5 m/s, if it takes 7 minutes and 48 seconds to cover 0.044 ha area, what will be the field efficiency? A. 100% B. 96.8% C. 66.8% D. 86.6%	**C**
261.	If row to row distance of seed drill is 190 mm and working width is 1710 mm, then how much rows can be seeded with the drill during one pass? A. 9 B. 11 C. 13 D. 17	**A**
262.	A boom sprayer with tank capacity 500 liter and 20 nozzles is being calibrated, the average discharge from single nozzle collected is 280 ml in 30 seconds. What is the discharge rate of boom sprayer? A. 186 L/hr B. 672 L/hr C. 500 L/hr D. 168 L/hr	**B**
263.	A tractor is pulling a 0.745 m wide implement working at depth of 8 inches, if it takes 10 seconds to cover 20 m distance without load and 18.5 m with load, how much tire have been slipped? A. 5% B. 6.5% C. 7.5% D. 8%	**C**
264.	The movement of inlet and exhaust valves is controlled by A. Crank shaft B. Cam shaft C. Connecting rod D. None of these	**B**
265.	. Engine size is given by A. Bore and stroke B. Diameter and volume C. Bore and volume D. None of these	**B**
266.	The compression ratio is the ratio of total cylinder volume to the A. Piston displacement B. Clearance volume C. Stroke D. Bore	**b**
267.	The function of the connecting rod is to convert the A. Potential energy into kinetic energy B. Linear motion of the piston into rotary motion of the crankshaft	**B**

	C. The rotary motion of crankshaft into power D. Linear motion of valve into rotary motion of the crankshaft	
268.	In a 4-stroke engine, how many crankshaft revolutions are required to complete four-strokes? A. 4 B. 5 C. 3 D. 2	**D**
269.	In four stroke engine, both the valves remain closed in which of the following operations A. Compression and Power B. Suction and Exhaust C. Compression and Exhaust D. None of these	**A**
270.	The engine which is lighter in weight, working fast and contains fewer components is A. Four stroke engine B. Two stroke engine C. Rotary engine D. All of these	**B**
271.	Cooling system of diesel engine helps to maintain the temperature of engine at about A. 50 degree C B. 90 degree C C. 120 degree C D. 30 degree C	**B**
272.	In four stroke diesel engines, the sequence of strokes is A. Intake, compression, expansion and exhaust stroke B. Intake, expansion, compression and exhaust stroke C. Expansion, intake, exhaust and compression stroke D. Compression, expansion, intake and exhaust stroke	**A**
273.	The distance covered by the piston when moving from TDC to BDC and vice versa is known as A. Stroke B. Piston displacement C. Clearance volume D. Engine size	**A**
274.	Which of the following is not a component of fuel system of a diesel engine? A. Carburetor B. Fuel injector C. Fuel injection pump D. None of these	**A**
275.	Which of the following is acceptable list of primary tillage implements? A. Disc plow + Bar harrow B. Cultivator + Bar harrow C. Disc plow + Subsoiler D. MB Plow + Disc Harrow	**A**
276.	. In disc plough, the disc angle is adjusted to control A. Depth of cut B. Width of cut C. Height of cut D. None of these	**B**

277.	Which of the following can cut the soil upto a depth of 100cm? A. MB Plow B. Disc plow C. Chisel plow D. Subsoiler	**D**
278.	The tilt angle of disc plow ranges between A. 5 to 10 degree B. 15 to 25 degree C. 25 to 35 degree D. 42 t0 45 degree	**B**
279.	Seeding rate of machine is expressed as A. Weight per unit time B. Weight per unit area C. Volume per unit time D. None of these	**B**
280.	The size of seed drill is expressed by A. Length and width of machine B. Area covered per unit time C. Number of furrow opener multiplied by spacing between two furrow openers D. Circumference of drive wheel multiplied by width of machine	**C**
281.	Which of the following sprayer emerge droplets from delivery gun with an electric charge? A. ULV sprayer B. Aerosol sprayer C. Air blast sprayer D. Electrodyn sprayer	**d**
282.	What is the disadvantage of aerial sprayer? A. High Speed B. Able to work on wet lands C. Less crop damage D. Drift	**D**
283.	Which of the following machine makes chaff? A. Thresher B. Reaper C. Mower D. None of these	**A**
284.	Which of the followings is used to perform rubbing action for crop in a combine harvester? A. Reel B. Threshing drum C. Beater D. Straw walkers	**B**
285.	Which of the following is component of separation process in a combine harvester? A. Reel B. Auger C. Straw walkers D. None of these	**C**
286.	Which of the following is parameter for variable cost?	**D**

	A. Depreciation cost B. Insurance C. Taxes D. Repair and maintenance cost	
287.	The component which provides space for the ignition of fuel and houses a piston and connecting rod is A. Cylinder B. Piston C. Carburetor D. Connecting rod	**A**
288.	In diesel engines, the ignition takes place without the presence of A. Air B. Fuel Injector C. Fuel D. Spark plug	**d**
289.	Which of the followings is not a component of cooling system of tractor A. Radiator B. Fan C. Water Pump D. Fuel injector	**D**
290.	The function of lubrication system is A. Reduce friction B. Act as a cooling agent C. Act as a cleaning agent D. All of these	**D**
291.	The tillage implement which has a maximum depth of penetration is A. Moldboard B. Disk plow C. Subsoiler D. Tine Cultivator	**C**
292.	The choice of planting equipment depends upon.....of seed. A. Color B. Size C. Price D. None of these	**B**
293.	Which of the following sprayer emerge droplets from delivery gun with an electric charge? A. ULV sprayer B. Aerosol sprayer C. Air blast sprayer D. Electrodyn sprayer	**D**
294.	In disc plough, the angle at which the plane of cutting edge of disc is inclined to the direction of travel A. Disc angle B. Tilt angle C. Gang angle D. None of these	**A**
295.	The part of MB plough to which all other parts of plough bottom is attached is A. Mould board	**C**

	B. Land side C. Frog D. Coulter	
296.	The 5x150mm seed drill is to plant 80kg of wheat seed per hectare. If diameter of its drive wheel is 1000mmm, then calculate the length necessary to cover 1 ha. A. 13333.3 m B. 1333.3 m C. 133.3 m D. None of these	**A**
297.	A 3*168mm Seed drill is connected with a 50HP tractor. The width of the seed drill is A. 750mm B. 302mm C. 790mm D. 504mm	**D**
298.	The broken grain received from main outlet of thresher is due to A. Less concave clearance B. Low speed of drum C. High concave clearance D. High feed rate	**A**
299.	Liquid fuel called as.....is injected near the TDC acts as a source of ignition in dual fuel engine. A. Pilot fuel B. Main fuel C. Gaseous fuel D. None of these	**A**
300.	. In dual fuel engine, the combustion starts similar to A. SI Engine B. CI engine C. Jet engine D. None of these	**B**
301.	In case of duel fuel engine, the NOx reduction is upto A. 20% B. 40% C. 60% D. 85%	**D**
302.	The share of fuel gas in case of duel fuel engine is A. 05% B. 30% C. 65% D. 95%	**D**
303.	Which of the following is more efficient for highway driving than in urban stop-and-go conditions? A. Parallel hybrids B. Series hybrid C. Mixed Mode D. None of these	**A**
304.	In fuel cell, the conversion of fuel to energy takes place via A. Electrochemical process	**A**

	B. Combustion process C. Thermo-chemical process D. Biochemical process	
305.	Different type of fuel cells are classified by the kind of A. Anode B. Electrolyte C. Cathode D. None of these	**B**
306.	Which of the following is leading cell type for passenger car applications? A. Proton Exchange Membrane fuel cell B. Direct Methanol fuel cell C. Molten Carbonate fuel cell D. Solid Oxide Fuel Cell (SOFC)	**A**
307.	Which of the followings is part of air induction system in EFI system? A. Intake chamber B. Pressure regulator C. Self diagnostics D. None of these	**A**
308.	If the peak power of single solar module is 270Wp, then how many numbers of modules are installed in a 10.26kW PV array system? A. 26 B. 32 C. 38 D. 48	**C**
309.	. In which of the system, both engine and motor are connected to transmission and can transmit power to wheels A. Parallel hybrid B. Series hybrid C. Mixed hybrid D. None of these	**A**
310.	Which of the followings is used to conserve soil and soil moisture? A. Till planting B. Secondary tillage C. Conservation tillage D. None of these	**C**
311.	Which of the following primary factor(s) influence the selection of planting machinery? A. Size of seed B. Shape of seed C. Seed type D. All of these	**D**
312.	Seed rate of sowing machinery is expressed as A. Weight per unit time B. Weight per unit area C. Volume per time D. None of these	**B**
313.	Which is not air metering mechanism?	**C**

	A. Pressurized metering drum B. Pressurized metering disk C. Vacuum drum D. Vacuum metering disk	
314.	What is the optimal time for harvesting of rice? A. 32 days after flowering B. 12 days after flowering C. 45 days after flowering D. None of these	**A**
315.	Which of the following is used to calculate the size of planter? A. Amount of seed dropped per unit area B. Area covered per unit time C. Number of furrow openers multiplied by spacing between them D. None of these	**C**
316.	Which of the following is suitable furrow opener for seeding in trashy soils? A. Hoe type B. Curved runner type C. Single disc type D. Runner type	**C**
317.	Which of the followings require puddling for sowing of rice crop? A. Rabi drill B. DSR drill C. Transplanter D. None of these	**c**
318.	Which of the following sprayer emerge droplets from delivery gun with an electric charge? A. ULV sprayer B. Aerosol sprayer C. Air blast sprayer D. Electro-dyn sprayer	**D**
319.	The spray application rate of ultra low volume sprayer is A. 10 liter per acre B. 0.1 liter per ha C. 0.1 liter per acre D. 1 liter per ha	**D**
320.	The application rate is adjusted based on digital maps of field properties using A. Map based VRA B. Sensor based VRA C. Actuators D. None of these	**A**
321.	The amount of material applied to fields is regulated by.....in sensor based VRA. A. Actuators B. Speed sensor C. Maps D. None of these	**A**
322.	In sensor based VRA, the amount of material applied to fields is regulated by A. Actuators B. Speed sensor	**A**

	C. Pressure control valve D. None of these	
323.	Which is not used for navigation? A. GPS B. DGPS C. GNSS D. GIS	**D**
324.	Which of the following is unmanned aerial vehicle? A. Thematic soil mapper B. MSS sensor C. Drone D. Aerosol	**C**
325.	A machine which is not used for cutting of cereal crop is A. Reaper B. Combine harvester C. Mower D. Windrower	**C**
326.	A machine that cuts the crops and ties them into a knot and uniform sheaves is called A. Mower B. Reaper C. Reaper binder D. Combine harvester	**C**
327.	In reaper, knife clips are placed with A. Ledger plate B. Wearing plate C. Guard D. Cutter bar	**b**
328.	The threshed grain received at main grain outlets with respect to total grain input expressed as percentage by mass is A. Cleaning efficiency B. Winnowing efficiency C. Threshing efficiency D. Sieving efficiency	**C**
329.	The broken grain received from main outlet of thresher is due to A. Less concave clearance B. Low speed of drum C. High concave clearance D. High feed rate	**A**
330.	The cutting mechanism of combine harvester consist of A. Cutter bar B. Platform C. Reel D. All of these	**D**
331.	Which of the followings is used to cut the sugarcane stalks from ground in the sugarcane harvester? A. Chopper B. Topper C. Base Cutter	**C**

	D. None of these	
332.	The cotton stripper is used for A. Pod picking B. Ginning C. Harvesting tuber crop D. Threshing	**C**
333.	In sugarcane harvester roller tip speed should be A. 25 to 35 percent of chopper tip speed B. 40 to 50 percent of chopper tip speed C. 55 to 65 percent of chopper tip speed D. 60 to 70 percent of chopper tip speed	**C**
334.	Which of the following is more suitable for ridge planting? A. Low rainfall areas B. High rainfall areas C. Dry conditions D. None of these	**B**
335.	The reel of combine harvester do not helps in A. Preventing shattering of the crop B. Allow crop to move uniformly to platform C. Handle matted crop D. Picking up shattered grains	**D**
336.	The thresher causes more seed damage if A. Speed is increased B. Clearance is increased C. Speed is decreased D. Feed rate is reduced	**A**
337.	The metering mechanism used in potato planter is A. Fluted roller B. Brush feed type C. Picker wheel type D. Cell feed type	**C**
338.	The action involved in harvesting of crops is A. Scissors action B. Tearing action C. Slicing action D. All of these	**D**
339.	Planter is different from seed drill in respect to A. Power transmission B. Metering mechanism C. Furrow opener D. None of these	**B**
340.	Spinning disc is used in A. Low volume spray B. High volume spray C. Ultra low volume spray D. Foam spraying	**B**

341.	The most common power transmission system used in seed drill is A. Belt and pulley B. Chain and sprocket C. Gears D. PTO Shaft	**B**
342.	Chemical energy is converted to.....energy by a fuel cell. A. Solar B. Electrical C. Potential D. Mechanical	**B**
343.	.....of seed drill is done to make sure that the drill is delivering the seed rate as per selection of the lever setting. A. Field operation B. Calibration C. Adjustment D. None of these	**B**
344.	Which one is called as precision drilling machine? A. Planter B. Seed drill C. Broadcaster D. All of these	**A**
345.	Pump of boom sprayer takes drive from A. Power take off shaft B. Crankshaft C. Camshaft D. None of these	**A**
346.	The seed metering plate, where the kernel lies flat in seed cell is called as A. Full hill drop B. Hill drop C. Edge drop D. Flat drop	**d**
347.	A stoichiometric air fuel ratio is A. Chemically correct mixture B. Lean mixture C. Rich mixture for idling D. Rich mixture for over loads	**A**
348.	The process of breaking up or a liquid into fine droplets by spraying is called..... A. Vaporisation B. Carburetion C. Ionization D. Atomization	**D**
349.	The major contributor to acid rain is A. NOx B. Hydrogen C. Sulphur D. None of these	**A**
350.	What is a dual fuel engine?	**A**

	A. The engine which uses gaseous and liquid fuel B. The engine which uses two liquid fuels C. The engine which uses two gaseous fuels D. The engine which uses one liquid and solid fuel	
351.	In electronic fuel injection, the maintenance cost is? A. Low B. High C. Zero D. None of these	**B**
352.	How do fuel cells generate electricity? A. Combustion B. Fusion C. Electrochemical reaction D. None of these	**C**
353.	What do fuel cells emit? A. Oxygen B. Hydrogen C. Nothing D. Water	**D**
354	What is surplus in cut and fill method through grid data a) it is the difference between volume all cuts and fills b) it is the difference between area all cuts and fills c) it is the difference of all rise and fall based on BS/IS/FS of grid data d) it is the difference of RL of all points with respect to BM	**D**
355	What is surplus in cut and fill method through grid data a) it is the difference between volume all cuts and fills b) it is the difference between area all cuts and fills c) it is the difference of all rise and fall based on BS/IS/FS of grid data d) it is the difference of RL of all points with respect to BM	**D**
356	In reiteration method of angle measurement through theodolite a) The final reading of the vernier should be same as its initial reading. b) The final reading of the vernier should have 90 degree difference from its initial reading. c) The final reading of the vernier should have 180 degree difference from its initial reading. d) The final reading of the vernier should have 270 degree difference from its initial reading.	**A**
357	Tick the wrong statement a) Level Surface is one where water do not move b) Level surface and horizontal surface are always same c) Level surface and horizontal surface are some times same d) horizontal surface is tangent to level surface	**B**
358	Tick the wrong statement a) BS is a positive sight b) IS is negative sight c) If instrument is shifted after 5th reading then there are three IS d) IS can be the last reading	**D**
359	What is true for contour lines a) All points on contour line have same elevation b) Two contour lines may intersect under some special case c) If contour lines are close to each other, it indicate gentle slope d) Closed contour lines with higher elevation towards the center indicate flat surface	**C**
360	In contour map, gradient is based on	**C**

	a) Contour interval and contour level b) Horizontal Equivalent and contour level c) Horizontal Equivalent and contour interval d) contour level only	
361	Tick the wrong statement a) RL of Change point can not be calculated b) FS is equal to RL subtracted from HI c) BM and RL are not the same d) CP have both FS and BS	**A**
362	Tick the wrong statement a) All contour lines must close either within the map boundary or outside b) Index contour line are the main contour lines which are thick and elevations are mention on it c) Intermediate contour lines are placed between regular contour lines to visualize small but important forms d) All contour lines have different elevation	**C**
363	Tick the right statement a) if the staff rod is not vertical, then it will cause error in readings b) Cross hair of level is also called stadia hairs c) there will be collimation error if line of sight is horizontal d) there is no need to check the bubble of auto level after each reading	**A**
364	Rise and fall method based on a) BS and FS b) IS c) two consecutive readings d) HI	**B**
365	Contour map provide a) physical characteristics of an area b) information of altitude of a point with respect to its location c) information regarding point of equal distance d) information regarding size of an object	**B**
366	The number mentioned on contour lines are a) contour time b) elevation of points on contour line c) contour interval d) Horizontal equivalent	**B**
367	the difference between level of two consecutive contour is called a) contour level b) elevation of points on contour line c) contour interval d) Horizontal equivalent	**C**
368	The horizontal equivalent is based on a) scale of the map b) number of contour lines on map c) contour interval d) shape of contour	**A**
369	Type of error when line of sight is not parallel is called a) parallax error b) collimation error c) loop misclosure d) dual error	**B**
370	The height of a point above datum is called a) Height of instrument b) Back sight c) Fore sight d) Reduced level	**D**

371	In case the line of collimation is not horizontal due to improper adjustment then a) error will be proportional to the distance between the point at which reading was taken from the instrument b) there is no relationship between error and distance c) there will a fix error to be added in all readings d) it will not cause an error	**A**
372	During leveling operation in a loop of 10 km, it was observed that the new height of 100 m Benchmark was 99.9 m. which statement will be true a) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is no need of adjustment of error b) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is a need of adjustment of error there is no need of adjustment of error c) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is a need of adjustment of error there is a need of adjustment of error d) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is no need of adjustment of error there is a need of adjustment of error	**A**
373	the supplementary contour lines are a) the main contour lines which are thick and elevations are mention on it b) the thinner, more common, lines between the index lines c) placed between regular contour lines to visualize small but important forms that regular contour lines are unable to show d) there is no such lines	**C**
374	drawing of right angle from a point outside of the line on the line when point is not accessible a) is not possible b) can be estimated c) possible by selecting two points on the line, then drawing two offsets and interaction of offsets is projected as required angle d) possible by selecting four points on the line, then drawing two offsets and interaction of offsets is projected as required angle	**C**
375	when chaining is obstructed but vision is free than a) parallel line cannot be drawn b) can be estimated c) parallel line can be drawn by taking two offsets of same length from the base line d) parallel line can be drawn by taking offsets of different length from the base line	**C**
376	when chaining and vision is obstructed a) parallel line cannot be drawn b) can be estimated c) parallel line can be drawn by taking two offsets of same length from the base line and projecting the line after obstacle and taking again two offsets back to the base line d) parallel line can be drawn by taking one offset of same length from the base line and projecting the line after obstacle and taking again one offset back to the base line	**C**
377	Whole circle bearings and quadrantal bearings have same numeric values when a) angle is less than 90 degree measured counter clock wise from north b) angle is less than 90 degree measured clock wise from north c) angle is less thanc90 degree measured counter clock wise from south d) angle is less than 90 degree measured clock wise from south	**B**
378	Keeping view the concept of Chain Traversing, which statement is true a) this traversing is not possible without angular measuring devices b) It is adopted when area cannot be divided into triangles like lake or standing crops c) it is done by tape only d) it is not suitable for closed traverse	**B**
379	Which statement is true a) fore bearing and back bearing has 360 degree difference b) using quadrantal bearings, changing the north into south is enough to convert fore bearing into back bearing	**D**

	c) if an angle is greater than 90 than it is considered as exterior angle d) None is true	
380	Keeping in view the area calculation which statement is true a) area obtained by mid ordinate method and Simpson rule is same in all cases b) when baseline cuts the boundary line, Trapezoidal rule can not be used c) when baseline cuts the boundary line, Trapezoidal rule be used by taking length of offset as Zero d) Simpson rule is not suitable for odd number of offsets	**C**
381	If there are offsets at irregular intervals a) mid ordinate method is used b) Trapezoidal method is used c) Simpson method is used d) None of these	**D**
382	Which type of survey is mostly adopted in the field of Agriculture on small scale a) Geodetic Survey b) Trigonometric Survey c) plane surveying d) Marine Surveying	**C**
383	the distance measured by tape is called a) Chaining b) Taping c) Both d) None	**A**
384	if the chain is longer than the actual length then a) the length measured will be smaller then the actual length b) the length measured will be greater then the actual length c) the area measured will be greater then the actual area d) the area measured will be equal to the actual area	**A**
385	Subsidiary Stations are a) Located at the start or end of the boundary b) located to run auxiliary lines for internal detail c) located outside of the area to run tie lines d) same as main station	**B**
386	Main stations should be located in such a way that a) many lines are to be drawn for locating internal details b) few lines are to be drawn for locating internal details c) many lines have to drawn instead of one single main line d) None of these	**B**
387	The longest Survey line is called a) base line b) check line c) tie line d) offset	**A**
388	Offsets are a) Perpendicular b) Oblique c) Both d) none	**C**
389	check lines are used a) as proof lines b) to locate exterior details c) to check accuracy d) as base line	**A**
390	Gunter's Chain has a) 66 links	**D**

	b) 33 links c) 100 links of 1 ft long d) 100 links of 0.66 ft long	
391	Engineers Chain is a) 100 ft in length b) 66 ft in length c) 33 ft in length d) 1000ft in length	**A**
392	Keeping in view the practical of pacing, which statement is true a) in 100 ft length, the number of paces of every surveyors is same b) in 100 ft length, the number of paces of every surveyors is not the same c) one pace is of 2.75 ft for every surveyor's irrespective of physic of surveyor d) none is true	**B**
393	Keeping in view the practical of offset, which statement is true a) perpendicular offsets can not be drawn in the field b) oblique off set can not be drawn in field c) length of perpendicular and oblique offset is same d) none is true	**D**
394	In reconnaissance survey a) detailed map of an area is prepared b) exact map of the area is prepared c) a hand sketch is prepared d) none is true	**C**
395	A pentagon constructed in the field should a) have all internal angles same b) have all internal angles as 90 degree each c) sum of angles should be 540 d) sum of angles should be 500	**C**
396	Local attraction in the field can be observed when a) back bearing and fore bearing of a line have 180 degree difference b) back bearing and fore bearing of a line don't have 180 degree difference c) can not be assessed in the field d) can be estimated	**B**
397	In radiation method plane table is placed a) in the approximate center of the area b) placed at each corner point of the area c) placed at two points in the area d) placed at least at four different points	**A**
398	In intersection method plane table is placed a) in the approximate center of the area b) placed at each corner point of the area c) placed at two points in the area d) placed at least at four different points	**C**
399	In traverse method plane table is placed a) in the approximate center of the area b) placed at each corner point of the area c) placed at two points in the area d) placed at least at four different points	**B**
400	in compass traversing a) surveyor's compass and prismatic compass is same in use b) prismatic compass is used for accurate measurement of angles c) Surveyor's compass is used for accurate measurement of angles d) none is true	**B**
401	Abney Hand level is used for a) distance measurement	**D**

	b) offset drawing c) measurement of horizontal angles d) measurement of vertical angles	
402	In resection Method of plane tabling a) positions of all points is exactly known b) points are already located on the plan before resection method c) points were first estimated and later are confirmed on the plan d) detailed map is prepared by estimation	**C**
403	Resection Method of plane tabling a) is same as intersection method b) is same as radiation method c) is used to draw plan directly d) is used to locate the stations	**D**
404	in cross staff survey a) readings out side of the rectangle are the distance of offsets from starting point to locate the position of offsets b) readings inside of the rectangle are the length of offsets c) triangle represents the corner with offset length as maximum d) readings inside of the rectangle are distances and outsiders are length of offsets	**D**
405	in cross staff survey a) readings out side of the rectangle are the distance of offsets from starting point to locate the position of offsets b) readings outside of the rectangle are the length of offsets c) triangle represents the corner with offset length as maximum d) it makes no difference of writing the values on left or right side of rectangle on sketch	**B**
406	in cross staff survey a) readings out side of the rectangle are the distance of offsets from starting point to locate the position of offsets b) readings inside of the rectangle are the length of offsets c) triangle represents the corner with offset length as Zero d) it makes no difference of writing the values on left or right side of rectangle on sketch	**C**
407	What is the relationship of the offset with check tie a) check ties are always used while locating an object b) check ties are never used while locating an object c) check ties may be used while locating an object depending upon situation d) there is no relationship between these two	**C**
408	In order to draw a perpendicular from a chain line following method is used a) 3,4,5 method b) tape swing method c) both d) None	**A**
409	In order to draw a perpendicular from a point on chain line following method is used a) 3,4,5 method b) tape swing method c) both d) None	**B**
410	If two ends of chain line may not visible from intermediate point then the length of the line a) cannot be measured b) is estimated only c) can be accurately find by developing a right angle triangle d) did not exists	**C**
411	When chainage is obstructed but vision is free between two points on chain line then the length of the line between such points can be found by a) by drawing a large right angle triangle b) Estimation	**A**

	c) Guessing d) None	
412	if there is a small cliff in the way of an established chain line, the length of line segment across the cliff a) cannot be measured b) can be measured by developing a triangle and using law of sine c) can be measured by developing a triangle and using double angle formula d) can be measured by developing a triangle and using law of cosine	**D**
413	which tool is best to measure distance in a windy zone a) cloth tape b) fiber tape c) Engineer's chain d) Measuring Wheel	**C**
414	The number of links in Engineer's and Gunter's Chain a) are the same b) Gunter's Chain has more links c) Engineer's Chain has more links d) it depends upon the surveyor to adjust the number of links	**A**
415	The ratio of Hoop stress and axial stress varies for thin walled pressure vessel a) 2 to 1 b) 0 to 1 c) 2 to 1.5 d) 3 to 2	**A**
416	The difference between thin walled and hick walled pressure vessel is a) the vessels having thickness greater than 0.1 are thick walled pressure vessel b) the vessels having thickness greater than 0.1m are thick walled pressure vessel c) the vessels having thickness to diameter ratio greater than 0.1m are thick walled pressure vessel d) the vessels having thickness to diameter ratio greater than 0.1 are thick walled pressure vessel	**D**
417	Using the concept of thin shell of revolution, which statement is true for radius used a) radius associated to axial stress has a constant value b) radius associated to hoop stress has a constant value c) both radius has variable values d) None	**C**
418	for the calculation of stress In thin walled pressure vessel a) only external pressure is important b) only internal pressure is important c) external and internal both pressure are important d) there is no role of pressure	**B**
419	Keeping in view the torsional loading, tick the false statement a) plane segment remain plane after application of load on circular rods b) maximum shear stress is developed at the surface of the shaft c) maximum shear strain is developed at the surface of the shaft d) plane segment remain plane after application of load on square rods	**D**
420	Keeping in view the torsional loading, the polar moment of inertia depends upon a) the mass of the shaft b) the material of the shaft c) the shape of the shaft d) torque transmission of the shaft	**C**
421	The diameter of the shaft is selected on the basis of a) allowable shear stress b) allowable angle of twist c) modulus of elasticity d) on the basis of shear stress or angle of twist which returns the higher value of diameter	**D**
422	the shear stress developed in shafts are based on a) torque only	**D**

	b) size only c) torque and size both d) none of these	
423	hollow shaft will transfer more torque if its____ is same as solid shaft a) Size b) Weight c) Length d) none of these	**D**
424	Simply supported beam is a) having both end fixed b) both end free c) one end fix one end free d) both end roller supported	**D**
425	Point Load is one a) which act on an area negligible as compare to the total area of object b) which act on an area 2percent compare to the the total area of object c) which act on one place d) which is distributed over an area	**A**
426	Bending moment is produced a) due to external forces only b) due to external forces and moments c) due to shape d) due to bending	**B**
427	shear force is a) working perpendicular to the beam axis b) working parallel to the beam axis c) working perpendicular x axis d) working parallel to the Y axis	**A**
428	Distributed load is converted to point load a) to maintain real field conditions b) to make calculation easy c) to increase the efficiency of the load d) to draw BM and SF dia	**B**
429	A beam is of 10 m length out of a distributed load of 100 N was spread over 8 m. The equivalent point load is a) 100 N b) 800 N c) 1000 N d) 8000 N	**A**
430	Which statement for Neutral Axis is not true a) an axis passing through the geometric center of the body b) an axis with zero shear c) an axis that divide compressional and tensional region d) an axis passes through max stress region	**D**
431	Maximum bending moment is a) always at the center of the beam b) always at the end of the beam c) depends upon loading d) depends upon shape only	**C**
432	In case of T beam, the stress distribution is based on a) distance from mid point of the beam b) distance from the geomatical center of the beam c) material of the beam d) none of these	**B**
433	Maximum bending moment is	**A**

	a) at the point where shear force is zero b) at the point where shear force is maximum c) at the center of the beam d) at the end of the simple supported beam	
434	For distributed load a) both shear force and bending moment diagram are drawn with curve lines b) both shear force and bending moment diagram are drawn with straight lines c) shear force diagram is drawn with curve lines d) Bending moment diagram is drawn with curve lines	**D**
435	If there are point and distributed load acting together on a beam then a) both shear force and bending moment diagram are drawn with curve lines b) both shear force and bending moment diagram are drawn with straight lines c) shear force diagram is drawn with curve lines d) Bending moment diagram is drawn with curve lines	**D**
436	If there are point and distributed load acting together on a beam then a) the shear force diagram will have inclined lines only b) the shear force diagram will have horizontal lines only c) the shear force diagram will have inclined lines with a sudden decline as vertical line at the point where point load is acting d) none of the above	**C**
437	Bending moment and shear force diagram depends upon a) the material of the beam b) the shape of the beam c) forces acting on the beam only d) acting forces and end supports types	**D**
438	output of strain gage is a) the magnitude of strain b) is processed to get the magnitude of strain c) deformation produced d) magnitude of the force	**B**
439	Spring torsion testing machine is used to a) measure the deformation in spring at a given torque b) measure the torque produced in the spring at different speeds c) measure the deformation in spring at a speed d) measure the torque produced in the spring at different angles	**D**
440	In torsional testing machine of shafts a) load can be changed b) the torque can be changed c) angle of twist can be changed d) none of these	**C**
441	Which thing decided the category of column as short, intermediate or long a) length of column b) diameter of column c) buckling load d) slenderness ratio	**D**
442	the relationship between equivalent length and actual length of the column is a) both are always same b) equivalent length is always greater than actual length c) equivalent length is always smaller than actual length d) depends upon the end connections	**D**
443	the relationship between maximum allowable load and Euler buckling load for column is a) Both are same b) Euler Buckling load is greater than maximum allowable load c) Euler Buckling load is smaller than maximum allowable load d) depends upon the situation	**B**

444	the machine used to draw stress strain relationship is called a) Universal Testing Machine b) Torsional Testing Machine c) Charpy Impact tester d) Hardness testing Machine	**A**
445	Cement briquette testing machine apply a) compressional load b) tensional load c) twisted load d) perpendicular load	**A**
446	While calculating the deformation under axial loading; which parameter will be changed if the shape of the object (machine element) under axial loading changed a) Load b) Modulus of elasticity c) Length d) Cross sectional area	**D**
447	While calculating the deformation under axial loading, which parameter will be changed if the material of the object (machine element) under axial loading changed a) Load b) Modulus of elasticity c) Length d) Cross sectional area	**B**
448	What would be factor of safety if stress developed in a machine element under axial loading is 80 MPa if the element is made of steel having allowable axial stress is 200 MPa a) 2.5 b) 0.4 c) 16 d) 4	**A**
449	How many types of stress are there in thin walled cylindrical shape pressure vessel? a) Two types; normal and shear b) Two types; axial and meridional c) Two types; hoop and tangential d) Two types; axial and hoop stress	**D**
450	In parabolic shape pressure vessel, the radius associated with stresses are a) Function of equation generating parabola and point at which stress are to be calculated b) Function of equation generating parabola only c) Function of the point at which stress are to be calculated d) Function of magnitude of the stresses	**A**
451	For a thin walled pressure vessel ration of thickness to radius is a) equal to 0.1 b) greater than 0.1 c) less than 0.1 d) less than or equal to 0.1	**C**
452	Why square shafts are not in practice? a) It is difficult to construct b) It will waste the material more as compared to circular shaft c) Plane segments are not plane after twisting d) The edges can damage the other part	**C**
453	During torsional loading in shafts, at what point the shear stress is maximum a) Shear stress is not present in this case b) It remain constant c) At the center of the shaft d) At the surface of the shaft	**D**
454	Which assumption is to prove the torsional formula? a) Tan of angle is equal to the angle in radians as the angles are so small	**A**

	b) Tan of angle is equal to the angle in degree as the angles are so small c) Sin of angle is equal to the angle in radians as the angles are so small d) sin of angle is equal to the angle in degrees as the angles are so small	
455	Hollow shaft transfer more power than solid shaft only if a) the size and material of both shafts will be the same b) the weight and size of both shafts will be the same c) the weight and material of both shafts will be the same d) the material of both shafts will be the same	**C**
456	the size of a steel shaft having 2m length designed to transmit 4000 Nm torque will depends upon a) Angle of twist and axial stress b) Maximum allowable shearing stress and radius of the shaft c) Angle of twist and Maximum allowable shearing stress d) Axial strength of the material and radius of the shaft	**C**
457	The size of hollow and solid shaft of same weight and length will be a) Same b) Solid will be greater in size as compared to hollow shaft c) Hollow will be greater in size as compared to solid shaft d) Not enough information to make such conclusion	**C**
458	Why a uniformly distributed load is replaced with a point load while solving numerical problems a) To make the calculation simple b) There is no uniformly distributed load in rea life problems c) It is not replaced d) Uniformly distributed load has more weight but less effect but point load has more effect	**A**
459	While developing the free body diagram, A fixed end is replaced with a) A vertical reaction b) A vertical and a couple c) Vertical and horizontal reaction d) Vertical and horizontal reaction with a couple	**D**
460	For a simply supported beam AB, if a point load P is acting acentric near to B support then a) Reaction at A will be higher b) Reaction at B will be higher c) Moment at A will be higher d) Moment at B will be higher	**B**
461	If a uniformly distributed load is acting on a simply supported beam AB then a) Reaction at A will be higher b) Reaction at B will be higher c) Both reactions will be equal d) Cannot be judged with the given data	**C**
462	If the end moment of a loaded beam having two supports only is zero, then it is due to a) It is due to load b) It is due to support type c) It cannot be zero d) There is some calculation error	**B**
463	If a uniformly distributed load of 50 N/ft is acting on 2 m length, its equivalent point load will be a) 100 N b) 25 N c) 328 N d) 0 N	**C**
464	If a point load P is acting on simply supported beam AB then a) The shear force diagram will cross the zero-shear force line at the point where load is acting b) The shear force diagram will cross the zero-shear force line at mid span c) The shear force diagram will not cross the zero-shear force line d) There is no relationship between load and shear force diagram	**A**
465	If a point load P is acting on simply supported beam AB then a) The bending moment will be maximum at the point where load is acting	**A**

	b) The bending moment will be maximum at the point where load is acting and the diagram will continue at its maximum value till the end support comes c) The bending moment will be maximum at mid span d) There is no relationship between load and bending moment diagram	
466	If the point load acting at mid span is replaced with uniformly distributed load throughout the span on a simply support beam AB then a) The shear force diagram will not change b) The Shear force diagram will change the shape from linear to curvilinear c) The sudden decrease in shear force diagram at mid span will be changed from gradually decreasing trend forming a sloping line which will cross zero shear line at midspan d) The sudden decrease in shear force diagram at mid span will be changed from gradually decreasing trend forming a sloping line which will not cross zero shear line	**C**
467	If the point load acting at mid span is replaced with uniformly distributed load throughout the span on a simply support beam AB then a) The bending moment diagram will not change b) The diagram will change the shape from linear to curvilinear c) The point of maximum bending will be shifted d) It can not be assessed from the given data	**B**
468	For a simply supported beam AB it is observed that a) The shear force diagram will cross the zero shear force line at one point which will have maximum bending moment b) The shear force diagram will cross the zero shear force line at one point but it will not the point with maximum bending moment c) The shear force diagram will cross the zero shear force line at many points d) It can not be assessed from the given data	**A**
469	For Neutral axis it is observed that a) There is compression force above the axis and tensions forces below the axis b) There is tension force above the axis and compression forces below the axis c) There are only tension forces on both sides of axis d) There are only compression forces on both sides of axis	**A**
470	The behavior of forces either in compression or in tension from neutral axis is a) Shows a decreasing trend as moves away from neutral axis b) Shows an increasing trend as moves away from neutral axis c) Compression forces shows increasing trend and tension forces shows decreasing trend d) Compression forces shows decreasing trend and tension forces shows increasing trend	**B**
471	The location of neutral axis depends upon the a) Length of beam b) Loading criteria of beam c) Shape of beam d) End support of the beam	**C**
472	The maximum flexural stress is located a) At the surface and mid span of beam b) At the center of cross section and mid span of beam c) At the surface of a point in the beam with maximum bending moment d) At the center a point in the beam with maximum bending moment	**C**
473	For designing of beam, that orientation of shape of beam is selected for which a) Moment of inertia is maximum b) Moment of inertia is minimum c) No relation with moment of inertia d) Any orientation is suitable	**A**
474	When parallel axis theorem is applied for the calculation of moment of inertia; a) in case of T beams b) in case of rectangular beams c) in case of circular beams d) in case of square beams	**A**

475	Changing the cross section (shape) of a loaded beam will a) change the flexural stress b) change the bending moment c) change the shear force diagram d) have no effect	**A**
476	for circular beams Ixx and Iyy is a) Same b) Ixx is greater than Iyy c) Ixx is smaller than Iyy d) Can not be assessed without dimension	**A**
477	The bending of long columns is called a) Moment of inertia b) Slenderness ratio c) Buckling d) Crashing	**C**
478	For designing of columns, that orientation of shape of beam is selected for which a) Moment of inertia is maximum b) Moment of inertia is minimum c) No relation with moment of inertia d) Any orientation is suitable	**B**
479	In Euler's formula L is a) Length of column independent of end types b) Equivalent length of column which depends upon end types c) It is load d) It is moment of inertia	**B**
480	Short, intermediate and long columns are differentiated on a) Slenderness ratio b) Length of the column c) Cross sectional area of the column d) Load on the columns	**A**
481	The structural member which is called a compression member is a) Beam b) Column c) Shaft d) Pressure vessel	**B**
482	Failure in short columns is known as a) Buckling b) Crushing c) Tilting d) Bending	**B**
483	The moment of inertia of solid and hollow cross section is a) Same b) Hollow has higher values c) Solid has higher values d) Cannot be assessed	**C**
484	Section modulus is a) Type of modulus of elasticity b) Relationship between stress and strain c) Shape factor d) Power factor	**C**
485	The x component of a force making an angle θ with Y axis is equal to a) F cos θ b) F sin θ c) F tan θ d) none	**B**

486	At what angles under Centric loading Normal and Shear Stresses are equal in magnitude a) 45, 90 b) 45, 90 and 135 c) 0, 90 d) 0, 190	**B**
487	In case of arbitrary loading, stresses are converted into force by multiplying with a) the given area b) cos of the area c) sin of the area d) with the component of the area at which stress is acting	**D**
488	while finding the stresses on a given plan by converting the stresses into force, the direction of required normal and shear stresses are assumed. In this case the answer a) should be positive b) should be negative c) there is no role of sign of the answer d) with negative sign represent that the assume direction was wrong	**D**
489	while finding the stresses on a given plan by using formula approach, sign of shear stress a) depends upon its upward or downward direction b) depends upon its upward or downward direction as well as on the direction of normal stress acting on the same plan c) is positive in upward direction when normal stress (acting on the same plane) is in compression d) is positive in upward direction when normal stress (acting on the same plane) is in tension	**B**
490	On orthogonal planes a) shear stresses has same magnitude b) shear stresses have same direction c) normal stresses are same d) None of above	**A**
491	Max in plane shear stress and max shear stress a) are always the same b) in some cases they are same and in some cases they are not c) has no relationship with principal stresses d) None	**B**
492	how many stresses are shown to draw max shear stress when it is not equal to max in plane shear stress a) 11 b) 3 c) 7 d) 9	**A**
493	Which statement is true a) strain and deformation are the same b) strain and stress are same c) strain has units d) strain has no unit	**D**
494	minimum number of strain gages required for plane strain analysis are a) 3 b) 5 c) 7 d) 9	**A**
495	When a field is called level it means a) all the points in the field are at the same distance from autolevel b) all the points will have same height of instrument c) all the points will have same staff reading if there is no change point d) all the points have same staff readings even if there are change points	**C**
496	The field readings are noted as 2, 2.1, 2.2, 1.3,1.5, 1.6 and 1.8. of the instrument is shifted after 3rd	**C**

	reading then the first intermediate sight after change point will be a) 1.3 b) 2.2 c) 1.5 d) 1.8	
497	Horizontal equivalent in contour map a) is constant all over the map b) is a variable quantity depending upon the contour interval c) is a variable quantity depending upon the contour line d) is a variable quantity depending upon the contour level	**C**
498	the supplementary contour lines are a) the main contour lines which are thick and elevations are mention on it b) the thinner, more common, lines between the index lines c) placed between regular contour lines to visualize small but important forms that regular contour lines are unable to show d) there is no such lines	**C**
499	In case of even number of areas. the prismoidal formula a) is not applicable b) can be applied to odd number of areas only c) can be applied to odd number of areas and area of rest of sections were calculated by trapeziodal formula d) is applied to even sections and left over volume is calculated by trapezoidal formula	**D**
500	When prismoidal correction is used for volumetric calculation a) in all volumetric calculations b) when we have two level surface c) when area was by trapezoidal formula d) when volume was calculated by trapezoidal formula	**D**
501	Which type of theodolite is now absolute a) transit type b) non transit type c) Vernier type d) micrometer type	**B**
502	the axis in which a telescope of the theodolite can be rotated in horizontal plane a) horizontal b) vertical c) trunnion d) parallel	**B**
503	foundation level depends upon a) ground level b) soil type c) required slope d) cost of project	**C**
504	We need to fill if a) ground level is greater then foundation level b) ground level is smaller then foundation level c) ground level is same as foundation level d) when the slope is low	**B**
505	if the ground has uniform slope then which formula is used to calculate the cross sectional area	**B**

	a) level section b) two level section c) three level section d) four level section	
506	the contour lines a) may or may not close b) never close c) must close within the map d) must close within or outside of the map	**D**
507	Type of error when line of sight is not parallel is called a) parallax error b) collimation error c) loop misclosure d) dual error	**B**
508	The height of a point above datum is called a) Height of instrument b) Back sight c) Fore sight d) Reduced level	**D**
509	The point which have back sight as well as fore sight data is called a) Bench Mark b) Temporary bench mark c) Change point d) there is no such point in leveling	**C**
510	in case the line of collimation is not horizontal due to improper adjustment then a) error will be proportional to the distance between the point at which reading was taken from the instrument b) there is no relationship between error and distance c) there will a fix error to be added in all readings d) it will not cause an error	**A**
511	What is the loop misclosure if the length of the loop is 5000 ft a) 14.8 mm b) 26.8 mm c) 468 mm d) 468 in	**A**
512	During leveling operation in a loop, it was observed that the new height of 100 m Benchmark was 99.87 m. the apparatus was shifted five times. What would be the adjustment for 3rd setup. a) 78 mm b) -78 mm c) 130 mm d) -130 mm	**B**
513	During leveling operation in a loop of 10 km, it was observed that the new height of 100 m Benchmark was 99.9 m. which statement will be true a) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is no need of adjustment of error	**A**

	b) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is a need of adjustment of error there is no need of adjustment of error c) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is a need of adjustment of error there is a need of adjustment of error d) The misclosure is 100 mm whereas the allowable misclosure was 37.9 mm so there is no need of adjustment of error there is a need of adjustment of error	
514	the height of contour line from some reference of MSL is called a) Contour level b) contour interval c) contour extension d) base value	**A**
515	the difference between the levels of consecutive contour lines a) Contour level b) contour interval c) contour extension d) base value	**B**
516	can contour lines intersect? a) No b) yes in case of cliff c) yes in case of overhanging vertical cliff d) yes in case of saddle	**C**
517	if volume calculated by trapezoidal formula is 2578 cubic meter and by prismoidal formula is 2600 cubic meter then prsimodial correction is a) 22 cubic meter b) - 22 cubic meter c) no need to calculate prismodial correction d) the data set given has some error	**d**
518	the difference between theodolite and auto level is a) both instruments are same just theodolite is more accurate b) both instruments are same just theodolite have higher visibility range c) theodolite can measure horizontal as well as vertical angles whereas auto level can only measure horizontal angles d) theodolite ca measure horizontal as well as vertical angles whereas auto level can only measured vertical angles	**C**
519	The ground level is 50 m at starting point and after 220 m it is 55 m. Find the depth of cutting or filling at 220 m if the formation level is 0.6 m above the ground level at starting point with uniform gradient of 1 in 50. a) 1.2 m cut b) 1.2 m fill c) neither cut nor fill d) data is not complete	**D**
520	Differential leveling a) is done to transfer bench mark b) is used for contouring c) is used for finding route details d) for plane tabling	**A**
521	In Profile leveling is used for a) Intermediate sights is always taken at fixed distance b) Intermediate sights is taken depending upon the track conditions	**B**

	c) only backsight and foresight is taken d) there is no foresight involved	
522	plane table is used when contouring is done by a) direct method b) radial line method c) grid method d) GPS	**B**
523	the staff rods which is used now a days are made of a) iron b) aluminum c) stainless steel d) plastic	**B**
524	while drawing the profile finished level a) is always above the ground level b) is always below the ground level c) is always below the formation level d) is always above the formation level	**D**
525	the basic concept behind the stadia method used for distance measurement is that when staff rod is moved away from autolevel a) difference in readings at stadia hairs will decrease linearly b) difference in readings at stadia hairs will increase linearly c) difference in readings at stadia hairs will decrease quadratically d) difference in readings at stadia hairs will increase quadratically	**B**
526	in adjusting the loop misclosure a) change point is not important b) total number of change points are important c) order of change point is important d) total number and order of change point are important	**D**
527	In direct method of contouring a) first BS is taken to find HI and then readings are taken at random points for IS b) first BS is taken to find HI and then readings are taken at predetermined points for IS c) first BS is taken to find HI and then readings are taken at such points with required IS d) first BS is taken to find HI and then readings are taken at equal distances for IS	**C**
528	In grid method of contouring a) it is assumed that there is a uniform slope between the corners depending upon the RL of corner points b) it is assumed that there is a uniform slope between the corners depending upon the IS/FS of corner points c) it is assumed that there is a uniform slope between the corners depending upon the distance between corner points d) it is assumed that there is a uniform slope between the corners depending upon the RL and distance between the corner points	**D**
529	In grid method of contouring a) it is assumed that all the sides of grid has same slope b) it is assumed that opposite the sides of grid has same slope c) it is assumed that all the sides of grid has uniform slopes that may vary depending upon the RL of points	**C**

	d) it is assumed that all the sides of grid has uniform slopes that may vary depending upon the FS/IS of points	
530	During estimation of cut and fill if A is existing Grid elevation and B is new Grid elevation then a) there will be cut if A>B equal to A-B b) there will be cut if A>B equal to B-A c) there will be fill if A>B equal to A-B d) there will be fill if A>B equal to B-A	**A**
531	based on duration, explosion is categorized as a) impact noise b) high end noise c) intensive noise d) dangerous noise	**A**
532	Traffic noise and construction noise has one common thing a) both belong to continuous noise category b) both are irritating c) both are disturbing d) both belongs to impact category	**A**
533	During lecture in class, the gossips of students can be considered as noise (based on its basic definition) a) Because it is not a proper place for gossips b) Because it is against discipline c) Because it is a high level sound d) It can not be consider as noise	**A**
534	in public address system, the noise can be controlled a) by focusing loud speaker towards audience b) by teaching the audience sign language c) by cancelling the party d) by using thousands of head phones	**A**
535	in Construction activities, the noise can be controlled by a) constructing temporary earth bund around the site using soil b) building a high wall around the construction site to prevent people coming near the site c) avoiding machinery d) by distributing ear plugs to whole community	**A**
536	Which type of construction is not included as Public work a) Utility stores b) Roads c) Streets d) none	**A**
537	Sub-steps suggested for land-use map development a) recording rainfall data b) Determining the average income of the people c) Draw the noise contour map. Subdivide the noise contours into noise zones d) None	**C**
538	Noise control measures for roads or highways include a) absorption effects of landscaping b) Using single roads c) using double roads d) None	**A**
539	Mitigation measures for noise control refers a) minimize the magnitude of the detrimental noise impacts b) minimize the magnitude of the road accidents c) minimize the cost of project d) minimize the time of project	**A**
540	which is not a factor for soil formation	**A**

	a) Vehicles b) Climate c) Time d) parent material	
541	what are the direct causes of land degradation a) noise pollution b) ozone layer depletion c) Land filling of wastes. d) None	**C**
542	over utilizing of lands include a) sowing seasonal crops b) The process of diminishing returns to land is in operation, and there is no natural recovery of its fertility. c) development of manmade forests d) noise pollution	**B**
543	The impacts of the projects on soil properties and processes can include a) noise pollution b) air pollution c) economics d) pollution	**D**
544	Environmental impacts can be categorized as a) noise pollution b) pre-primary impacts are social gatherings c) tertiary impacts includes north primary and secondary impacts d) Secondary impacts are those that are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed action.	**D**
545	Pertinent mitigation measures for soil and groundwater impacts include a) noise pollution b) it is not possible c) Use of roborts in place of human workers d) Liners could be used to provide a physical barrier to limit the movement of contaminant materials from waste-disposal sites into and through the subsurface environment	**D**
546	point source of pollution is also called a) discrete source b) diffused source c) multiple source d) None	**A**
547	ETPs refer to a) effluent treatment plants b) efficient treatment plants c) energy transfer plants d) environment treatment plants	**A**
548	which color coding is used for drinking purpose water a) Blue b) Green c) White d) gray	**A**
549	which is not a physical parameters of water quality a) Temperature b) Turbidity c) Total organic carbon d) Colour	**C**
550	total solids in water may be divided into a) suspended and dissolved solids	**A**

	b) heavy and light solids c) rocks and dust d) igneous and non igneous	
551	which method are useful to study the impact on water environment a) Matrix approach b) economical approach c) time approach d) None	**A**
552	which approach can be use for impact predicted of project on water environment a) Environmental indexing methods such as the WQI b) checklist approach c) matrix approach d) None	**A**
553	How many steps are involved in EIA of a project on water environment a) 6 b) 4 c) 2 d) 8	**A**
554	What is the last step of EIA of a project on water environment a) Impact mitigation measures b) impact prediction c) Description of existing water environment d) Identification of water quantity/quality impacts	**A**
555	Why EIA is needed? a) it is a mandatory legal requirement b) it is to create jobs c) it is to get more money for project d) it is to get more time for project	**A**
556	what are the benefits of EIA? a) It will create jobs b) it will Protect Environmental and Human Health c) it will more money for project d) it will more time for project	**B**
557	PEPA implemented in a) 1983 b) 1997 c) 2001 d) 2007	**B**
558	NIAP stands for a) National Impact Assessment Programme b) National & International Assessment Programme c) National Impact Amendment Programme d) National Impact Assessment Policy	**A**
559	IUCN stands for a) International Union for Conversion of Nature b) International Union for Conservation of News c) International Union for Convention of Nature d) International Union for Conservation of Nature	**D**
560	IEE stands for a) Initial Environmental Examination b) International Environmental Examination c) Initial Environmental Evaluation d) Initial Energy Examination	**A**
561	After 18th amendment, EIA as part of EPA is under a) Ministry of Food	**D**

	b) Ministry of Environment c) Ministry of Energy d) Ministry of Climate Change	
562	IEE is required for a) Listed on schedule B of Pakistan Environmental Assessment Procedures b) Projects likely to cause adverse environmental impacts c) Projects in Environmental Sensitive Areas may require d) Listed on schedule A of Pakistan Environmental Assessment Procedures	**A**
563	In extrapolative method of impact prediction includes a) prediction based on past and present data b) fulfillment of a desired target c) hypothetical prediction were made d) theoretical concepts only	**A**
564	Which model is used to predict impacts over time and space a) Mathematical model b) statistical model c) geographic model d) there is no such models exists	**C**
565	the prediction made by using various approach a) are 100 % accurate b) have some uncertainty c) are perfect d) are fake	**B**
566	Criterion and standard are a) same thing b) sometimes same c) different d) depends upon case to case	**C**
567	Which is not true about engineering drawing. A. It's a technical type of drawing B. It describes geometric features of all parts of a machine. C. It's an illustration of all parts of machine. D. It's combination of graphic and world languages	**C**
568	We use scaling in Engineering drawings because _____. A. It is easy to draw using scale B. Engineering objects are too large C. Modification is easy if we use scaling D. All of these	**B**
569	The drawing drawn without using instruments other than pencils and erasers is called _____. A. Manual Drawing B. Freehand drawing C. Instrumental drawing D. Both A & B	**B**
570	For making angles _____ instrument is used. A. Compass B. Divider C. Protector D. Both A & C	**D**

571	_____ line is used to show the internal detail of an object A. Parallel line B. Hidden line C. Both A & B D. None of these	**B**
572	_____ Instruments is used to draw parallel lines. A. Scale B. Compass and divider C. T-Square D. Both A&C	**C**
573	The most appropriate method of dividing a line into equal parts is by using_____. A. Using scale B. Compass C. Line divider D. All of these	**B**
574	The most appropriate method for drawing Ellipse is _____. A. Concentric method B. 4-Center method C. Rectangular Method D. Oblong method	**B**
575	If eccentricity value is approaching 0 it represents the ____shape? A.Parabola B. Ellipse C. Hyperbola D. Circle	**D**
576	Mark the true statement? a) There is only one focus point and two directrices for parabola. b) There are two focus point and many directrices for hyperbola. c) There are two focus point and two directrix for ellipse. d) There are two focus point and two directrix for hyperbola.	**D**
577	Which one is not synthetic material_____. a- PVC b- rubber c- wood d- asphalt	**c**
578	The operation of leveling to determine the elevation between two points is known as_____ a-Simple leveling b- fly leveling c- differential leveling d- none	**c**
579	Which one is not affecting the strength of concrete_____. a- Composition b- curing time c- water d- stress	**d**
580	Normal standard level for city traffic is_____. a- 60-70 dB b- 100-110dB c- 70-80 dB d- 50-60 dB	**c**
581	When there is high ground water then which method of land fill is suitable_____. a- Trench b- area c- canyon d-none of these	**b**
582	Wastes that will decompose rapidly especially in warm weather are called_____. a-residential waste b- MSW c- putrescible waste d- none of these	**c**
583	The space used for storage of grains_____. a- Dweller b- farm house c- farm stead d- farm service building	**c**
584	The closing error in a closed traverse is adjusted by_____. a- Lehman's rule b- Bowditch's rule c- slide rule d- none of above	**b**
585	The magnetic bearing of line is measured clockwise from_____up to line in whole circle bearing system a- East b- west c- north d- south	**c**
586	Mixture of wastes is called_____. a- residential b- commercial c- institutional d- commingled solid waste	**d**

587	Biological transformation of solid waste involves_____. a-Aerobic composting b- Anaerobic Digestion c- Both A &B d- Combustion	**b**
588	The ratio of actual vapor pressure to saturation vapor pressure is called_____. a- Saturation pressure b- superheated vapor c- water vapor d- relative humidity	**d**
589	The forces which have same line of action are called_____. a- collinear forces b- concurrent forces c- coplanar forces d- parallel forces	**a**
590	The relative movement between cross hairs and staff reading is known as_____ . a-Parallax b-collimation error c- refraction error d- none of above	**a**
591	In which phase the microbial activity is accelerated with the production of organic acids and lesser amount of hydrogen a-Acid phase b- maturation phase c-transition phase d-none of these	**a**
592	_____ is the unit operation in which collected waste materiasl are mechanically reduced in size. a- size reduction b- volume reduction c- densification d-none of above	**a**
593	The most dangerous factor for storage of grains is_____ a- High temperature b- humidity c- rodents d- microorganisms	**c**
594	When the curvature of earth is not taken into consideration then it is called_____ a- Plane surveying b- geodetic surveying c- both (a &b) d- none of above	**a**
595	The mixture of lime stone and clay is called_____. a- Cement b- sand c- concrete d- mortar	**a**
596	The ratio between the volumetric stress to the volumetric strain is called as_____ a- young's modulus b- modulus of elasticity c- rigidity modulus d- bulk modulus	**c**
597	Water logging is a source of_____. a- Air pollution b- Water pollution c- Soil pollution d- All of above	**c**
598	Inaccessible points may be located by the_____ a- Resection method b- intersection method c- radiation method d- none of above	**b**
599	Synthetic organic compounds and metals contained in Bio solids are_____. a-Selenium b- Nickel c- Mercury d- All	**d**
600	Water present underground surface is greater than water on ground surface about _____. a- 12 times b- 5 times c- 48 times d- 38 times	**d**
601	_____indicates the shifting of the instrument. a-Change point b- Height of instrument c- Both (a & b) d- None	**a**
602	Which gases have major contribution in producing Global Warming_____. a- Carbon dioxide, methane, nitrous oxide b- Water vapour, carbon monoxide, ethane c-sulphure dioxide, ammonium nitrate, nitrogen d- None of above	**A**
603	Which of the following is Active Remote sensor_____. a-RADAR b-LIDAR c-Both a & b d-None of the above	**C**
604	Vegetable waste is a type of _____. a- Biodegradable waste b- Integrated waste c- Non biodegradable waste d- None of above	**a**
605	_____is provided when landfill site is filled to its full capacity. a-Cell b- Daily Cover c- Lift d- Final Cover	**D**
606	A convenient direction is assumed as a meridian for the survey of a small area known as_____. a- True meridian b- magnetic meridian c- arbitrary meridian d- grid meridian	**c**
607	The temperature at which the ash resulting from burning will form clinker_____. a- Ash point b- fusion point c- flash point d- none 0f these	**b**
608	The physical properties of MSW are_____. a- Specific weight b- moisture content c- particle size d- all of above	**d**
609	Feasibility of combustion of solid waste depends on-_____. a-physical properties b- chemical properties c - both a & b d- none of above	**b**
610	The assumed several lines parallel to true meridian for a particular zone_____.	**d**

	a- True meridian b- magnetic meridian c- arbitrary meridian d- grid meridian	
611	Agricultural residues includes_____. a- farmyard manure b- Crop residue c- Slurry d-All of above	**d**
612	The mostly used material at farm house is _____. a- Concrete b- wood c- bricks d- terra cotta	**b**
613	Which are composed of chain of amino acids? _____. a- Protein b- lipids c- fats d- none	**a**
614	Fermentation is a_____process. a- Natural b- Artificial c- Both a & b d- None	**a**
615	Types of bio gas plants are _____ a-Floating type b- Dome Type c- Bag Type d- all of above	**d**
616	High quality bio solids can be used for_____. a-Mine site rehabilitation b- Road bases c- Growing crops d- Oil from sludge	**c**
617	Modes of heat transmissions are_____. a- Conduction b- convection c- radiation d- all of above	**d**
618	The angle of a line makes with the magnetic meridian is_____. a- Reduced bearing b- magnetic bearing c- whole circle bearing d- all of above	**b**
619	The liquid has percolated through solid waste and has extracted dissolved material is called_____. a- Landfill b- Leachate c-a & b d- None	**b**
620	Combustion of waste in control environment condition is called_____. a- Recycling b- Landfill c-Incineration d- None	**c**
621	Optimum moisture content of material _____composting rate a- Increase b- Decreases c- no effect d- all of above	**a**
622	Rubber is a type of _____. a- Biodegradable waste b- Integrated waste c- Non biodegradable waste d- All of above	**c**
623	_____is produced due to anaerobic digestion of organic waste a-Biogasb- Carbon dioxide c- Carbon monoxide d-all of above	**a**
624	Paints are used as_____. a- Coating material b- preservatives c- water resistant d- none	**b**
625	Biogas can be produced by_____. a- farmyard manure b- Crop residue c- kitchen waste d- All of above	**d**
626	What is the shape of trickling filter_____. a-Round, thin b-Square , thin c-Round, square d- none	**c**
627	Open traverses is suitable in survey of_____. a- Ponds b- rivers c- estates d- lakes	**b**
628	Soil erosion is a type of_____. a- Natural source pollution b- Manmade source pollution c- Agricultural pollution d- None of these	**a**
629	The example of Statically indeterminate structures are_____. a- continuous beam b- cantilever beam c-over-hanging beam d- both cantilever and fixed beam.	**a**
630	Source of municipal waste are_____. a- Domestic waste b- Commercial waster c- Industrial waste d- All of above	**d**
631	Which senses the change in the environmental changes_____. a- Skin b- Trees c- Man d- Health	**d**
632	Ferrous material are separated from other using their ____ properties a- Chemical properties b- magnetic properties c- conduction	**b**
633	System in which Newton's law are applicable is_____ . a-natural system b-Inertial system c-non inertial system d-none	**b**
634	A magnetic needle is suspended freely, unaffected by magnetic substances, it indicate a direction_____. a- True meridian b- magnetic meridian c- arbitrary meridian d- grid meridian	**b**

635	If time contact decreases disinfection will be_____. a- decrease b- increases c- constant d- none of these	**a**
636	Single liners not consist of_____. a- clay b-Geosynthetic clay c- Concrete d- A geomembrane	**c**
637	Rods used for ranging are_____. a- Staff rod b- ranging rod c- both a and b d- none of above	**b**
638	Co-efficient of thermal capacity of a material to that of water is called: a- Specific heat b- latent heat c- ambient temperature d- sensible heat	**a**
639	The temperature of surrounding medium is called_____. a- Heat b- latent heat c- ambient temperature d- sensible heat	**c**
640	The most commonly used chemical disinfectant in universe_____. a- iodine b- phenol c- chlorine d- none of these	**c**
641	Most ductile and malleable material is_____. a- Concrete b- wood c- bricks d- steel	**a**
642	Principle energy product obtained from anaerobic digestion process is_____. a- Fermentation b- Biogas c- producer gas d- None	**b**
643	When the whole circle bearing of a line is converted into quadrantal bearing, it is called_____. a- Magnetic bearing b- reduced bearing c- both a and b d- none of above	**b**
644	The space used for housing of implements_____. a- Dweller b- farm house c- farm stead d- farm service building	**a**
645	Survey which depict the natural features of country are known as_____. a- Cadastral surveys b- topographic surveys c- Engineering surveys d- none of above	**b**
646	A metabolic process in which an organism converts a carbohydrate into alcohol or acid is called_____. a- Fermentation b-anaerobic digestion c- Both a & b d- None	**a**
647	TDS in drinking water according to WHO should be_____. a->1000 mg/liter b-<1000 mg/liter c- 1500 mg/liter d- 400 mg/liter	**b**
648	Combustion of toxic waste is called_____ a-Combustion b- Pyrolysis c- Incineration d- All of above	**c**
649	To reduce the volume and weight of solid waste is called _____ A- Waste Generation B- Waste Handling C-Waste Collection D-Waste Transformation	**d**
650	In a Cantilever beam, the maximum bending moment is induced at_____. a-at the free end b- at the fixed end c- at the mid span of the beam d- none of the above	**a**
651	Water having a pH value 3 is_____. a-Acidic b-Alkaline c-Hard d-Soft	**a**
652	Nitrate more than 50ppm in water leads to diseases called_____. a-Typhoid b- Mathenoglobenemia c- Gaestroenteritis d-mottled teeth	**b**
653	A minimum amount of fluorides is desirable in portable water to prevent_____. a-Scale formation b- corrosion c-dental cavities d-water borne disease	**c**
654	The alkalinity or acidity of a sample of water is determined by_____. a-MPN index b-E coli index c-pH value d-Electomatric method	**c**
655	The presence of manganese in water causes growth of_____. a-Mosquitoes b- Microorganism c-Flies d- Algae	**b**
656	The red brownish color of water is due to the presence of dissolved impurities of____. a-Bi carbonate b-sulphate c- Arsenic d-Iron and manganese	**d**
657	Disinfection of water removes_____. a-Hardness b- Turbidity c-Arsenic d- Iron and manganese	**c**
658	The process of killing organism in water is called_____. a-Sedimentation b-Coagulation c- Aeration d-Disinfection	**d**
659	The process of killing infective bacteria in water is called_____. a-Sterilization b- Disinfection c- Sedimentation d-Coagulation	**a**
660	Diseases such as typhoid are caused by bacteria called_____. a-Non pathogenic bacteria b- Anaerobic bacteria	**c**

	c-pathogenic bacteria d-Aerobic bacteria	
661	A sample of water is added to a medium of agar and incubated at 370 for 24 hrs. Colonies of bacteria are formed. This test is called_____. a-Total count test b- presumptive test c- Confirmative test d-Membrane filter test	**a**
662	Iron and Manganese are removed_____. a-Aeration b-chlorination c-filtration d-lime soda treatment	**a**
663	The process of retaining water in a basin so that the suspended particles may settle as a result of the action of gravity is termed as_____. a-Sterilization b-filtration c-chlorination d-sedimentation	**d**
664	The chemical name of alum is _____. a-Aluminum chloride b-Silver nitrate c- aluminum Sulphate d- Copper Sulphate	**c**
665	Very fine suspended and colloidal impurities are removed by a process called_____. a-Softening b- Disinfection c- coagulation d- plain sedimentation	**c**
666	The slow sand filter is more efficient in removing bacteria because_____. a-Effective size of sand grain is small b-Uniformity coefficient of sand is small c-water is pretreated d-size of filter is large	**a**
667	The difference between the water level in the filter chamber and the outlet chamber is known as_____. a-Negative head b- pressure head c- Working head d-Static head	**b**
668	Insufficient washing of sand grains in a rapid sand filter causes _____. a-Air binding b- Mud Balls c- Shrinkage of media d- Expansion of media	**d**
669	The type of filter which is preferred for treating small quantities of water in railway stations and individual industries is _____. a-Slow sand filters b- pressure filters c- rapid sand filter d- gravity filters	**B**
670	Tolerable limit of Nitrogen in air is ____ a. 5mg/L, b. 0.1 mg/L b. 1 mg/L, d. 25 mg/L	**A**
671	In water chemical treatment plant, chloramines ensure _____ a. Taste and odour control b. Weed control in reservoirs c. Disinfection d. Removal of permanent hardness	**c**
672	Which is the best and the most effective method for the removal of organic contaminant present in the polluted water in very small quantity for example < 200 mg/litre? a. Biological oxidation pond b. Activated carbon adsorption c. Lagooning d. Chemical coagulation	**B**
673	Which is a secondary air pollutant? a. Sulphur dioxide b. Dust particles c. Photochemical smog	**C**

	d. Nitrogen dioxide	
674	One hectare is equal to _____ a. 2.47 acres b. 0.5 kilometer square c. 43560 feet square d. 1000 meter square	**A**
675	Revised standard for Total suspended solids into sea according to National Environmental Quality Standards is ____ a. 250 mg/L b. 200 mg/L c. 150 mg/L d. 500 mg/L	**B**
676	Revised standard for Total dissolved solids into sea according to National Environmental Quality Standards is ____ a. 500 mg/L b. 1000 mg/L c. 2500 mg/L d. 3500 mg/L	**D**
677	Permissible maximum contaminant level for Total Chromium in drinking water according to USEPA ____ a. 0.01 mg/L b. 0.1 mg/L c. 1.0 mg/L d. 0.5 mg/L	**B**
678	Permissible limits for five days BOD into sea according to revised standards of NEQS is ____ a. 1000 mg/L b. 500 mg/L c. 250 mg/L d. 80 mg/L	**D**
679	In stratosphere the temperature increases up to ____ a. – 10 ℃ b. 0 ℃ c. 10 ℃ d. 100 ℃	**A**
680	Troposphere ranges from ____ a. 10 to 50 km b. 50 to 100 km c. 100 to 200 km	**a**

	d. None of the above	
681	Ionosphere is from ___ a. 0 to 100 km b. 10 to 50 km c. 50 to 80 km d. 80 to 100 km	**D**
682	Frequency of visible light is ____ a. 220 to 380 nm b. 320 to 400 nm c. 400 to 900 nm d. 900 to 2500 nm	**c**
683	Nitrogen in air is ____ a. 8 % b. 28 % c. 58 % d. 78 %	**D**
684	Oxygen in air is ____ a. 21 % b. 31 % c. 51 % d. 71 %	**A**
685	Coliform bacteria are _____ a. Pathogenic in nature b. Pollution indicator c. Both a & b d. None of the above	**b**
686	Incineration of municipal waste is carried out at temperature range _____ a. 250 to 500℃ b. 500 to 700℃ c. 700 to 900℃ d. 900 to 1100℃	**d**
687	Suppose a gas flow with no variation in its density then the flow is known as: A. Compressible fluid B. Unsteady flow C. Incompressible fluid D. Steady flow	**C**
688	If we use mercury in a differential manometer what is its value? A. 1 B. 13.55	**B**

	C. 26 D. 2.6	
689	The_____ is measure of fluid's resistance to shear or angular deformation. A. Kinematic Viscosity B. Dynamic Viscosity C. Absolute Viscosity D. Both B & C	**D**
690	The value of the Bulk Modulus of elasticity for an in compressible fluid is? A. Zero B. Infinity C. Unity D. Very low	**B**
691	The venture meter is a device used for measuring_____. A. Head loss B. Discharge C. Reynolds Number D. Roughness	**B**
692	The Sheet of water flowing over the weir crest is known as: A. Nappe B. Vein C. Head D. Both A & B	**D**
693	When a body floating in a liquid is displaced slightly, it oscillates about A. Center of gravity B. Center of buoyancy C. Center of pressure D. Metacenter	**D**
694	The buoyant force on anybody is equal to --------- of fluid displaced. A. Mass B. Volume C. Weight & Volume D. Weight	**C**
695	As diameter of the pipe increases, the head loss will A. Increases B. Decreases C. Remains same D. None of these	**B**
696	_____ is used to demonstrate water surge. A. Orifice Apparatus B. Water Hammer Apparatus C. Hydraulic Bench D. Cut-throat flume	**B**
697	The sum of pressure head and the elevation head is called. A. Energy Head B. Hydraulic Head C. Piezometric Head D. All of these	**D**

698	Kinematic viscosity is usually measured in cm2/sec which is also called. A. Poise B. Joule C. Stoke D. Pascal-Second	**C**
699	Differential manometer gives the ……among two pressures. A. Variation B. Difference C. Absolute D. Both A & B	**D**
700	When water hits the anti-pump device the hydraulic energy is converted to A. Electrical Energy B. Mechanical Energy C. Hydraulic Energy D. None of the Above	**A**
701	The combination of elevation head and velocity head is known as A. Hydraulic grade line B. Energy grade line C. Both A & B D. None of the Above	**D**
702	The figure contains irregularity and inertia forces is known as A. Roughness factor chart B. Pie-chart C. Moody Diagram D. None of the above	**C**
703	The energy grade line is always……than the hydraulic grade line. A. Above B. Below C. At same level D. None of these	**A**
704	The ----------type of turbine works on the principal of centrifugal force. A. Inward flow B. Outward flow C. Axial flow D. Radial flow	**B**
705	If buoyancy force is equal to the weight of body, then the body will A. Sink B. Float C. Both A & B D. None of these	**B**
706	The total energy head in HGL is A. $Z + \frac{p}{\gamma} + \frac{v^2}{2g}$ B. $Z^2 + \frac{p}{\gamma} + \frac{v^2}{2g}$	**A**

	C. $Z + 2\frac{p}{\gamma} + \frac{v^2}{2g}$ D. $Z + \frac{v^2}{2g}$	
707	The mechanics of liquids and gases which is based on the same fundamental principles that are employed in the mechanics of solids is called_____. A. A. Fluid Flow System B. B. Solid Mechanics C. C. Liquid and gas Mechanics D. D. Plasma mechanics	**C**
708	The combining of classical hydrodynamics with the study of real fluid is related to the science, called_____. A. Hydraulics Engineering B. Hydrodynamics Engineering C. Water Engineering D. Classical Hydraulics	**B**
709	_____ having temperature and pressure very near to the liquid phase. A. Solid B. Gases C. Liquids D. Vapors	**D**
710	Glycerin at a specific gravity of 1.44 has density in g/cm3 and Specific weight in kN/m3. A. 1440 and 14126.4 B. 1.44 and 14.1264 C. 1.44 and 14126.4 D. 14400 and 14.1264	**C**
711	The R2 _____ with the increase in the distance from earth's center A. Increases B. Reduces C. No change D. None of the above	**B**
712	The change in pressure during compressibility of a liquid is _____to its bulk modulus of elasticity. A. In a straight line B. Inversely C. No change D. None of the above	**A**
713	The_____ is measure of fluid's resistance to shear or angular deformation. A. Kinematic viscosity B. Dynamic viscosity C. Absolute viscosity D. Both B and C	**D**
714	Specific weight water at 20ºC (1013 m.bar, abs) with g = 9.8m/s2 is_____. A. 63.01 lb/ft3 B. 9.8kN/m3 C. 8.91 kN/m3 D. None of the above	**A**
715	For air the value of gas constant R is _____. A. 8312 287 N.m/(kg.K) B. 287 N.m/(kg.K) C. 8132 287 N.m/(kg.K) D. 278 287 N.m/(kg.K)	**B**
716	Two clean glass plates separated by 1.3mm the water will rise mm for a surface tension value of 0.0745 N/m.	**B**

	A. 11.61m B. 23.23m C. 0m D. 11.61mm	
717	The unit of viscosity is poise which is equal to_____ Ns/m2. A. 1 B. 0.01 C. 0.10 D. 0.001	**C**
718	Kinematics viscosity is usually measured in m2/s which is equal to _.....stoke. A. 0.0001st B. 1 C. 0.001st D. 1000st	**A**
719	A fluid for which the constant of proportionality (i.e. the viscosity) does not change with rate of deformation is said to be a_____. A. Non Newtonian fluid B. Newtonian Fluid C. Viscous Fluid D. None of the above	**A**
720	Bernoulli's equation cannot be applied when the flow is A. rotational B. turbulent C. steady D. Both A and B	**D**
721	According to Archimede's principle, if a body is immersed partially or fully in a fluid then the buoyancy force is _____ the weight of fluid displaced by the body. A. equal to B. less than C. more than D. unpredictable	**D**
723	What is the correct formula for absolute pressure? A. Pabs = Patm – Pgauge B. Pabs = Pvacuum – Patm C. Pabs = Pvacuum + Patm D. Pabs = Patm+ Pgauge	**D**
724	if the mass of an identical fluid volume along with its local average velocity are alike at all points in a flow field then it is known as A. Uniform B. Varied C. Steady D. Spatially Constant	**D**
725	Suppose a gas flow with no variation in its density then the flow is known as A. Compressible B. Unsteady C. Incompressible D. Steady	**C**
726	In a flowing water if the front of eddies is towards the front more than the backside then the flow is known as A. Gravity flow B. Supercritical flow	**B**

	C. Steady flow D. Subcritical flow	
727	The temperature above which a fluid changes its phase permanently is known as A. Absolute temperature B. Critical pressure C. Both A and B D. None of the above	**D**
728	Steady flow is also A. Inviscid B. Stream line C. IR-Rotational D. Both B and C	**D**
729	……. always develop whenever there is a motion relative to a body. A. Shearing force B. Tangential force C. Internal force D. Both B and C	**D**
730	The flow around a body is one example of ……. A. Streamline flow B. Streamline and equipotential lines flow C. Flow net D. Both B and C	**D**
731	Differential manometer gives the ……among two pressures A. Variation B. Difference C. Both A and B D. None of the above	**C**
732	……. component is responsible of flow when a fluid flows due to gravity. A. Component tangent to the plane B. Component along the plane C. Sign component D. Both B and C	**D**
733	The flows from the gates of a barrage changes from A. Supercritical to critical and then subcritical B. Subcritical to critical C. After hydraulic jump changes to Subcritical D. All of the options	**D**
734	When water hits the anti-pump device the hydraulic energy is converted to A. Electric energy B. B. Mechanical energy C. Hydraulic energy D. None of the above	**A**
735	The combination of elevation head and velocity head is known as A. Hydraulic grade line B. Energy grade line C. Both A and B D. None of the above	**D**
736	For a fully-developed pipe flow, how does the pressure vary with the length of the pipe? A. Linearly B. Parabolic C. Exponential D. Constant	**A**

737	The critical value of RN for uniform pipes with unusual irregularities is equal to A. 2000 B. 0..002m2/s C. 0.08m/s D. None of the above	**D**
738	Which of the following is a dimensionless equation? A. Reynold's equation B. Euler's equation C. Weber's equation D. All of the above	**D**
739	Which of the following equations is not dimensionally homogeneous? Consider standard symbols for quantities. A. (Force) F = m x a B. (Head Loss due to friction) hf = (f L V2) / (2 g d) C. (Torque) T = F x Distance D. None of the above	**D**
740	What is the effect of change in Reynold's number on friction factor in turbulent flow? A. As the Reynold's number increases the friction factor increases in turbulent flow B. As the Reynold's number increases the friction factor decreases in turbulent flow C. change in Reynold's number does not affect the friction factor in turbulent flow D. unpredictable	**A**
741	The friction factor in fluid flowing through pipe depends upon A. Reynold's number B. relative roughness of pipe surface C. both a. and b. D. none of the above	**C**
742	Friction factor for laminar flow is given by A. (Re /64) B. (64 / Re) C. (Re / 16) D. (16 / Re)	**B**
743	Shear stress in a turbulent flow is given by the formula	**D**

	$\tau = \eta (du / dy)$ Where η (eta) is, A. eddy viscosity B. apparent viscosity C. virtual viscosity D. all of the above	
744	The cylindrical portion of short length, which connects converging and diverging section of venturimeter, is called as A. diffuser B. connector C. throat D. manometer tube	**C**
745	Which of the following devices does not use Bernoulli's equation as its working principle? A. Venturimeter B. Orifice-meter C. Pitot tube D. None of the above	**D**
746	Blood circulation through arteries is A. laminar flow B. turbulent flow C. rotational flow D. None of the options	**A**
747	Newtonian fluid is defined as the fluid which A. Obeys Hook’s law B. Is compressible C. Obeys Newton’s law of viscosity D. Is incompressible	**C**
748	If the Reynolds number is less than 2000, the flow in a pipe is A. Turbulent B. Laminar C. Transition D. (D) None of the above	**B**
749	A flow is called super-sonic if the A. velocity of flow is very high B. discharge is difficult to measure C. Mach number is between 1 and 5 D. Mach number is less than 1	**C**
750	The unit of pressure one bar is	**C**

	A. 1 Pascal B. 1 kilo Pascal C. 100 kPascal D. 1000 kPascal	
751	The dynamic viscosity of a liquid is 1.2 × 10-4 Ns/m2, whereas, the density is 600 kg/m3. The kinematic viscosity in m2/s is A. 72 × 10-3 B. 20 × 10-8 C. 7.2 × 103 D. 70 × 106	**B**
752	The location of the centre of pressure over a surface immersed in a liquid is A. always above the centroid B. will be at the centroid C. will be below the centroid D. for higher densities it will be above the centroid and for lower densities it will be below the centroid	**C**
753	The continuity equation is the result of application of the following law to the flow field A. First law of thermodynamics B. Conservation of energy C. Newtons second law of motion D. Conservation of mass	**D**
754	Reynolds number signifies the ratio of A. gravity forces top viscous forces B. inertial forces to viscous forces C. inertia forces to gravity forces D. buoyant forces to inertia forces	**B**
755	In pipe flow the critical Reynolds number is about A. 640 B. 5 × 105 C. 2000 D. 64000	**C**
756	Anemometer is used to measure A. Velocity B. Pressure C. Viscosity D. Density	**A**
757	Property of fluid that describes its internal resistance is known as: A. Viscosity B. Friction C. Resistance D. Internal energy	**A**

758	Which fluid does not experience shearing stress during flow? A. Pseudoplastic B. Dilatant C. Newtonian D. Inviscid	**D**
759	Viscous forces are not present in A. rotational flow B. irrotational flow C. laminar flow D. none of the above	**B**
760	The fluid will rise in capillary when the capillary is placed in fluid, if A. the adhesion force between molecules of fluid and tube is less than the cohesion between liquid molecules B. the adhesion force between molecules of fluid and tube is more than the cohesion between liquid molecules C. the adhesion force between molecules of fluid and tube is equal to the cohesion between liquid molecules D. cannot say	**B**
761	What is an ideal fluid? A. A fluid which has no viscosity B. A fluid which is incompressible C. A fluid which has no surface tension D. All of the above	**D**
762	Newton's law of viscosity states that A. the shear stress applied to the fluid is directly proportional to the velocity gradient (du/dy) B. the shear stress applied to the fluid is inversely proportional to the velocity gradient (du/dy) C. the shear stress applied to the fluid is directly proportional to the specific weight of the fluid D. the shear stress applied to the fluid is inversely proportional to the specific weight of the fluid	**A**
763	What are the dimensions of force? A. [M L T – 2] B. [M L T – 1] C. [M L 2 T – 2] D. [M L 2 T 2]	**A**
764	Minor losses do not make any serious effect in A. short pipes B. long pipes C. both the short as well as long pipes D. cannot say	**B**

765	Minor losses occur due to A. sudden enlargement in pipe B. sudden contraction in pipe C. bends in pipe D. all of the above	**D**
766	The head loss through fluid flowing pipe due to friction is A. the minor loss B. the major loss C. both a. and b. D. none of the above	**B**
767	Coefficient of friction for laminar flow is given as Where, Re = Reynold's number A. (Re / 32) B. (32 / Re) C. (Re / 16) D. (16 / Re)	**D**
768	How should be the viscosity of the flowing fluid for laminar flow? A. viscosity of the fluid should be as low as possible, for laminar flow B. viscosity of the fluid should be as high as possible, for laminar flow C. change in viscosity of the flowing fluid does not affect its flow D. unpredictable	**B**
769	The flow of fluid will be laminar when, A. Reynold's number is less than 2000 B. the density of the fluid is low C. both a. and b. D. none of the above	**C**
770	In a steady, ideal flow of an incompressible fluid, total energy at any point of the fluid is always constant. This theorem is known as A. Euler's theorem B. Navier-stockes theorem C. Reynold's theorem D. Bernoulli's theorem	**D**
771	The study of force which produces motion in a fluid is called as A. fluid statics B. fluid dynamics C. fluid kinematics D. none of the above	**B**
772	The imaginary line drawn in the fluid in such a way that the tangent to any point gives the direction of motion at the point, is called as A. path line B. streak line C. filament line D. stream line	**D**

773	The actual path followed by a fluid particle as it moves during a period of time, is called as A. path line B. streak line C. filament line D. stream line	**A**
774	Which property of the fluid offers resistance to deformation under the action of shear force? A. density B. viscosity C. permeability D. specific gravity	**B**
775	The specific weight of the fluid depends upon A. gravitational acceleration B. mass density of the fluid C. both a. and b. D. none of the above	**C**
776	Inter molecular cohesive force in the fluids is A. less than that of the solids B. more than that of the solids C. equal to that of the solids D. unpredictable	**A**
777	Which branch of fluid mechanics deals with translation, rotation and deformation of the fluid element without considering the force and energy causing such motion is called as A. fluid dynamics B. fluid kinematics C. fluid kinetics D. hydraulics	**B**
778	Shear stress in static fluid is A. always zero B. always maximum C. between zero to maximum D. unpredictable	**B**
779	A same specification pump operates better in…. A. Faisalabad B. Karachi C. Gujranwala D. Jhelum	**D**
780	Which one of the following is a correct statement? A. In juice factory the open impeller pumps are best choice B. Drain water should be handled with closed impeller pumps C. Canal water should be handled with semi-open impeller pumps D. Milk must be handled with open impeller pumps	**C**
781	A centrifugal pump with same specifications can give the better performance when treat one of the following……. with same percentage of water/milk in case of juices/milk shake. A. Orange juice B. Date milk shake C. Apple juice	**A**

	D. Apple milk shake	
782	The most influential pressure in pumps that can be responsible to damage the pumps internal parts is known as A. NPSH required B. NPSH Available C. Water pressure D. Suction pressure	**B**
783	In pumps, water/liquid moves from …….. to …….. . A. Lower pressure to higher pressure B. Higher pressure to lower pressure C. Lower inlet pressure to higher outlet pressure D. Higher inlet pressure to lower outlet pressure	**C**
784	Hand pump operates under the ……. A. Positive displacement phenomena B. Reciprocating and pressure difference phenomena C. Rotary pump phenomena D. Plunge type pump	**B**
785	Piston assembly and cylinder are main components of ……. pumps. A. Turbine B. Reciprocating C. Submersible D. None of the options	**B**
786	The pump with diffuser type casing are commonly known as _____. A. Submersible pumps B. Turbine pumps C. Reciprocating D. Golden pumps	**B**
787	: Kg/cm^2 …… with the increase in the specific gravity of a liquid. A. Option 1 (Decrease) B. Option 2 (Increases) C. Option 3 (Proportional) D. Both 2 and 3	**D**
788	The flow comes in the forms of pulses from the following pump…….. A. Option 1 (Hand pump) B. Option 2 (Reciprocating pump) C. Both option 1 and 2 D. None of the options	**C**
789	The density of the liquid is ……proportional to the pressure produced by a pump. A. Inversely B. Constant C. Directly	**C**

	D. None of the above	
790	---------- type of pumps are not suitable to handle the viscous fluid A. Gear pump B. Plunger type pump C. Reciprocating pump D. All of the above	**D**
791	Q1/Q2……..(P1)^ 1/3/ (P2) ^ 1/3 A. Equal to B. Less than C. Greater than D. None of the above	**A**
792	if a curve falls after rising to a limiting height upto a designed point with the increase in the discharge is known as A. Overlapping curves B. Discharge vs head curves C. Non-overlapping curves D. None of the above	**C**
793	The …… pump with open impeller can handle sewage water. A. Centrifugal pump B. Gear pump C. Rotary pump D. None of the options	**D**
794	……..are necessary to overcome……phenomena A. Automatic quick closing valves, water hammer B. Fly wheels, cavitation C. Automatic controlled bypass, cavitation D. Net positive suction head, cavitation	**A**
795	Coal slurry can be handled by…….. pump A. Open impeller centrifugal pump B. Special duties C. Plunger type pump with open casing D. None of the above	**B**
796	If the multiple of pipe diameter and velocity is directly proportional to 1 or less than 1, the flow is known as A. Viscous flow B. Steady flow C. Non viscous flow D. None of the options	**B**
797	The frictional resistance for fluids in motion is….? A. Proportional to the velocity in laminar flow and to the square of the velocity in turbulent flow B. Proportional to the square of the velocity in laminar flow and to the velocity in turbulent flow C. Proportional to the velocity in both laminar flow and turbulent flow D. Proportional to the square of the velocity in both laminar flow and turbulent flow	**A**
798	Calculate the mean hydraulic radius for a channel having 20m^2 cross sectional area and 50m of wetted perimeter. A. 0.4m B. 0.5m	**A**

	C. 0.6m D. 0.7m	
799	kV^2/2g represents the…… losses in very long pipes A. option 1 (significant) B. option 2 (insignificant) C. none of the options D. Both option 1 and 2	**B**
800	The figure contains irregularity and inertia forces is known as A. Roughness factor chart B. Pie-chart C. Moody diagram D. None of the above	**C**
801	In which type of turbines, the water flows axially in and axially out. A. Pelton B. Francis C. Kaplan D. Turgo	**C**
802	Water hammer phenomena occurs in: A. Penstock B. Rotors C. Buckets D. Propeller	**A**
803	In the hydroelectric power station, function of runner is A. Convert kinetic energy to pressure energy B. Convert pressure energy to kinetic energy C. Convert liquid to gas D. Convert gas to liquid	**A**
804	In parallel pipes Q=? A. Q1+Q2-Q3 B. Q1+Q2+Q3 C. Q1-Q2-Q3 D. None	**B**
805	Which among the following does not depend on the friction factor? A. Pipe diameter B. Fluid density C. Viscosity D. Weight	**D**
806	Example of turbulent flow? A. Smoking rises from cigarette B. Flow on a symmetric airfoil C. Laminar flow D. Turbulent flow on the airfoil	**A**
807	Value of Z in elevation head of potential energy? A. non absolute B. absolute C. both A and B D. none of these	**B**
808	Vertical Centrifugal pumps are also known as: A. Cantilever pumps B. Hydrodynamic pump C. Mechanical pump D. Hydroelectric pump	**A**
809	The maximum volumetric efficiency of a pump (100cc) is: A. 60%	**D**

	B. 70% C. 80% D. D. 90%	
810	Which statement is correct in case of a centrifugal pump? A. The centrifugal pump is suitable for large discharge and smaller heads. B. The centrifugal pump requires less floor area and simple foundation as compared to reciprocating pump. C. The efficiency of centrifugal pump is less as compared to reciprocating pump. D. All the above.	**D**
811	Which of the following is not a type of positive displacement pumps? A. Reciprocating pump B. Rotary displacement pump C. Centrifugal pump D. D. None of the above	**C**
812	Reciprocating pump is also known as the….? A. Negative displacement pump B. Emulsion pump. C. Diaphragm pump D. D. Positive Displacement pump	**D**
813	In centrifugal pumps, maximum efficiency is obtained when the blades are _____? A. straight B. bent forward C. bent backward D. D. radial	**C**
814	Reciprocating pumps are no more to be seen in industrial applications as compared to centrifugal pumps because of: A. High initial and maintenance cost. B. Necessity of air vessel C. Lower discharge D. All of above	**D**
815	Which of the following is taken into account during a characteristic curve? A. Flow rate B. Cavitation C. Tolerances D. Casing	**A**
816	With the increase in the input power of a pump, efficiency _____? A. Increases B. Decreases C. Same D. Independent	**B**
817	One mechanical horsepower is equal to: A. 102 watts B. 735.5 watts C. 745.7 watts D. Both b and c	**C**
818	The process of filling the liquid into the suction pipe and pump casing up to the level of delivery valve is called as _____ A. Filling B. Pumping C. Priming	**C**

	D. Leveling	
819	According to Darcy's Law, the flow rate through a porous media is inversely proportional to: A. Head loss B. Cross sectional area C. Length of flow paths D. None of the options	**C**
820	Water from a valley with 1510m a.m.s.l flows towards a mountain with 1505m a.m.s.l,with no change in discharge in the valley is known as A. Unsteady flow B. Gravity flow C. Steady gravity flow D. Steady flow	**D**
821	Suppose a gas flow with no variation in its density then the flow is known as A. Compressible fluid B. Unsteady flow C. Incompressible fluid D. Steady flow	**C**
822	In a flowing water if the front of eddies is towards the front more than the backside then the flow is known as A. Sub critical flow B. Super critical flow C. Critical flow D. None of the options	**B**
823	The temperature above which a fluid changes its phase permanently is known as A. Absolute temperature B. Critical pressure C. Both the options D. None of the options	**D**
824	The steady flow has the value of coefficient of velocity A. 1.01 B. 1.06 C. 2 D. None of the above	**C**
825	A liquid flows through pipes 1 and 2 with the same flow velocity. If the ratio of their pipe diameters d1 : d2 be 3:2, what will be the ratio of the head loss in the two pipes? A. 3:2 B. 9:4 C. 2:3 D. 4:9	**C**
826	hL= f(L/D) (V^2/2g) is known as A. Pipe friction equation (Option 1) B. Darcy Weisbach equation (Option 2) C. Both Option 1 & 2 D. Hazen Williams equation	**C**
827	When a body floating in a liquid is displaced slightly, it oscillates about A. Center of gravity B. Center of buoyancy C. Center of pressure D. Metacenter	**D**

828	The buoyant force on anybody is equal to --------- of fluid displaced. A. Mass B. Volume C. Weight and Volume D. Weight	**C**
829	As diameter of the pipe increases, the head loss will A. Increases B. Decreases C. Remains same D. None of these	**B**
830	Steam turbines are not used in: A. Thermal Power Plants B. Textile Factory C. Jet Engines D. Sugar Factory	**C**
831	In which type of turbines, the water flows axially in and axially out. A. Pelton B. Francis C. Kaplan D. Turgo	**C**
832	The Froude's number for a flow in a channel section is 1. What type of flow is it? A. Sub Critical B. Critical C. Super critical D. Laminar	**B**
833	Which geometric parameter determines the efficiency of the channel? A. Hydraulic depth B. Hydraulic radius C. Section factor D. Normal depth	**B**
834	True one-dimensional flow occurs when A. The direction and magnitude of the velocity at all points are identical B. The velocity of successive fluid particles, at any point, is the same at successive periods of time C. The magnitude and direction of the velocity do not change from point to point in the fluid D. The fluid particles move in plane or parallel planes and the streamline patterns are identical in each plane	**A**
835	The discharge in an open channel corresponding to critical depth is A. Zero B. Minimum C. Maximum D. None of these	**C**
836	The critical depth meter is used to measure A. Velocity of flow in an open channel B. Depth of flow in an open channel C. Hydraulic jump D. Depth of channel	**C**
837	Fluid is a substance which offers no resistance to change of A. Pressure B. Flow	**C**

	C. Shape D. Volume	
838	The pressure less than atmospheric pressure is known as A. Suction pressure B. Vacuum pressure C. Negative gauge pressure D. All of these	**D**
839	In open channel flow in a rectangular channel, the ratio between the critical depth and the initial depth, when a hydraulic jump occurs is_____? A. 0.5 B. 0.84 C. 1.84 D. 1.25	**C**
840	Pick out the wrong statement? A. A fluid mass is free from shearing forces, when it is made to rotate with a uniform velocity B. Newton's law of viscosity is not applicable to the turbulent flow of fluid with linear velocity distribution C. Laminar flow of viscous liquids is involved in the lubrication of various types of bearings D. Rise of water in capillary tubes reduces with the increasing diameter of capillary tubes	**B**
841	Pick out the wrong statement? A. The eddy viscosity is a function of the type of turbulence involved B. The eddy viscosity is a fluid property C. The viscosity of gas increases with increase in temperature D. The viscosity of a liquid increases with decrease in temperature	**B**
842	Pick out the correct statement pertaining to Venturimeter ? A. A Venturimeter with a fixed pressure drop discharges more, when the flow is vertically downward, than when the flow is vertically upward B. The co-efficient of contraction of a Venturimeter is always unity C. For a fixed pressure drop, the discharge of a gas through a Venturimeter is greater, when compressibility is taken into account, than when it is negle D. None of these	**D**
843	The unit of surface tension is A. N/m B. N/m2 C. N/m3 D. (D) N-m	**A**
844	The flow of water through the hole in the bottom of a wash basin is an example of A. Steady flow B. Uniform flow C. Free vortex D. Forced vortex	**C**
845	The value of coefficient of discharge is _____ the value of coefficient of velocity. A. Less than B. Same as C. More than D. None of these	**A**
846	The hydraulic mean depth for a circular pipe of diameter (d) is A. d/6 B. d/4 C. d/2	**B**

	D. d	
847	Differential manometer gives the ……among two pressures A. Variation B. Difference C. Both a and b D. None of the option	**C**
848	The difference between reference and potential ET lies in the A. Soil B. Climate C. Vegetation D. Water	**C**
849	The value of Crop coefficient Kc lies between A. 0.2 = kc = 1.3 B. 0.2 = kc = 0.3 C. 0.12 = kc = 1.3 D. 1.0 = kc = 0.3	**A**
850	Product of soil coefficient, reference evapotranspiration, and crop coefficient resulted in A. Potential evapotranspiration B. Actual evapotranspiration C. Reference evapotranspiration D. All of the above	**B**
851	which is not a component of the hydrograph A. Base flow B. Surface Runoff C. Infiltration D. Peak Point E. Inflection Point F. GW Depletion Curve	**C**
852	The hydrograph gradually rises and reaches its peak value after A. lag time B. time of concentration C. basin lag D. both A & C E. Recession time F. both B & E	**D**
853	Total runoff ordinate are actually the values of A. Direct runoff B. Gauged discharge of stream C. Baseflow D. Unit hydrograph ordinates	**B**
854	The sum of overland flow, interflow, and the groundwater flow constitutes the A. Direct runoff B. Total runoff C. Streamflow D. Both A & B E. Both B & C	**E**
855	The lines joining all points in a basin of some key time elements in a storm, such as beginning of precipitation, are called A. Isochrones B. Isobars C. Isohyets D. Isotherm	**A**
856	which one is not a method for the estimation of runoff A. Empirical Formulas, Curves & Tables B. Infiltration method	**D**

	C. Rational method D. Energy balance method E. Overland flow hydrograph F. Unit hydrograph method	
857	Procedure to determine the outflow hydrograph of a river given the inflow hydrograph at one or more upstream points is known as A. Flow Routing B. Flow duration curves C. Hyetograph D. Flow measurement	**A**
858	The water falling on the earth surface in any form is called A. Atmosphere B. Climate C. Weather D. Precipitation	**D**
859	Hails are the falling of A. Water B. Lumps C. Vapors D. Rain	**B**
860	Frontal Rain is caused by A. Convection currents B. Winds from sea C. Cyclonic activity D. Condensation of water evaporated from mountains	**C**
861	In which region does the rainfall occur throughout the year A. Equatorial region B. Polar region C. Sub polar region D. Middle latitude region	**A**
862	The main factor which affects the infiltration capacity is A. Thickness of saturated layer B. Depth of surface detention C. Soil moisture D. All the above	**D**
863	The surface runoff is due to A. Initial rain B. Residual rain C. Rain in the net supply interval D. All the above	**C**
864	Hydrology is the science which deals with A. Surface Water B. Underground water C. River water D. Both A & B	**D**
865	Which of the following are used to store water during peak periods? A. Sews B. Canals C. Storage drums D. Storage Reservoirs	**D**
866	Isohyets are the imaginary lines joining the points of equal A. Pressure B. Height C. Humidity D. Rainfall	**D**

	Which of the following is the largest reservoir within the hydrologic cycle? A. Ice sheets B. The oceans C. Groundwater D. The atmosphere	**B**
867	A rainfall of 1.5 cm occurred in a 6-hr storm and if φ index was 0.20 cm/h. the rainfall excess was A. 0.0 cm B. 0.30 cm C. 1.20 cm D. -0.30 cm	**B**
868	Spillway of major storage projects are usually designed for a fold of A. 100 years B. 1000 years C. 30 years D. 60 years	**B**
869	Mean precipitation over an area is best obtained from the rain gauges observations by the following method: A. Arithmetic mean B. thiessen polygon C. Isohyetal map D. Orographically weighted isohyetal map	**D**
870	A lysimeter is used to measure A. infiltration B. evaporation C. evaportranspiration D. surface run-off	**D**
871	The volume of water that can be released by gravitational flow from a unit volume of aquifer is called A. porosity B. specific yield C. specific retention D. specific capacity	**B**
872	Hydrology is the science which deals with A. rain water B. river water C. sea water D. surface and groundwater	**D**
873	The main factor which affects the infiltration capacity, is A. thickness of saturated layer B. depth of surface detention C. soil moisture D. all the above	**D**
874	Precipitation includes A. rain B. snow C. hail D. all the above	**D**
875	Sharp created weirs are generally used for A. for large flows B. for small flows C. for streams with high sediment load D. for medium flow	**A**
876	The average mean velocity of a stream having depth, h, may be obtained by taking the average of the readings of a current meter at a depth of 0.1 h and 0.9 h A. 0.2h and 0.8h	**A**

	B. 0.3h and 0.7h C. 0.4h and 0.6h	
877	The time required by rain water to reach the outlet of drainage basin is generally called A. time of concentration B. time of overland flow C. concentration time of overland flow D. duration of rainfall	**A**
878	Consumptive use of a crop during growth is the amount of A. interception B. transpiration C. evaporation D. all the above	**D**
879	The principle of continuity is based on A. law of conservation of energy B. law of conservation of mass C. law of conservation of momentum D. all of the above	**B**
880	Useful moisture for plant growth is A. capillary water B. gravity water C. hygroscopic water D. chemical water	**A**
881	The filed capacity of a soil depends on A. capillary tension in the soil B. porosity of soil C. both a and b D. none of the above	**C**
882	The useful soil moisture within root zone is equal to A. field capacity B. saturation capacity C. moisture at permanent wilting point D. difference between field capacity and permanent wilting point	**D**
883	A land is said to be water logged if its soil pores within A. a depth of 40cm are saturated B. a depth of 50cm are saturated C. root zone of the crop are saturated D. all of above	**D**
884	An intense storm involves A. greater intensity B. greater kinetic energy C. greater potential energy D. both A and B	**D**
885	Peak runoff rate determined by rational method for 10 years return period from watershed area of 75 hectares having run off coefficient as 0.44 with rainfall intensity of 75 mm/h is A. 6.875 m3/h B. 6.875 m3/s C. 68.75 m3/s D. none of above	**B**
886	The instrument used for measuring the velocity of flow, is known as A. venture meter B. orifice meter C. pitot tube D. weir E. none of these	**C**
887	The movement of water through the soil profile is called	**B**

	A. Infiltration B. Percolation C. Runoff D. Transpiration	
888	Infiltration rate is high; --------- water will pass through the soil surface and erosion will-------- A. Less, increase B. More, reduce C. Less, reduce D. More increase.	**B**
889	The rate of evaporation has been found to--------with------in the salt content of the water A. Increase, decrease B. Decrease, increase C. Decrease, decrease D. Increase, increase. E. a,b F. c,d	**E**
890	To find the evaporation from reservoirs the calculated evaporation should be multiplied A. 0.77 B. 0.67 C. 7.7 D. 6.7	**A**
891	The ratio of weight of water transpired to the weight of dry matter in the plant is called A. Transportation ratio B. Evapotranspiration ratio C. Infiltration ratio D. None of those	**A**
892	Run off will occur only when the rate of ------exceeds the rate at which water infiltrate in the soil A. Precipitation B. Infiltration C. Evaporation D. None of these	**A**
893	The ratio of the peak run off rate to the rainfall intensity is called A. Run of co-efficient B. Intensity co-efficient C. Infiltration co-efficient D. none of these.	**A**
894	Ratio of actual ET of a specific crop to potential ET is called: A. ET ratio B. crop coefficient C. pan coefficient D. depletion factor	**B**
895	The period of direct surface runoff of the unit hydrograph is called: A. time base B. base width C. unit period D. both (a) & (b)	**D**
896	When volume of direct surface runoff is divided by the area of drainage basin under study, we get: A. net rainfall B. unit hydrograph ordinates C. base flow D. total runoff	**A**
897	Unit hydrograph ordinates are multiplied by Pnet to get direct runoff ordinates; this process is called:	**C**

	A. UG derivation B. UG alteration C. UG application D. base flow separation	
898	While converting a 3-hr UG having time base of 24 hours to 6-hr UG using S-curve method, what will be required number of successions to be developed? A. 8 B. 4 C. 10 D. 12	**A**
899	While converting a 4-hr UG into 6-hr UG using S-curve method, the ordinates of S-curve difference will be multiplied by: A. 6/4 B. 4/6 C. 2 D. 10	**B**
900	Fraction of total incoming radiation, which is reflected back by the earth to atmosphere, is called: A. albedo B. lapse rate C. insulation D. both a & b	**A**
901	Precipitation which occurs due to clash of two air masses having contrasting temperatures and densities, is called: A. convectional precipitation B. frontal precipitation C. orographic precipitation D. cyclonic precipitation	**B**
902	Which of the following is non-recording raingauge? A. tipping bucket gauge B. weighing type C. float type D. Symon's gauge	**D**
903	Formation of a layer or film of water before it starts flowing to generate runoff, is called: A. depression storage B. percolation C. detention storage D. none of these	**C**
904	When an air mass is cooled at constant vapor pressure, it gets condensed at a temperature, called: A. lapse rate B. saturation point C. dew point D. none of these	**C**
905	A constant infiltration rate, which is achieved after the soil is saturated, is called: A. maximum infiltration rate B. basic infiltration rate C. lapse rate D. none of these	**B**
906	Which of the following has same units as that of infiltration rate? A. runoff B. evapotranspiration C. rainfall intensity D. both (b) & (c)	**B**
907	In hydrograph theory, groundwater contribution to the stream is called: A. base flow B. sub-surface flow	**A**

	C. surface flow D. both b& c	
908	Which of the following is part of direct runoff? A. base flow B. sub-surface flow C. surface flow D. both (b)& (c)	**D**
909	In hydrologic cycle filling of undulations on the earth surface by water before it starts flowing, is called: A. infiltration B. percolation C. depression storage D. seepage	**C**
910	Difference between saturated vapor pressure and actual vapor pressure is called: A. relative humidity B. absolute humidity C. specific humidity D. saturation deficit	**D**
911	Ratio of actual vapor pressure to saturation vapor pressure is called: A. relative humidity B. absolute humidity C. specific humidity D. saturation deficit	**A**
912	Rate of decrease in atmospheric temperature per unit rise in vertical direction through troposphere is called: A. albedo B. lapse rate C. insulation D. both (a) & (b)	**B**
913	Lines of equal atmospheric pressure are known as: A. isohyets B. isobars C. isotherms D. contours	**B**
914	Which of the following instruments is used for measuring relative humidity? A. barograph B. bimetallic actinography C. hair hygrograph D. pyranometer	**C**
915	Which of the following instruments is used for measuring radiation heat? A. barograph B. thermograph C. hair hygrograph D. pyranometer	**D**
916	Which of the following rain gauges cannot be used for recording snow? A. weighing type B. float type C. tipping bucket type D. both (a) & (b)	**C**
917	The capacity of one bucket in tipping bucket raingauge is: A. 0.25 mm B. 0.5 mm C. 1.5 mm D. 1.25 mm	**C**
918	For saturated condition, when humidity is 100%, the difference between dry bulb and wet bulb	**A**

	temperatures is: A. maximum B. relatively high C. negative D. zero	
919	Precipitation that occurs due to lifting of moist air after striking with mountain barriers is called: A. convectional precipitation B. frontal precipitation C. orographic precipitation D. cyclonic precipitation	**D**
920	Ratio of rainfall in a particular year to average annual rainfall is called: A. rainfall ratio B. index of wetness C. percentage rainfall D. specific rainfall	**C**
921	An index of wetness of 60% shows that in a particular year, there is: A. 40% more rainfall B. 60% more rainfall C. 40% less rainfall D. 60% less rainfall	**C**
922	Which of the following methods is used for adjustment of rainfall records at a station? A. station-year method B. isohyetal method C. double mass analysis D. arithmetic average method	**C**
923	In which method of determining mean aerial depth of precipitation, the addition or removal of a raingauge will change the whole scenario? A. arithmetic average method B. Thiessen polygon method C. isohyetal method D. both (a) & (b)	**B**
924	If coefficient of variation calculated from rainfall data of different raingauge stations in an area is 40% and permissible error in estimating average depth of rainfall is 10%, what would be the optimum number of raingauge stations to be established in the area? A. 4 B. 16 C. 30 D. 3	**B**
925	The graph between rainfall intensity and time is called: A. hyetograph B. hydrograph C. mass curve of rainfall D. both (a) & (b)	**A**
926	Time from the centeroid of net rainfall to the peak of hydrograph is called: A. time of concentration B. lag time C. basin lag D. both (b) & (c)	**D**
927	Colluvial soils (talus) are transported by: A. Water B. Wind C. Gravity D. Ice	**C**
928	Water-transported soils are termed: A. Acoline	**B**

	B. Alluvial C. Colluvial D. Till	
929	Glacier-deposited soils are called: A. Talus B. Loess C. Drift D. None of above	**C**
930	Cohesionless soils are formed due to: A. Oxidation B. Hydration C. Physical disintegration D. Chemical decomposition	**C**
931	When the products of rock weathering are not transported but remain at the place of formation, the soil is called: A. Alluvial soil B. Talus C. Residual soil D. Acolian soil	**C**
932	The following type of soil is not glacier-deposited.: A. Drift B. Till C. Outwas BRGFh D. Bentonite	**D**
933	The water content of a highly organic soil is determined in an oven at a temperature of: A. 105°C B. 80°C C. 60°C D. 27°C	**C**
934	Pycnometer method for water content determination is more suitable for: A. Clay B. Loess C. Sand D. Silt	**C**
935	The gas formed by the reaction of calcium carbide with water is: A. Carbon dioxide B. Sulphur dioxide C. Ethane D. Acetylene	**D**
936	The ratio of the volume of voids to the total volume of soil is: A. Voids ratio B. Degree of saturation C. Air content D. Porosity	**D**
937	Dry density of soil is equal to the: A. Mass of solids to the volume of solids. B. Mass of solids to the total volume of soil. C. Density of soil in the dried condition. D. None of the above	**B**
938	The most accurate method for the determination of water content in the laboratory is: A. Sand bath method B. Oven-drying method. C. Pycnometer method. D. Calcium carbide method.	**B**
939	A soil has a bulk density of 1.80 g/cm3 at a water content of 5%. If the void ratio remains constant then	**B**

	the bulk density for a water content of 10% will be: A. 2.00 g/cm B. 1.88 g/cm C. 1.82 g/cm D. 1.95 g/cm	
940	In a wet soil mass, air occupies one-sixth of its volume and water occupies one-third of its volume. The void ratio of the soil is: A. 0.25 B. 0.50 C. 1.50 D. 1.00	**D**
941	A soil sample has a specific gravity of 2.60 and a void ratio of 0.78. The water content required to fully saturate the soil at that void ratio will be: A. 20% B. 30% C. 40% D. 60%	**B**
942	In Stokes' law, the terminal velocity of the particle is: A. Proportional to the radius of the particle. B. Proportional to the square of the radius of particle. C. Inversely proportional to the square of the radius of particle. D. None of the above.	**B**
943	Stoke's law does not hold good if the size of particles is: A. Greater than 0.2 mm B. less than 0.2 µm C. Neither A Nor B D. Both A and B	**D**
944	Pretreatment of soil to remove the organic matter by oxidation is done with: A. Sodium hexametaphosphate B. Oxygen C. Hydrogen peroxide D. Hydrochloric acidc	**C**
945	The particle-size distribution curve with a hump is obtained for a: A. Uniform soil B. Well-graded soil C. Gap-graded soil D. Poorly-graded soil	**C**
946	For a well-graded sand, the coefficient of curvature should be: A. More than 3 B. Between 1 and 3 C. Less than 1 D. None of above	**B**
947	For a dense sand, the relative density is: A. Between 35 and 65 B. Between 65 and 85 C. Between 85 and 100 D. Greater than 100	**B**
948	A well-graded sand should have: A. $Cu \geq 4.00$ B. $Cu \geq 6.00$ C. $Cu \geq 1.00$ D. $Cu \geq 3$	**B**
949	In hydrometer analysis for a soil mass: A. Both meniscus correction and dispersing agent correction are negative B. Both meniscus correction and dispersing agent correction are positive	**C**

	C. Meniscus correction is positive while dispersing agent correction is negative D. Meniscus correction is negative while dispersing agent correction is positive	
950	At shrinkage limit, the soil is: A. Dry B. Partially saturated C. Saturated D. None of above	**C**
951	The shrinkage index is equal to: A. Liquid limit minus plastic limit. B. Liquid limit minus shrinkage limit. C. Plastic limit minus shrinkage limit. D. None of above.	**C**
952	Toughness index of a soil is the ratio of: A. Plasticity index to the flow index. B. Liquidity index to the flow index. C. Consistency index to the flow index. D. Shrinkage index to the flow index.	**A**
953	A stiff clay has a consistency index of: A. 50-75 B. 75-100 C. Greater than 100 D. Less than 50	**B**
954	The plasticity index of a highly plastic soil is about: A. 10-20 B. 20–40 C. Greater than 40 D. Less than 10	**B**
955	The activity of the mineral montmorillonite is: A. Less than 0.75 B. Between 0.75 and 1.25 C. Between 1.25 and 4 D. Greater than 4	**D**
956	A soil sample has l. = 45%, P = 25% and SL = 15% For a natural water content of 30%, the consistency index will be: A. 75% B. 50% C. 40% D. 25%	**A**
957	For the soil with LL = 45%, P = 25% and Su = 15%, the plasticity index is: A. 50% B. 20% C. 60% D. 40%	**B**
958	IS classification of soil in many respects is similar to: A. AASHTO classification B. Textural classification C. Unified soil classification D. MIT classification	**C**
959	The maximum size of particles of silt is: A. 75 µ B. 60 µ C. 2 µ D. 0.2 µ	**A**
960	The maximum size of particles of clay is: A. 0.2 mm	**C**

	B. 0.02 mm C. 0.002 mm D. 0.0002 mm	
961	According to IS classification system, the soils can be classified into: A. 15 groups B. 18 groups C. 3 groups D. 7 groupsc	**B**
962	The soils which plot above the A line in the plasticity chart are: A. clays B. silts C. sands D. organic soils	**A**
963	A silty soil gives a positive reaction in: A. Toughness test B. Dilatancy test C. Dry strength test D. None of above	**B**
964	The maximum value of the term (F-15) in the group index is taken as: A. 20 B. 30 C. 40 D. 60	**C**
965	The behavior of clay is governed by: A. Mass energy B. Surface energy C. Both A. and B. D. Neither A. and B.	**B**
966	Honey-combed structure is found in: A. Gravels B. Coarse sands C. Fine sands and silts D. clay	**C**
967	The weakest bond in soils is: A. Ionic bond B. Covalent bond C. Hydrogen bond D. Secondary valance bond	**D**
968	An octahedral unit has: A. Four negative charges B. Three negative charges C. One negative D. No negative charge	**B**
969	In illite mineral, the bond between structural units is: A. Hydrogen bond B. Potassium ion bond C. Water molecules bond D. Covalent bond	**B**
970	The plasticity characteristics of clays are due to: A. Adsorbed water B. Free water C. Capillary water D. None of above	**A**
971	In fine sands and silts, the most common type structure is: A. Single	**B**

	B. Honey comb C. Flocculated D. Dispersed	
972	The base exchange capacity of the mineral montmorillonite is about: A. 70 meq/100 g B. 700 meq/100 g C. 7 meq/100 g D. 40 meq/100 g	**A**
973	Capillary rise in a small tube is due to: A. Cohesion B. Adhesion C. Both cohesion and adhesion D. Neither A. nor B.	**C**
974	The surface tension of water at normal temperatures is about: A. 0.73 dynes/m B. 0.73 N/m C. 0.073 N/m D. 0.073 kN/m	**C**
975	The capillary rise in clay is usually between: A. 0.10 and 0.15 m B. 0.3 and 1.0 m C. 1.0 and 10.0 m D. greater than 10 m	**D**
976	A pF value of zero corresponds to a soil section of: A. Im B. zero metre C. I cm D. 10 cm	**C**
977	The frost heave in the following type of soils is generally high: A. Coarse sands B. clays C. Fine sands and silts D. gravels	**C**
978	Bulking of sands is usually: A. Less than 10% B. Between 20 to 30% C. Greater than 30% D. Between 10 to 20%	**B**
979	The frost heave depth as percentage of the soil depth in fine sands and silts is about: A. 4 to 5% B. 5 to 10% C. 10 to 15% D. 20 to 30%	**D**
980	The permeability of soil varies: A. inversely as square of grain size B. as square of grain size C. as grain size D. inversely as void ratio.	**B**
981	The maximum particle size for which Darcy's law is applicable is: A. 0.2 mm B. 0.5 mm C. 1.0 mm D. 2.0 mm	**B**
982	According to U.S.B.R, a soil with a coefficient of permeability of 10 mm/sec will be classified as: A. Pervious	**C**

	B. Impervious C. Semi-pervious D. Highly pervious	
983	The coefficient of permeability of clay is generally: A. Between 10 and 10-2 mm/s B. Between 10 and 10 mm/s C. Between 10 and 10 mm/s D. Less than 10 mm/s	**C**
984	A constant-head permeameter is used for: A. Coarse grained soils B. Silty soils C. Clayey soils D. Organic soils	**A**
985	The coefficient of permeability of a soil: A. increases with an increase in temperature, B. increases with a decrease in temperature. C. increases with a decrease in unit weight of water. D. decreases with an increase in void ratio.	**A**
986	For a sphere of 0.5 mm diameter, the specific surface is: A. 12 mm-1 B. 6 mm-1 C. 8 mm-1 D. 9 mm-1	**A**
987	Disintegration of rocks into smaller particles due to ice is a type of _____weathering. A. Chemical B. Mechanical C. Biological D. None of these	**B**
988	With the decrease in particle size with same volume of solids, soil porosity_____? A. Increases B. Decreases C. Remains Constant D. None of these	**A**
989	A fully saturated soil has_____. A. No air voids B. No voids C. Only water voids D. Both a and c	**D**
990	Soil compaction test is performed to find maximum density of soil at specific_____. A. Moisture content B. Compactive effort C. Volume D. Both a and b	**D**
991	_____density of soil has the highest value. A. Bulk B. Dry C. Particle D. Saturated	**A**
992	Material transported and deposited by running water is known as: A. Colluvial B. Loess C. Aeolian D. Alluvial	**D**
993	A rock composes of minerals that resist chemical weathering is called: A. Stable rock	**A**

	B. Balance rock C. Steady rock D. None of these	
994	Atterberg limits are used for the classification of _____ particles. A. Coarse B. Finer C. Medium D. All of these	**B**
995	For soil, the two main physical properties are: A. Temperature & Density B. Surface tension & capillarity C. Color and texture D. All of them	**C**
996	Formation of soil depends upon: A. Weather B. Parent material C. Time D. Both a and b	**D**
997	In unified classification system, Boulders are particles with size above than_____. A. 200 mm B. 300 mm C. 75 mm D. 4.25 mm	**B**
998	Void ratio tells us about the: A. Viscosity B. Density C. Both a & b D. None of them	**B**
999	In grain size analysis test, effective size is: A. D10 B. D30 C. D60 D. D70	**A**
1000	Porosity of soil is defined as the ratio of volume of voids to the total volume of soil. Its value is always: A. <1 B. >1 C. 0<n<1 D. -1	**C**
1001	In _____ aquifer, hydraulic conductivity is equal in all directions. A. Isotropic B. Anisotropic C. Homogenous D. Heterogenous	**A**
1002	The moisture content of soil at the boundary between solid and semi solid state is called: A. Shrinkage limit B. Plastic limit C. Liquid limit D. None of these	**A**
1003	_____ rollers provide greater compaction pressure and kneading effect. A. Smooth wheel B. Sheepsfoot C. Pneumatic D. Vibratory	**B**
1004	If the soil voids are full of air, the soil is termed as: A. Air entered soil	**C**

	B. Partially saturated air C. Dry soil D. Dehydrated air	
1005	Which of the following soils has more plasticity index? A. Sand B. Silt C. Clay D. Gravel	**C**
1006	Compaction of soil at a water content _____ than Optimum Water content results in random particle orientations. A. Higher B. Lower C. Equal D. Higher or equal	**B**