

**DEPT. OF FOOD ENGINEERING
UNIVERSITY OF AGRICULTURE, FAISALABAD**

S.No	Questions	Ans
1.	Pick up the wrong statement. A refrigerant should have (a) low specific heat of liquid (b) high boiling point (c) high latent heat of vaporization (d) low specific volume of vapor.	B
2.	A standard ice point temperature corresponds to the temperature of (a) water at 0°C (b) ice at 4° (c) solid and dry ice (d) mixture of ice and water Under equilibrium conditions.	D
3.	Vapor compression refrigeration is somewhat like (a) Carnot cycle (b) Rankine cycle (c) reversed Carnot cycle (d) none of the above.	D
4.	Which of the following cycles uses air as the refrigerant? (a) Ericsson (b) Stirling (c) Carnot (d) Bellcoleman	D
5.	Ammonia absorption refrigeration cycle requires (a) very little work input (b) maximum work input (c) nearly same work input as for vapour compression cycle (d) zero work input	A
6.	An important characteristic of absorption system of refrigeration is (a) noisy operation (b) quiet operation (c) cooling below 0°C (d) very little power consumption	B
7.	The relative coefficient of performance is (a) actual COP/theoretical COP (b) theoretical COP/actual COP (c) actual COP x theoretical COP (d) 1actual COP x theoretical COP	A
8.	Clapeyron equation is a relation between (a) temperature, pressure and enthalpy (b) specific volume and enthalpy (c) temperature and enthalpy (d) temperature, pressure, specific volume and enthalpy (TPSE)	D
9.	Clapeyron equation is applicable for refrigeration at (a) saturation point of vapor (b) saturation point of liquid (c) sublimation temperature (d) triple point	A
10.	In vapour compression cycle, the condition of refrigerant is saturated liquid (a) after passing through the condenser (b) before passing through the condenser (c) after passing through the expansion throttle valve (d) before entering the expansion valve	A
11.	In vapour compression cycle, the condition of refrigerant is very wet vapour (a) after passing through the condenser (b) before passing through the condenser (c) after passing through the expansion or throttle valve (d) before entering the compressor.	D
12.	In vapour compression cycle the condition of refrigerant is superheated vapour (a) after passing through the condenser (b) before passing through the condenser (c) after passing through the expansion or throttle valve (d) before entering the expansion valve	B
13.	In vapour compression cycle the condition of refrigerant is dry after (a) saturated vapour (b) passing through the condenser (c) after passing through the expansion or throttle valve (d) before entering the compressor..	B
14.	The boiling point of ammonia is (a) 100°C (b) 50°C (c) 33.3°C (d) 0°C	C
15.	One ton of refrigeration (TR) is equal to the refrigeration effect corresponding to melting of 1000 kg of ice (a) in 1 hour (b) in 1 minute (c) in 24 hours (d) in 12 hours	C

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16.	One ton refrigeration corresponds to (a) 50 kcal/min (b) 50 kcal/hr (c) 80 kcal/min (d) 80 kcal/hr	A
17.	In S.I. unit, one ton of refrigeration is equal to (a) 210 kJ/min (b) 21 kJ/min (c) 420 kJ/min (d) 840 kJ/min	A
18.	The vapour compression refrigerator employs the following cycle (a) Rankine (b) Carnot (c) Reversed Rankine (d) non of these	D
19.	Allowable pressure on high pressure side in ammonia absorption system is of the order of (a) atmospheric pressure (b) slightly above atmospheric pressure (c) 24 bars (d) 56 bars	D
20.	The moisture in a refrigerant is removed by (a) evaporator (b) safety relief valve (c) dehumidifier (d) driers	D
21.	The condensing pressure due to the presence of non-condensable gases, as compared to that actually required for condensing temperatures without non-condensable gases, (a) will be higher (b) will be lower (c) will remain unaffected (d) may be higher or lower depending upon the nature of non-condensable gases	A
22.	Critical pressure of a liquid is the pressure (a) above which liquid will remain liquid (b) above which liquid becomes gas (c) above which liquid becomes vapour (d) above which liquid becomes solid	A
23.	Critical temperature is the temperature above which (a) a gas will never liquefy (b) a gas will immediately liquefy (c) water will evaporate (d) water will never evaporate	A
24.	The refrigerant for a refrigerator should have (a) high sensible heat (b) high total heat (c) high latent heat (d) low latent heat	C
25.	Rating of a domestic refrigerator is of the order of (a) 0.1 ton (b) 5 tons (c) 10 tons (d) 40 tons	A
26.	The COP of a domestic refrigerator (a) is less than 1 (b) is more than 1 (c) is equal to 1 (d) depends upon the make	B
27.	The domestic refrigerator uses following type of compressor (a) centrifugal (b) axial (c) miniature sealed unit (d) piston type reciprocating	D
28.	Presence of moisture in a refrigerant affects the working of (a) compressor (b) condenser (c) evaporator (d) expansion valve.	D
29.	Refrigeration in aero planes usually employs the following refrigerant (a) Co ₂ (b) Freon11 (c) Freon22 (d) Air	D
30.	Domestic refrigerator working on vapour compression cycle uses the following type of expansion device (a) electrically operated throttling valve (b) manually operated valve (c) thermostatic valve	D

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	(d) capillary tube	
31.	Air refrigeration operates on (a) Carnot cycle (b) Reversed Carnot cycle (c) Rankine cycle (d) Brayton cycle.	D
32.	Air refrigeration cycle is used in (a) domestic refrigerators (b) commercial refrigerators (c) air conditioning (d) gas liquefaction	D
33.	In a vapour compression cycle, the refrigerant immediately after expansion valve is (a) liquid (b) subcooled liquid (c) saturated liquid (d) wet vapor	D
34.	The vapour pressure of refrigerant should be (a) lower than atmospheric pressure (b) higher than atmospheric pressure (c) equal to atmospheric pressure (d) could be anything	B
35.	For better COP of refrigerator, the pressure range corresponding to temperature in evaporator and condenser must be (a) small (b) high (c) equal (d) anything	A
36.	The bank of tubes at the back of domestic refrigerator are (a) condenser tubes (b) evaporator tubes (c) refrigerant cooling tubes (d) capillary tubes	A
37.	The higher temperature in vapour compression cycle occurs at (a) receiver (b) expansion valve (c) evaporator (d) compressor discharge	D
38.	Highest temperature encountered in refrigeration cycle should be (a) near critical temperature of refrigerant (b) above critical temperature (c) at critical. temperature (d) much below critical temperature	D
39.	In refrigerator, liquid receiver is required between condenser and flow controlling device, if quantity of refrigerant for system is (a) less than 2 kg (b) more than or equal to 3.65 kg (c) more than 10 kg (d) there is no such consideration	B
40.	Absorption system normally uses the following refrigerant (a) Freon11 (b) Freon22 (c) CO ₂ (d) SO ₂	D
41.	One of the purposes of sub cooling the liquid refrigerant is to (a) reduce compressor overheating (b) reduce compressor discharge temperature (c) increase cooling effect (d) ensure that only liquid and not the vapour enters the expansion (throttling) valve	D
42.	The value of COP in vapour compression cycle is usually (a) always less than unity (b) always more than unity (c) equal to unity (d) any one of the above	B
43.	In a refrigeration system, heat absorbed in comparison to heat rejected is (a) more (b) less (c) same (d) more for small capacity and less for high capacity	B
44.	Condensing temperature in a refrigerator is the temperature (a) of cooling medium (b) of freezing zone	D

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	(c) of evaporator (d) at which refrigerant gas becomes liquid	
45.	Formation of frost on evaporator in refrigerator (a) results in loss of heat due to poor heat transfer (b) increases heat transfer rate (c) is immaterial (d) can be avoided by proper design	A
46.	In refrigerators, the temperature difference between the evaporating refrigerant and the medium being cooled should be (a) high, of the order of 25° (b) as low as possible (3 to 11°C) (c) zero (d) any value	B
47.	In a flooded evaporator refrigerator, an accumulator at suction of compressor is used to (a) collect liquid refrigerant and prevent it from going to compressor (b) detect liquid in vapours (c) superheat the vapours (d) collect vapours	A
48.	Accumulators should have adequate volume to store refrigerant charge at least (a) 10% (b) 25% (c) 50% (d) 75%	C
49.	At lower temperatures and pressures, the latent heat of vaporization of a refrigerant (a) decreases (b) increases (c) remains same (d) depends on other factors	B
50.	A refrigeration cycle operates between condenser temperature of + 27°C and evaporator temperature of 23°C. The Carnot coefficient of performance of cycle will be (a) 0.2 (b) 1.2 (c) 5 (d) 6	C
51.	Which of the following is not a desirable property of a refrigerant? (a) high solubility with oil (b) low boiling point (c) good electrical conductor (d) large latent heat	C
52.	In vapour compression refrigeration system, refrigerant occurs as liquid between (a) condenser and expansion valve (b) compressor and evaporator (c) expansion valve and evaporator (d) compressor and condenser	C
53.	Pick up the correct statement about giving up of heat from one medium to other in ammonia absorption system (a) strong solution to weak solution (b) weak solution to strong solution (c) strong solution to ammonia vapour (d) ammonia vapour to weak solution	B
54.	Efficiency of a Carnot engine is given as 80%. If the cycle direction be reversed, what will be the value of COP of reversed Carnot cycle (a) 1.25 (b) 0.8 (c) 0.5 (d) 0.25	D
55.	Highest pressure encountered in a refrigeration system should be (a) critical pressure of refrigerant (b) much below critical pressure (c) much above critical pressure (d) near critical pressure	B
56.	If a heat pump cycle operates between the condenser temperature of +27°C and evaporator temperature of 23°C, then the Carnot COP will be (a) 0.2 (b) 1.2 (c) 5 (d) 6	D
57.	A certain refrigerating system has a normal operating suction pressure of 10 kg/cm gauge and condensing pressure of about 67 kg/cm. The refrigerant used is (a) Ammonia (b) Carbon dioxide (c) Freon (d) Brine	B

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58.	Aqua ammonia is used as refrigerant in the following type of refrigeration system (a) compression (b) direct (c) indirect (d) absorption	D
59.	If the evaporator temperature of a plant is lowered, keeping the condenser temperature constant, the hp of compressor required will be (a) same (b) more (c) less (d) more/less depending on rating	B
60.	In a refrigeration cycle, the flow of refrigerant is controlled by (a) compressor (b) condenser (c) evaporator (d) expansion valve	D
61.	Where does the lowest temperature occur in a vapour compression cycle? (a) condenser (b) evaporator (c) compressor (d) expansion valve	B
62.	The leaks in a refrigeration system using Freon are detected by (a) halide torch which on detection produces greenish flame lighting (b) Sulphur sticks which on detection gives white smoke (c) using reagents (d) smelling	A
63.	Pick up the incorrect statement (a) lithium bromide used in vapour absorption cycle is nonvolatile (b) lithium bromide plant can't operate below 0°C (c) a separator is used in lithium bromide plant to remove the unwanted water vapour by condensing (d) concentration of solution coming out of lithium bromide generator is more in comparison to that entering the generator	C
64.	The lower horizontal line of the refrigeration cycle plotted on pressure enthalpy diagram represents (a) condensation of the refrigerant vapour (b) evaporation of the refrigerant liquid (c) compression of the refrigerant vapour (d) metering of the refrigerant liquid	B
65.	Mass flow ratio of NH ₃ in comparison to Freon12 for same refrigeration load and same temperature limits is of the order of (a) 1 : 1 (b) 1 : 9 (c) 9 : 1 (d) 1 : 3	B
66.	Freon group of refrigerants are (a) inflammable (b) toxic (c) noninflammable and toxic (d) nontoxic and inflammable	D
67.	Ammonia is (a) nontoxic (b) noninflammable (c) toxic and noninflammable (d) highly toxic and inflammable	D
68.	In vapour compression cycle using NH ₃ as refrigerant, initial charge is filled at (a) suction of compressor (b) delivery of compressor (c) high pressure side close to receiver (d) low pressure side near receiver	C
69.	Short horizontal lines on pressure enthalpy chart show (a) constant pressure lines (b) constant temperature lines (c) constant total heat lines (d) constant entropy lines	A
70.	On the pressure-enthalpy diagram, condensation and de-superheating is represented by a horizontal line because the process (a) involves no change in volume (b) takes place at constant temperature (c) takes place at constant entropy (d) takes place at constant enthalpy	D
71.	One ton of the refrigeration is (a) the standard unit used in refrigeration problems (b) the cooling effect produced by melting 1 ton of ice (c) the refrigeration effect to freeze 1 ton of water at 0°C into ice at 0°C in 24 hours (d) the refrigeration effect to produce 1 ton of ice at NTP conditions	C

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72.	Superheating in a refrigeration cycle (a) increases COP (b) decreases COP (c) COP remains unaltered (d) other factors decide COP	B
73.	For proper refrigeration in a cabinet, if the temperature and vapour pressure difference between cabinet and atmosphere is high, then (a) bigger cabinet should be used (b) smaller cabinet should be used (c) perfectly tight vapour seal should be used (d) refrigerant with lower evaporation temperature should be used	C
74.	Choose the correct statement (a) A refrigerant should have low latent heat (b) If operating temperature of system is low, then refrigerant with low boiling point should be used (c) Pre-cooling and sub-cooling of refrigerant are same (d) Superheat and sensible heat of a refrigerant are same	B
75.	The suction pipe diameter of refrigerating unit compressor in comparison to delivery side is (a) bigger (b) smaller (c) equal (d) smaller/bigger depending on capacity	A
76.	Moisture in freon refrigeration system causes (a) ineffective refrigeration (b) high power consumption (c) freezing automatic regulating valve (d) corrosion of whole system	C
77.	The advantage of dry compression is that (a) it permits higher speeds to be used (b) it permits complete evaporation in the evaporator (c) it results in high volumetric and mechanical efficiency (d) all of the above	D
78.	Choose the wrong statement (a) Temperature of medium being cooled must be below that of the evaporator (b) Refrigerant leaves the condenser as liquid (c) All solar thermally operated absorption systems are capable only of intermittent operation (d) frost on evaporator reduces heat transfer	A
79.	Under cooling in a refrigeration cycle (a) increases COP (b) decreases COP (c) COP remains unaltered (d) other factors decide COP	A
80.	For obtaining high COP, the pressure range of compressor should be (a) high (b) low (c) optimum (d) any value	B
81.	The coefficient of performance is the ratio of the refrigerant effect to the (a) heat of compression (b) work done by compressor (c) enthalpy increase in compressor (d) all of the above	D
82.	The C.O.P of a refrigeration cycle with increase in evaporator temperature, keeping condenser temperature constant, will (a) increase (b) decrease (c) remain unaffected (d) may increase or decrease depending on the type of refrigerant used	A
83.	Vertical lines on pressure-enthalpy chart show constant (a) pressure lines (b) temperature lines (c) total heat lines (d) entropy lines	C
84.	Most of the domestic refrigerators work on the following refrigeration system (a) vapour compression (b) vapour absorption (c) carnot cycle (d) Electrolux refrigerator	A
85.	The general rule for rating refrigeration systems (excepting for CO ₂ system) is to approximate following hp per ton of refrigeration (a) 0.1 to 0.5 hp per ton of refrigeration (b) 0.5 to 0.8 hp per ton of refrigeration (c) 1 to 2 hp per ton of refrigeration (d) 2 to 5 hp per ton of refrigeration	C

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86.	Reducing suction pressure in refrigeration cycle (a) lowers evaporation temperature (b) increases power required per ton of refrigeration (c) lowers compressor capacity because vapour is lighter (d) all of the above.	D
87.	Cooling water is required for following equipment in ammonia absorption plant (a) condenser (b) absorber (c) condenser and absorber (d) condenser, absorber and separator (rectifier)	D
88.	The refrigeration effect in a dry evaporator compared to flooded evaporator in a similar plant is (a) same (b) more (c) less (d) more or less depending on ambient conditions	C
89.	The C.O.P. of a refrigeration cycle with lowering of condenser temperature, keeping the evaporator temperature constant, will (a) increase (b) decrease (c) may increase or decrease depending on the type of refrigerant used (d) remain unaffected	A
90.	Which of the following refrigerants has lowest freezing point? (a) Freon12 (b) NH ₃ (c) CO ₂ (d) Freon22	D
91.	The COP of a vapour compression plant in comparison to vapour absorption plant is (a) more (b) less (c) same (d) more/less depending on size of plant	A
92.	The C.O.P. of a domestic refrigerator in comparison to domestic air conditioner will be (a) same (b) more (c) less (d) dependent on weather conditions	C
93.	The evolution of heat of solution takes place in ammonia absorption plant when (a) ammonia vapour goes into solution (b) ammonia vapour is driven out of solution (c) lithium bromide mixes with ammonia (d) weak solution mixes with strong solution (e) lithium bromide is driven out of solution.	A
94.	The change in evaporator temperature in a refrigeration cycle, as compared to change in condenser temperature, influences the value of C.O.P. (a) more (b) less (c) equally. (d) unpredictable (e) none of the above.	A
95.	There is change of state of refrigerant in relation to (a) Bell Coleman Cycle (b) Vapor compression Cycle (c) Carnot cycle (d) None	B
96.	To improve the COP of a refrigeration system, the super heating in the evaporator should be (a) High (b) Low (c) Zero (d) None	B
97.	To improve the COP of a refrigeration system, the sub-cooling in the condenser should be (a) High (b) Low (c) Zero (d) None	A
98.	The cooling effect is higher in a (a) Boot strap air refrigeration cycle (b) Bell column cycle (c) Vapor compression cycle (d) None	C
99.	The boiling point of a liquid increases with the (a) Decrease of pressure (b) Increase of pressure (c) Increase of pressure and volume (d) None	B

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100.	With the decrease of suction pressure, refrigeration effect (a) Increases (b) Decreases (c) Remains the same (d) None	B
101.	With the increase of discharge pressure, the refrigerating effect (a) Increases (b) Decreases (c) Remains the same (d) None	B
102.	With the decrease in suction pressure, COP of a refrigeration system (a) Increases (b) Decreases (c) Remains the same (d) None	B
103.	With the decrease in discharge pressure, COP of a refrigeration system (a) Increases (b) Decreases (c) Remains the same (d) None	A
104.	The accumulator in a refrigeration system is installed at the (a) Inlet of compressor (b) Inlet of evaporator (c) Inlet of expansion valve (d) None	A
105.	The condenser used in a small cooling capacity plant is (a) Air cooled (b) Water cooled (c) Air as well as water cooled (d) None	A
106.	The condenser used in medium cooling capacity plant is (a) Air cooled (b) Water cooled (c) Air as well as water cooled (d) None	B
107.	The condenser used in large cooling capacity plant is (a) Air cooled (b) Water cooled (c) Air as well as water cooled (d) None	C
108.	Which of the following is/are example/s of heat exchanger? a. Feed water heater in which a stream of steam is directly mixed with cold water and the mixture leaves at uniform temperature b. Feed water heater in which a stream of steam and cold water are not mixed and separated by partition through which heat flows c. both a. and b. d. none of the above.	C
109.	Which of the following phases of designing of heat exchangers does designer consider corrosive nature of the fluid in? a. The thermal analysis b. The mechanical design c. The design for manufacture d. none of the above	B
110.	Which of the following is NOT a type of heat exchanger? a. condenser b. Regenerator c. Mixer d. none of the above	D
111.	The two fluids are not mixed and kept separated as they both flow through heat exchanger in a. Transfer type heat exchanger or recuperator b. Storage type heat exchanger or regenerator c. Direct contact type heat exchanger or mixer d. none of the above	A
112.	Which of the following is/are example/s of direct contact type heat exchanger? a. jet condenser b. desuperheater c. cooling tower d. all of the above	D
113.	Which theory is widely used to determine the heat transfer coefficient for film condensation on surfaces? a. Reynold's theory b. Grashof's theory c. Nusselt's theory d. Prandtl's theory	C
114.	In a film condensation, the vertical plate temperature should be a. more than the saturation temperature of the vapour (T_s)	B

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	b. less than the saturation temperature of the vapour (Ts) c. equal to the saturation temperature of the vapour (Ts) d. none of the above	
115.	According to the Nusselt's theory, to determine the heat transfer coefficient for film condensation on surfaces, a. the vapour should be pure, dry and saturated b. the condensate flow should be laminar c. heat transfer should be at steady state d. all of the above	D
116.	Which of the following is NOT a type of condensation heat transfer process? a. drop-wise condensation b. bulk-wise condensation c. film-wise condensation d. none of the above	B
117.	On which surface does the drop-wise condensation occur? a. wettable surface b. non-wettable surface c. both a. and b. d. none of the above	B
118.	How can the rates of heat transfer from drop-wise condensation and film condensation be compared? a. the rate of heat transfer from drop-wise condensation is lower than that of film condensation b. the rate of heat transfer from drop-wise condensation is higher than that of film condensation c. the rate of heat transfer from drop-wise condensation is equal to that of film condensation d. unpredictable	B
119.	Film condensation occurs on a surface when..... a. condensate can wet all the surface b. condensate cannot wet the surface c. both a. and b. d. none of the above	A
120.	The thermal resistance for heat transfer is low in..... a. drop-wise condensation b. film condensation c. both drop-wise and film condensation d. unpredictable	A
121.	Generally, the convection heat transfer coefficient in drop-wise condensation is a. lower than the convection heat transfer coefficient in film condensation b. higher than the convection heat transfer coefficient in film condensation c. equal to the convection heat transfer coefficient in film condensation d. unpredictable	b
122.	Surface coating is suitable to maintain a. drop-wise condensation b. film condensation c. both drop-wise and film condensation d. none of the above	a
123.	A falls in temp by 10 C reduces the rate of chemical, biological reactions and retards the activities of microorganism by: A) one half B) two half C) three half D) four half	A
124.	Lemons, papaya or nectarines are immersed in hot water to pasteurized for: A) 46-54 C for 1-4 min B) 48-56 C for 2-4 min C) 50-55 C for 1-4 min D) 40-50 C for 1-2 min	A
125.	Shell eggs are usually dipped in light minerals oil for _____ hours after laying: A) 12-18 hours B)14-15 hours C)15-16 hours D)12 to 24 hours	D
126.	Ethylene gas is often used as _____ to degree citrus fruits. A) Color modifier B) texture modifier C) Taste enhancer D) physical impact	A
127.	The refrigeration temperature in the refrigerator cabinet is _____: A) 4 to 8 C B) 3 to 7 C C) 4 to 5 C D) 4 to 10 C	D
128.	One Ton of green beans, sweet corn and okra stored for _____ hours at _____ C generate over 252 kilo calories (1000 BTU) A) 12 hours;2 C B)18 hours; 4 C C)10 hours;6 C D)24 hours;4.5C	D
129.	Oranges, Pineapples and potatoes will be best stored at _____ C. A) 1 to 7 C B) 2 to 5 C C)3 to 8 C D) 2 to7 C	D
130.	Bananas, grapefruits, lemons, limes, mangoes, tomatoes and sweet potatoes are kept at a temperature _____ C for max-life. A) 7 to 12 C B) 8 to 10 C C) 7 to 13 C D) 2 to 6 C	C
131.	Molds grow in a RH of _____. A) 80-85% B) 80-90% C)85-90% D) 90-95%	C
132.	In case of meat, the recommended RH at 0 C is _____ at 2.2 C is _____ and 4.4 C is _____ respectively. A) 92%; 88%;55% B)50%;45%;95% C)85%;96%;36% D)92%;88%;75%	D
133.	The human pathogens do not thrive below _____ C while normal food spoilage organisms will not grow below _____ C respectively. A) 2.3C ;7C B) 3.9 C; -9.3C C) 9.3 C; -6.7 C D) 3.3 C; -9.4C	D

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134.	The temperature used in still air sharp freezer ranges b/w _____C. A) -24 C to -25 C B) -23C to -29C C) -30 C to -45 C D) -69 C to -69 C	B
135.	In blast freezing has the temp ranges _____C and the air velocity in blast freezers are _____m/sec. A)-40 to -46 C; 10 m/sec B)-30 to -35 C :15 m/sec C)-45 to -50 C ;20m/sec D)-29 to -47 C ;15m/sec	D
136.	The efficiency of indirect freezers depends upon the extent of contact b/w the _____ and the food. A) Hot surface B) walls C) Cold surface (plates) D) all of them.	C
137.	In Immersion freezing method; the sugar solution containing _____% sucrose or a brine containing _____ NaCl, will be sufficient to lower the temperature to -21 ^o C. A) 60% ;20% B) 55%;25% C) 70%;30% D) 62%; 23%	D
138.	Liquid CO ₂ and the liquid N ₂ that have B.P of _____C to _____C respectively. A) -40C;120C B) -60 C;-138C C) -60C;-47C D) -79C;-196C	D
139.	A solution from which water cannot be crystallized is known as _____. A) Freezing temp B) Boiling point C) Crystallization D) Eutectic mixture	D
140.	Heated canned orange juice can stay for up to 27 months at _____C and up to 10 months at _____ C and only 4 months at _____C respectively. A) -20C;-16C;-6C B) -21C;-10C;-85C C) -18C;-12C;-6.7C D) all of them	C
141.	Moulds have been found growing at _____C on meats and vegetables. A) -6C B) 6.8C C) -7.8C D) -10C	C
142.	The rate of moisture evaporation from the free-surface of a food depends upon the: A) food material & particle size B) bed depth C) humidity, temp, velocity of air D) All of them	D
143.	Geothermal energy is; a. a renewable energy resource b. alternative energy source c. in-exhaustible energy source d. any of the above.	D
144.	The disadvantage of renewable sources of energy is; a. lack of decidability b. availability in low energy densities c. intermittency d. all of the above.	D
145.	Classification of energy on the basis of Physical state? a. Solid b. Liquid c. Gaseous d. All of them	D
146.	In the Geysers, steam is continuously vented through fissures in the ground. These vents are called; a. vent holes b. pot holes c. fumaroles d. sun spots	C
147.	Geologists believe that below the earth's crust, the molten mass exists in the form of; a. Magma b. Vent c. Hot cell d. Liqutation.	A
148.	In hydrothermal, source of geothermal energy is a. Hot water or steam is available b. Hot gases are available c. Molten lava is available d. None of the above.	A
149.	In axial flow turbines, only part of the available head is converted into velocity, a. Before the water enters the wheel b. Water is admitted over part of the circumference c. It is possible that the wheel may run full d. It is possible to regulate the flow	C
150.	Solid Energy Resources are? a. Wood b. Diesel c. Gas d. Coal	A
151.	When geothermal energy is available in the form of saline water, power is developed using a. flashed-steam system b. binary-cycle system c. total flow system d. any of the above.	D

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152.	Which of the following area is preferred for solar thermal electric plants? a. mountain tops b. hot arid zones c. coastal areas d. high rainfall zones.	B
153.	In solar thermal conversion systems, the solar heat is transferred to a. water-steam b. liquid metals c. molten salts d. any of the above	D
154.	The consideration involved in the selection of the type of electric drive for a particular application depends on; a. Speed control range and its nature b. Starting torque c. Environmental conditions d. All of the above	D
155.	Which of the following is preferred for automatic drives? a. Synchronous motors b. Squirrel cage induction motor c. Ward Leonard controlled DC motors d. Any of the above	C
156.	Photovoltaic energy is the conversion of sunlight into: a. Chemical energy b. Biogas c. Electricity d. Geothermal energy	A
157.	The advantage of a synchronous motor in addition to its constant speed is; a. high power factor b. better efficiency c. lower cost d. all of the above.	A
158.	Which of the following is not the transmission voltage in America? a. 66 kV b. 132kV c. 264 kV d. 400 kV	C
159.	Boosters are basically; a. inductors b. capacitors c. transformers d. synchronous motors	C
160.	Transmission efficiency increases as; a. voltage and power factor both increase b. voltage and power factor both decrease c. voltage increases but power factor decreases d. voltage decreases but power factor increase	A
161.	Thousands of mirrors or curved metals are used to focus solar energy on to small point to make it very hot happens in; a. solar cells b. solar heater c. solar furnace d. solar battery	C
162.	Wind is beneficial resource as it doesn't cause pollution and; a. Free b. never stop c. steady d. costly	A
163.	Hot water or steams carrying geothermal energy often comes up to surface in countries; a. New Zealand b. Ice land c. Pakistan d. both a and b	D
164.	Panels which are black painted to trap heat and energy from sun which are hanged at roofs are; a. solar cells b. solar heater c. solar furnace d. solar battery	B
165.	A fuel cell, in order to produce electricity, burns: a. Helium b. Nitrogen c. Hydrogen d. None	C
166.	Most people wear white or light colored clothes in summer, because light colors; a. Absorb more heat b. Reflect less heat c. Reflect more heat	C

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	d. Transfer less heat	
167.	Like light and heat, radio waves can travel in; a. Water b. Solid c. Sand d. Vacuum	D
168.	Color and texture that is poor reflector of radiant heat is; a. shiny and black b. dull and black c. shiny and white d. dull and white	B
169.	People paint their cars silver in summer to avoid; a. heat release b. heat absorption c. heat transfer d. birds	B
170.	Color and texture that is best reflector of radiant heat is a. black and shiny b. white and shiny c. black and dull d. white and dull	B
171.	Things which give off light are called a. light sources b. stores of light c. lamps d. solar energy	A
172.	Mirror and diamond are considered a. light sources b. not as light sources c. primary source of light d. light generators	B
173.	Man-made source of light includes----- a. oil lamp b. burning wood c. fireworks d. all of them	D
174.	Energy savers such as florescent bulbs require less energy than a----- a. filament bulb b. zero bulb c. sparkler d. oil lamp	A
175.	There are sources of light which run on electricity they include; a. Traffic light b. Sunlight c. Fire d. Lightning	A
176.	Minimum thickness of crust under oceans is; a. 8 km b. 2 km c. 5 km d. 10 km	C
177.	Inner core of Earth is made up of----- a. Copper b. Iron c. Nickel-iron alloy d. Platinum	B
178.	Theory which states that plates of earth are continuously moving is classified as; a. The Trench Drift Theory b. The Sphere Drift Theory c. The Continental Drift Theory d. The Oceanic Drift Theory	C
179.	Outermost layer of Earth is; a. Asthenosphere b. Crust c. Trench d. Tidge	B
180.	Graph which shows changes over a specific time period is called; a. Meridian graph b. Pie graph c. Line graph d. Bar graph	C
181.	Half of Equator as South is classified as;	A

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	<ul style="list-style-type: none"> a. Southern Hemisphere b. North pole c. South pole d. Northern Hemisphere 	
182.	<p>Same line of 180°W and 180°E which is opposite Prime Meridian is also known as;</p> <ul style="list-style-type: none"> a. Latin Date line b. International Date Line c. Arctic Date Line d. Antarctic Date Line 	B
183.	<p>Rotation in which Earth rotates is from-----.</p> <ul style="list-style-type: none"> a. west to east b. east to west c. north to south d. south to north 	A
184.	<p>Side of Earth which faces Sun have-----.</p> <ul style="list-style-type: none"> a. summer season b. day c. night d. winter season 	B
185.	<p>In Southern Hemisphere, places nearer to South Pole have;</p> <ul style="list-style-type: none"> a. longer nights b. shorter nights c. longer days d. shorter days 	A
186.	<p>Day on which Autumnal Equinox occurs is;</p> <ul style="list-style-type: none"> a. 23rd June b. 23rd September c. 22nd December d. 23rd March 	B
187.	<p>If season in Northern Hemisphere is summer, then season in Southern Hemisphere is;</p> <ul style="list-style-type: none"> a. Spring b. Autumn c. Winter d. none of the above 	C
188.	<p>If Northern Hemisphere is tilted to Sun, then days in Northern Hemisphere are;</p> <ul style="list-style-type: none"> a. Equal b. Short c. Long d. both a and c 	C
189.	<p>Higher level of floods and droughts are led by;</p> <ul style="list-style-type: none"> a. sand storms b. lower precipitation c. higher precipitation d. none of the above 	C
190.	<p>Day on which North Pole of Earth leaned away from Sun is called</p> <ul style="list-style-type: none"> a. Fall Equinox b. Spring Equinox c. Winter Solstice d. Summer Solstice 	C
191.	<p>Regions that receive low level of rainfall are</p> <ul style="list-style-type: none"> a. tropical regions b. Caribbean regions c. desert regions d. Brazilian regions 	C
192.	<p>China, Japan and South Korea are countries in region</p> <ul style="list-style-type: none"> a. North America b. East Europe c. East Asia d. West Asia 	C
193.	<p>Climate change leads to higher temperatures which results in-----.</p> <ul style="list-style-type: none"> a. lower moisture of soil b. faster evaporation c. higher water demand d. all of above 	D
194.	<p>Specific area where sediments, minerals and water are drained into common outlet is classified as</p> <ul style="list-style-type: none"> a. water detachment area b. water catchment area c. water reclamation d. meridian area 	B
195.	<p>Term used for buildings that are build close to one another for reducing usage of land is called-----.</p> <ul style="list-style-type: none"> a. decreasing capita space b. increasing capita space c. increasing density d. decreasing density 	C

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196.	Name of plant which can be used as biofuel is a. Jatropha Curcas plant b. Cactus c. Alnus glutinosa d. Maclura pomifera	A
197.	Shape and height of land is known as a. drainage b. relief c. climate d. weather	B
198.	River which runs across Yarlung Zangbao Grand Canyon plateau is a. Pinatubo river b. Yarlung Zangbao river c. Erebus grand river d. Kilimanjaro river	B
199.	Extensive stretched piece of land is classified as a. Hill b. Plateau c. Plain d. Valley	C
200.	Activities that people do to make living are called-----. a. Natural settlement b. Economic activities c. Social activities d. Natural activities	B
201.	Out of 30% land of Earth's surface, percentage of area which too cold to live is-----. a. 12% b. 5% c. 10% d. 9%	B
202.	Percentage of land surface of earth which is covered with hot deserts is-----. a. 13% b. 16% c. 21% d. 25%	A
203.	Fossils fuels are rich in carbon and-----. a. nitrogen b. hydrogen c. nitrogen d. oxygen	B
204.	Thousands of mirrors or curved metals are used to focus solar energy on to small point to make it very hot happens in a. solar cells b. solar heater c. solar furnace d. solar battery	C
205.	Wind is beneficial resource as it doesn't cause pollution and-----. a. free b. never stop c. steady d. costly	A
206.	Hot water or steams carrying geothermal energy often comes up to surface in countries-----. a. New Zealand b. Ice land c. both a and b d. Pakistan	C
207.	Fossils fuels are important sources of energy in-----. a. transport b. homes c. industries d. all of them	D
208.	Panels which are black painted to trap heat and energy from sun which are hanged at roofs are-----. a. solar cells b. solar heater c. solar furnace d. solar battery	B
209.	1 kilo joules is equal to-----. a. 100J b. 1000J c. 10J d. 0.1J	B

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210.	The radiation in the sunlight that gives us the feeling of hotness is _____. a. visible radiation b. infra-red c. Red d. ultra-violet	B
211.	When wind blows across seas and oceans, there are seen-----. a. whirling b. waves c. surfs d. snails	B
212.	When air holes of a Bunsen burner are closed, it will give-----. a. luminous flame b. non-luminous flame c. aluminous flame d. dull flame	A
213.	Trapped heat inside of earth is known as a. Thermal energy b. Geothermal energy c. Heat energy d. Volcano	B
214.	Which of the following is not a bio-mass source? a. Gobar gas b. Coal c. Wood d. Nuclear energy	D
215.	A dangerous activity which resulted in many deaths due to gas explosion, cave ins or flooding is-----. a. coal mining b. climbing mountain c. extracting oil d. hydropower generation	A
216.	The one thing that is common to all fossil fuels is that they: a. Were originally formed in marine environment b. Contain carbon c. Have undergone the same set of geological processes during their formation d. Represent the remains of one living organisms	B
217.	Boiling water reactor and pressurized water reactors are: a. Nuclear reactor b. Solar reactor c. OTEC d. Biogas reactor	A
218.	A substance which produces a lot of heat on burning is called _____. a. oxidizing agent b. Biogas c. Biomass d. Fuel	D
219.	Solar cells and solar furnaces are a. Cheap b. Expensive c. Free d. Complementary	B
220.	For heating purpose, more suitable flame is a. Luminous flame b. Non-luminous flame c. Aluminous flame d. Dull flame	B
221.	Almost every Earth's energy resource can be traced back to a. sun b. moon c. earth d. plants	A
222.	Fossil fuels are regarded as energy resources which are a. renewable b. non-renewable c. generating d. producing	B
223.	Rubbish is dug underground to produce a. methane b. biogas c. oxygen d. carbon dioxide	B
224.	Energy of running water is harnessed to run turbines in a. hydroelectric power stations b. railway stations	A

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	c. oceans d. wind turbines	
225.	The main constituent of LPG is _____. a. Methane b. Butane c. Hydrogen d. propane	B
226.	Types of fuel includes a. Kerosene b. Charcoal c. Firewood d. All of them	D
227.	BTU is measurement of-----. a. Volume b. Area c. Heat content d. Temperature	C
228.	The radiations emitted by a hot furnace are _____. 1. ultra-violet 2. infra-red 3. X-rays 4. micro waves	B
229.	Lignite, bituminous and anthracite are different ranks of: a. Nuclear fuel b. Coal c. Natural gas d. Biogas	B
230.	The maximum temperature that can be attained in a box-type solar cooker is _____. a. 200 °C b. 140 °C c. 80 °C d. 250 °C	B
231.	The process that converts solid coal into liquid hydrocarbon fuel is called: a. Liquefaction b. Carbonation c. Catalytic conversion d. Cracking	A
232.	Which among the following is not an adverse environmental impact of tidal power generation? a. Interference with spawning and migration of fish b. Pollution and health hazard in the estuary due to blockage of flow of polluted water into the sea c. Navigational hazard d. None of the above	D
233.	Horizontal axis and vertical axis are the types of _____. a. Nuclear reactor b. Wind mills c. Biogas reactor d. Solar cell	B
234.	Thousands of mirrors or curved metals are used to focus solar energy on to small point to make it very hot happens in _____. a. solar cells b. solar heater c. solar furnace d. solar battery	C
235.	Fossils fuels are important sources of energy in _____. a. Transport b. Homes c. Industries d. All of them	C
236.	When animal and plant decompose in absence of air, there is production of gas called _____. a. Oxygen b. Carbon dioxide c. Biogas d. Methane	D
237.	Hot water or steams carrying geothermal energy often comes up to surface in countries a. New Zealand b. Ice land c. both a and b d. Pakistan	C
238.	A solar cell converts _____. a. heat energy into electrical energy b. solar energy into electrical energy c. heat energy into light energy d. solar energy into light energy	B

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239.	The temperature difference between the upper layers and the deeper layers of the ocean should be _____ to install an OTEC power plant. a. 40 °C b. 50 °C c. 20 °C d. 30 °C	C
240.	The scientist who first carried out critical nuclear fission reaction is _____. a. Otto Hahn b. Enrico Fermi c. Hans Bethe d. Einstein	B
241.	The energy of a thermal neutron is about _____. a. 0.025 ev b. 0.25 ev c. 0.0025 ev d. 0.00025 ev	A
242.	The fuel used in the nuclear reactor is _____. a. Cadmium b. Radium c. Uranium d. Thorium	C
243.	Nuclear fusion reactions happen spontaneously in _____. a. the core of the earth b. the commercial nuclear reactor c. the atmosphere of the sun d. the eruption of a volcano	C
244.	Which of the following causes the least pollution when burnt? a. Petrol b. Diesel c. Coal d. Natural gas	D
245.	Advantages of extrusion cooking over other processes, a) Versatility b) Reduced cost c) Product quality d) All of these	D
246.	Extrusion is, a) Low moisture process b) High moisture process c) Water doesn't take part d) Both A and B	A
247.	Purpose of extrusion is to impart the product, a) Certain shape b) Specific form c) Change some physical properties d) All of these	D
248.	In cold extrusion, temperature is, a) High b) Low c) Ambient d) Depends upon conditions	C
249.	Co-extruder product is result of, a) Cold extrusion b) Ambient temperature extrusion c) Hot extrusion d) Both A and B	A
250.	Cooking temperature for extrusion is, a) 100 °C b) 110 °C c) 120 °C d) 150 °C	A
251.	Final product has density. a) Low b) High c) Depend upon processing method d) None of these	A
252.	Width of flow channel, resulting from the screw pitch is than its thickness. a) Less b) Greater c) Equal	B

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	d) May B and C	
253.	Heating and cooling devices are placed to barrel. a) Internal b) External c) Separately attached d) All of these	B
254.	In single screw extruder, hopper is, a) Positive feeding b) Gravity feeding c) Direct feeding d) Both B and C	B
255.	The driving motor size of extruder depends upon..... a) Extruder capacity b) Extruder size c) Product output required d) All of these	A
256.	Power of extruder motor is about..... a) 200KW b) 400hp c) 300KW d) Both B and C	D
257.	Screw speed in food extruder normally..... a) Greater than 300 b) Less than 500 c) Greater than 500 d) Less than 300	B
258.	Screw configuration corresponding to compression ratio is..... a) Between 1 to 4 b) Between 2 to 4 c) Between 1 to 3 d) Between 2 to 5	B
259.	Most of objectives of extrusion process occur through..... a) Shear b) Mixing c) Molting d) Both A and B	D
260.	Main function in feed section is act of..... a) Screw conveyer b) Presence of raw material c) Treating of raw material d) None of these	A
261.	Heating in cooking extruder is..... a) Rapid b) Slow c) Extremely rapid d) Extremely slow	C
262.	Friction with moving material occur..... a) On barrel b) On shaft c) On both surfaces of extruder d) On the food product	C
263.	Grooving helps at barrel surface. a) Improve slippage b) Reduce slippage c) No impact d) Both B and C	B
264.	Channel depth (H)=..... a) $R-R_0$ b) $R-R_i$ c) R_i-R d) R_0-R	B
265.	A kind of preservation technology, by which the material is cooled below its eutectic temperature or glass transition temperature, firstly to be solidified completely, then dried in vacuum space at low temperature by sublimation drying and desorption is known as (a) Spray drying (b) Bed drying (c) Freeze drying (d) Drum drying	C
266.	In Desorption Drying, % of moisture is removed. 85-99% (b) 65-79 % (c) 75-89% (d) 95-99%	D
267.	If the water vapor pressure of a food is below Torr and the water is frozen, when the food is heated the solid ice sublimates directly to vapor without (a) 4.58 Torr, Boiling (b) 4.58 Torr, Melting (c) 5.58 Torr, Heating (d) 3.58 Torr, Cooling	B

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268.	For 2nd stage of Freeze Drying, temperature ranges between _____. (a) 30-50 °C (b) 40-50 °C (c) 50-80 °C (d) 20-50 °C	A
269.	Time required for Freeze drying process is _____. a) 12-24 hours (b) 20-24 hours (c) 18-24 hours (d) 9-24 hours	D
270.	For Freeze Drying required Atmospheric Pressure & Boiling Point is _____. (a) 0.2 Pa, -30 °C (b) 0.3 Pa, -20°C (c) 0.3 Pa, -30 °C (d) 0.2 Pa, -40 °C	C
271.	Which Statement for the process of Freeze Drying is true? (a) Freezing -30°C (b) Under low pressure, even if ice is heated, ice evaporate as it is (c) When water is added to a dry product, it is restored to its original condition. (d) All A, B & C.	D
272.	Which Statement is False about Sublimation Drying Process? (a) Also called primary drying (b) The chamber is kept under High pressure by a vacuum pump (c) Heating frozen material inside the drying chamber (d) The frozen water inside material is sublimated directly to water vapor; and the material is dried.	B
273.	Which process starts from the outside surface and passes inward gradually? (a) Evaporation (b) Condensation (b) (c) Sublimation (d) Freezing	C
274.	The interface of frozen layer and the dried layer is called _____. (a) Sublimation front (b) Ice front (b) (c) Condensation (d) Both B & C.	D
275.	In Sublimation Drying process _____ is formed. (a) Porous Dried layer (b) Dew, fog & clouds (b) (c) NaCl & KCl (d) All A,B & C	A
276.	Freeze Dryer Consists of _____. (a) Vacuum chamber (b) Refrigerator Coil (b) (c) Vacuum pump (d) All A,B & C	D
277.	Diffusion of vapor from the Sublimation front occurs in _____. (a) Mass Transfer (b) Heat Transfer (b) (c) Conduction (d) Radiation	A
278.	Heat Radiation and Conduction from Slab occurs in _____. (a) Mass Transfer (b) Heat Transfer (c) Convection (d) Conduction	B
279.	Mass transfer rate between two fluid phases does not necessarily depend on the _____ of the two phases. (a) Interfacial area (b) degree of turbulence (c) Physical properties (d) Chemical properties	D
280.	Heat in BTU necessary to increase the temperature of 1 lb of gas and its accompanying vapor by 1°F is called the _____. (a) Humid heat (b) latent heat (c) Specific Heat (d) Sensible Heat	C
281.	Relative humidity is the ratio of the..... (a) Partial pressure of the vapour to the vapour pressure of the liquid at gas temperature. (b) Actual humidity to saturation humidity. (c) Partial pressure of the vapour to the vapour pressure of the liquid at room temperature. (d) None of these.	A
282.	1 g of ice forms _____. (a) 2 m ³ of vapor at 67 Pa (b) 3 m ³ of vapor at 67 Pa (c) 1 m ³ of vapor at 67 Pa (d) None of these	B
283.	During Freeze Drying when heat reaches the sublimation front, it raises the _____ of ice. (a) Temperature (b) Water vapor pressure (c) Both A & B (d) None of these	C
284.	During Freeze Drying the vapor moves through the dried food to a region of low vapor pressure in? (a) Vacuum Pump (b) Drying Chamber (c) Refrigerated Condenser (d) All of these	B
285.	The integral part of all operations/processes of milk and milk products manufacturing units. (a) Thermal Processing (b) Chemical Processing (c) Physical Processing (d) Microbial Processing	A
286.	The most resistant organism present in the milk	C

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	(a) Coxiella burnettie (b) Typhus (c) Tubercle bacilli (d) Coli form	
287.	In low temperature long time method milk is heated for (a) >80 °C (b) 72 °C (c) 63 °C (d) 92 °C	C
288.	Time required for low temperature long time method (a) 15 – 20 s (b) 1800 s (c) 2 -4 s (d) 5 s	B
289.	In high temperature short time method milk is heated for _____. (a) >80 °C (b) 72 °C (c) 63 °C (d) 92 °C	B
290.	46. Time required for high temperature short time method _____. (a) 15 – 20 s (b) 1800 s (c) 2 -4 s (d) 5 s	A
291.	47. The temperature required for ultra-high temperature treatment _____. (a) 72 °C (b) 63 °C (c) 101 °C (d) 135 – 150 °C	D
292.	48. Time required for ultra-high temperature treatment is (a) 1 – 6 s (b) 10 s (c) 15 s (d) 180 s	A
293.	49. For thermization process, the milk is heated at _____. (a) 100 °C (b) 63 – 65 °C (c) 72 °C (d) 92 °C	B
294.	The methods of UHT treatment for milk processing. (a) 2 (b) 3 (c) 4 (d) 5	A
295.	The temperature required for ultra-pasteurization is _____. (e) 115 – 130 °C (f) 63 °C (g) 150 °C (h) 110 °C	A
296.	The pasteurization destroys bacteria, yield mold approximately _____. (a) 80 % (b) 90 % (c) 99 % (d) 100 %	C
297.	Pasteurization destroys _____ enzyme. (a) Amylase (b) Liphase (c) Exylase (d) Cyclodextrin Glucano Tranferase	B
298.	Temperature required for sterilization (a) 115 – 121 °C (b) 135 °C (c) 150 °C (d) 100 °C	A
299.	Time required for the completion of sterilization process (a) 2 s (b) 10 s (c) 2-6 s (d) 180 – 780 s	D
300.	The temperature required for the treatment HTST of Cream _____. (a) 115 – 121°C (b) >80 °C (c) 63 °C (d) 95 °C	B

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301.	LTLT method is suitable for small quantities ranging from (a) 100 – 500 L (b) 500 – 100 L (c) 200 – 1000 L (d) 100 – 2000 L	C
302.	The UHT treated milk can be stored for a time period (a) 15 days (b) 1 month (c) 2 – 6 months (d) 1 year	C
303.	Time required for Ultra Pasteurization is _____. (a) 2 – 4 s (b) 15 s (c) 1 min (d) 10 min	A
304.	Pasteurization cause the precipitation of _____. (a) Ca & Phosphorous (b) Magnesium (c) Zinc (d) Iron	A
305.	Freeze drying uses the technique of _____. (a) Boiling (b) Freezing (c) None (d) All of above	C
306.	Percentage of Moisture removed is, (a) 85-89% (b) 95-99% (c) Completely removed (d) None	B
307.	If the water vapor pressure of a food is below and the water is frozen. (a) 4.58 Torr (b) 610.05 Torr (c) 4.58 Pa (d) All of above	A
308.	The water vapor is continuously removed from the food by keeping the pressure in the freeze drier cabinet the vapor pressure at the surface of the ice. (a) Above (b) Same (c) Two times (d) None	D
309.	Time required for freeze drying is, (a) 9-24 hours (b) 24-48 hours (c) 48-72 hours (d) All of above	A
310.	The interface of frozen layer and the dried layer is called the front or the ice front. (a) Freeze (b) Primary (c) Secondary (d) Sublimation	D
311.	The surface temperature of the food in Freeze Drying does not exceed _____. (a) 60°C (b) 70°C (c) 80°C (d) 90°C	A
312.	Heat transferred by to only one side of the food. (a) Convection (b) Radiation (c) Conduction (d) All of above	C
313.	Freeze Drying shelf-life longer than when correctly packaged. (a) 1 month (b) 3 months (c) 6 months (d) 12 months	D
314.	In Freeze Drying the material is cooled below its temperature or glass transition temperature. (a) Eutectic (b) Boiling (c) Cooling (d) None	A

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315.	The water vapor is removed from the food while Freeze Drying. (a) Continuously (b) By parts (c) rapidly (d) Slowly	A
316.	Vacuum pump removes non-condensable (a) Vapors (b) Particles (c) Water (d) Residues	A
317.	Diffusion of vapor from the sublimation front is..... (a) Heat Exchange (b) Mass Exchange (c) None (d) Both (i) & (ii)	B
318.	Heat radiation and conduction from the slab (a) Heat Exchange (b) Mass Exchange (c) None (d) Both (i) & (ii)	A
319.	Parts of a Freeze Dryer are..... (a) Vacuum Pump (b) Condenser (c) Drying Chamber (d) All of above	D
320.	Advantages of Freeze Drying, (a) Improves appearance (b) Keeps food from spoiling for a long period of time (c) Significantly reduces the total weight of the food (d) Both (ii) & (iii)	D
321.	Pressure in Freeze Dryer is..... (a) <0.006 atm (b) >0.006 atm (c) =0.006 atm (d) <0.06	A
322.	Types of Freeze Dryers, (a) Accelerated freeze dryers (b) Radiation freeze dryers (c) Microwave and dielectric freeze dryers (d) All of above	D
323.	Food is held between two layers of expanded metal mesh, happens in? (a) Accelerated freeze dryers (b) Radiation freeze dryers (c) Microwave and dielectric freeze dryers (d) All of above	A
324.	Infrared radiation from radiant heater is used to heat shallow layer of food on flat trays, happens in.....? (a) Accelerated freeze dryers (b) Radiation freeze dryers (c) Microwave and dielectric freeze dryers (d) All of above	B
325.	The primary property of extrudate in $\tau = \mu r$ is, (a) τ (b) μ (c) r (d). μr	B
326.	Viscosity of food extrudates..... (a) decrease with increase shear rate (b) increase with increase shear rate (c) decrease with decrease shear rate (d) increase with decrease shear rate	A
327.	Examples of shear thinning is..... (a) Corn starch in water (b) Paint and emulsions (c) Ketchups (d) Both (i) and (ii)	D
328.	Value of 'n' for food extruders in power law model is normally, (a) <1.0 b. <2.0 c. >1.0 d. <1.5	A
329.	Two additional parameters with significant influence on flow of food extrudates are, (b) Moisture content and viscosity (c) Moisture content and temperature (d) Viscosity and temperature (e) Viscosity and specific gravity of food	B
330.	There are types of extruder flow. a. 3 b. 4 c. 5 d. 6	A

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331.	Flow inside extruder is_____ a. Steady b. Irregular c. Complex d. Transient	C
332.	Drag flow results in_____ a. Forward movement of material b. Reverse movement of material c. Blockage in system d. None of these	A
333.	The velocity of product being conveyed down the barrel by the screw at the screw surface is essentially_____ a. Maximum b. Minimum c. Zero d. None of these	C
334.	Pressure flow can be controlled by_____ a. Die orifice b. Screw configuration c. Actuators d. Both (i) and (ii)	D
335.	The leakage flow, we can say that, would be the gap between_____ a. Barrel and screw b. Orifice and screw c. Barrel and actuators d. All of them	A
336.	In drag flow equation, i.e. $Q = \alpha N$, α depends on, a. Screw geometry b. Value of N c. Number of barrels d. All of above	A
337.	The back flow is..... to viscosity of mass. a. Directly proportional b. Inversely proportional c. Shown no effect d. May (i) and (ii) both	B
338.	In single screw extruders, the portion of mechanical power used for building pressure and for pushing the mass through the die represents at most.....of total net energy input. a. 22% b. 24% c. 26% d. 28%	D
339.	The power number for viscous dissipation has been expressed in term of_____ a. Screw power number b. Power law model c. Both (i) and (ii) d. None of these	A
340.	Extrusion involves combination of_____ a. Transport process b. Thermal energy transfer c. Mass transfer d. All of them	D
341.	All ingredients involved in extrusion process flow through a channel with geometry. a. Irregular b. Defined c. Complex d. Both (b) and (c)	B
342.	Power requirements for extrusion process depends upon, a. Flow characteristics through channel b. Properties of fluid used c. Properties of extruder d. Both (i) and (ii)	D
343. measures the degree of shear thinning and shear thickening. a. Flow index b. Reynold number c. Shear force d. None of these	A
344.	In drag flow equation, Q_D is proportional to_____ a. Width of flow channel b. Height of flow channel c. Rotation speed d. None of these	C
345.	Driving force for the operation of a heat exchanger_____ a. Shear b. Strain c. Temperature difference d. all of these	C
346.	Fluid flow in opposite direction is called_____ a. Co current flow b. Parallel flow c. Counter current flow d. both a & c	C
347.	Heat exchangers which constructed from round channel is called a. Spiral b. Finned c. Compact d. none of these	C
348.	Heat exchanger which can operate at high pressure. a. Compact b. Shell and tube c. Finned d. both a & b	B
349.	Sublimation drying process also called a. Freeze drying b. Primary drying c. Oven drying d. both a & b	B
350.	The interface of frozen layer and the dried layer is called_____ a. Porous dried layer b. Sublimation front c. Vacuum dried layer d. both a & b	B
351.	1g of ice form ... of vapor at 67 Pa. a. $2m^3$ b. $3m^3$ c. $4m^3$ d. $6m^3$	A
352.	Type of freeze dryer a. Conduction b. Convection c. Irradiation d. both a & c	D
353.	Which flow effective for heat transfer in heat exchanger? a. Counter current flow b. Co current flow c. Parallel flow d. both a & b	A

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354.	The product can be stored for long time at what temperature? a. 4 b. 6 c. 8 d. 5	A
355.	During freeze drying heating rate will_____ a. Increase b. Decrease c. Constant d. none of these	A
356.	Freeze dryer consist of_____ a. Vacuum chamber b. Refrigerator coil c. Heater d. all of these	D
357.	During mass transfer the sublimation surface temperature will a. Decrease b. Increase c. Remain same d. none of these	B
358.	Slow drying process always occur by_____ a. Radiation b. Convection c. Conduction d. none of these	C
359.	Oxidative degradation of lipids or fats is caused by_____ a. Nitrogen b. Al c. O ₂ d. none of these	C
360.	Freeze drying of foods is applicable in_____ a. Exploration b. Navigation c. Traveling d. all of these	D
361.	Pasta presses is an example of_____ a. Hot extrusion b. Cold extrusion c. i & ii both d. none of these	B
362.	When the food passes through extruder cooker the final product becomes_____ a. Hot b. Dry c. Low density d. b & c both	D
363.	If radius of barrel becomes half then barrel diameter will be_____ a. Double b. Half c. Remain same d. none of these	C
364.	A device cutting the extrudate emerging from the die and consist of a rotating knife is called_____ a. Ribbon Die b. Cutter c. Hopper d. none of these	B
365.	What is MC standard for maize? a) 15% b) 15.5% c) 16% d) 16.5%	B
366.	MC during harvesting for wheat is_____ a) 14 to 18% b) 12 to 14% c) 14 to 20% d) none of these	A
367.	MC during harvesting of corn should be a) 14 to 18% b) 20 to 22% c) 18 to 22% d) 14 to 16 %	C
368.	During respiration, grains produce energy a) 2812 J b) 2834 J c) 2412 kJ d) 2834kJ	D
369.	Living organism include a) Visible kernel b) mites c) insects d) all of these	D
370.	Minimum limit of R.H for fungus growth. a) 50 to 55% b) 55 to 58% c) 65 to 68% d) 60 to 65%	C
371.	If MC on wet bases is 20% then MC on dry bases is a) 20% b) 25% c) 22% d) 18%	C
372.	If MC on dry bases is 15% then MC on wet bases is. a) 12% b) 13% d) 15% c) 18%	B
373.	Weight of corn in lbs in 1 bushel at standard MC is_____ a) 56lb b) 66lb c) 75 lb d) 55lb	A
374.	1 bushel is equal to_____ a) 1.234 ft ³ b) 1.832 ft ³ c) 2.355 ft ³ d) 1.245 ft ³	D
375.	Working temperature of oven in the determination of MC by direct method in degree centigrade_____ a) 120 b) 130 c) 125 d) 100	B
376.	MC determination by resistance method used for range_____ a) 11 to 13% b) 15 to 20% c) 11 to 16% d) 10 to 14%	C
377.	MC range by Dickey Johns Moisture Meter is_____ a) 11 to 16% b) 5 to 20% c) 5 to 45% d) 15 to 25%	C
378.	Optimum Temp range in degree centigrade psychrophilic bacteria is a) -8 to 0 b) 10 to 20 c) 25 to 30 d) 0 to 5	B
379.	The rate of reaction is approximately halved for every ____°C decrease below the optimum range a) 10 b) 5 c) 7 d) 10	D
380.	At 12% MC and 70 ^o F, the R.H is_____ a) 60% b) 55% c) 70% d) 65%	B
381.	At standard MC weight of wheat in lb in 1bushel is:_____ a) 50 b) 55 c) 60 d) 65	C
382.	Standard MC of wheat is_____ a) 12% b) 14% c) 15.5% d) 16%	A
383.	Capacitance method used for determination of MC, range of MC is_____ a) 15 to 20% b) 5 to 20% c) 5 to 15% d) 8 to 40%	D
384.	Optimum Temperature range of Thermophiles bacteria in degree centigrade is a) 25 to 40 b) 50 to 60 c) 40 to 50 d) 15 to 25	b

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385.	The percentage of time the machine operates at its full rated speed and width while in the field is known as_____. a. field efficiency b. field capacity c. theoretical efficiency d. theoretical capacity	A
386.	The machine cannot operate at its theoretical capacity at all times while it is in the field due to the following factors_____. a. Turning and idle travel b. Operating at less than full width c. Handling seed, fertilizer, chemicals, water or harvested materials d. All of these	D
387.	The field efficiency is always less than_____. a. 100-percent b.90-percent c.75-percent d. None of these	A
388.	Effective Machine Capacity may be expressed in the units_____. a. acre/h b. ton/d c. yard/year d. both a and b	D
389.	_____ has a revolving drum with projecting teeth that strip off the grain when a sheaf of wheat is held against the moving surface. a. tractor drawn thresher b. combine harvester c. self-propelled harvester d. none of these	A
390.	Self-propelled harvester includes the processes_____. a. threshing b. separation c. storage d. all of these	D
391.	The straw (<i>bhoosa</i>) is used as_____. a. animal feed b. bedding c. cooking fuel d. All of these	D
392.	For tangled/lodged crop, type of reels used_____. a. Pick up reel b. Bat type reel c. both d. none of these	A
393.	Reel speed w.r.t. machine forward speed is_____ fast for wheat a.25 % b.30% c.50% d. none of these	A
394.	Reel speed w.r.t. machine forward speed is _____ fast for barley a.50% b.20% c.25% d.100%	A
395.	Cutter bar field speed is a. 2-3m/s b.1.3-3 m/s c.5 m/s d. none of these	B
396.	Knife separation pitch for cutter bar must be _____times smaller than stalk diameter a. 2-3 b.3-4 c .1-2 d. All of these	A
397.	Thresher unit cause ___human injuries. a.20% b.30% c.16% d.50%	C
398.	Wheat matures at _____% MC a.30% b.35% c.40% d.12%	A
399.	For wheat, combine harvesting is done between_____ MC: a.15-18% b.20% c.30% d.20-30%	A
400.	Problems for harvesting wheat between 22-30% a. Kernels damage by threshing cylinder action b. Damaged grain will not keep well in storage due to attack of insect / pest c. The test weight per bushel is lowered d. all of these	D
401.	Problems of harvesting wheat below 14% are: a. More shattering loss (1-bushel/ acre for each 5-days) b. More cutter bar loss c. More green material growth in field which is ultimately taken by combine d. all of these	D
402.	The separation and cleaning occurs due to differences in the terminal velocities of grain and chaff material. a. terminal velocity b. pressure c. both of these d. none of these	A
403.	For the cleaning of short pieces of straw the terminal velocity ranges from a. 2-5% b.1-2 % c.3-10% d.5-9%	A
404.	For wheat grain _____, threshing unit is used: a. Rasp bar cylinder and concave b. Spike tooth cylinder and concave c. Angle bar cylinder and concave d. none of these	A
405.	The factors that effects the harvesting and maturity of fruits and vegetable a- Temperature b- Daylight hours c- Rainfall d-All the of these	D
406.	The stage that is different between the physiological maturity and horticultural maturity in fruits and vegetables is: a- Maturityb- Immaturity c- Ripening d- None of these	C
407.	Periderm development is maturity indices in: a- Onion b- Tomato c- peppers d- Potato	D
408.	In tomato ripening _____ pink or red color shows but no more than _____ of tomato surface: a- 30% , 90% b- 30% , 70% c- 40%, 50% d- 20%, 20%	A

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409.	Color of tomato break from green to bruised fruit turnish yellow in _____ stage: a- Green b- turning c- breaker d- pink	C
410.	Clippers are used specially for ____ fruit: a- Mango b-apple c-citrus d-tomato	C
411.	Packing house operations are: a- Dumping / collection b- Postharvest Treatments c- Packing d- All of these	D
412.	The dry dumping is done by _____ fitted on the sloped ramp or moving conveyor belts. a- Soft brushes b- crushers c-washers d-cutter	A
413.	Washing with chlorine solution _____ is used to control inoculum: a- 100-150 ppm b-100-200ppm c-90-100ppm d-130-150ppm	A
414.	Size grading can be done with the use of standard _____. a- shape gauges b- size gauges c-pressure gauges d-none	B
415.	Precooling methods are: a- Forced air cooling b- Hydro-cooling c- Vacuum cooling d- All above	d
416.	Standard size for _____ Width1m x length1.2 m, height 0.5 m. a- Plastic box b- pallet box c- Polystyrene boxes d-Fiberboard boxes	B
417.	Popularly called thermocol boxes: a- Polystyrene boxes b- Plastic box c- pallet box d-Fiberboard boxes	A
418.	Some of the chemicals which inhibit ethylene production and / or action during ripening and storage of fruits are: a- MCP (1-methyl cyclopropene) b- AVG (Amenoethoxyvinyl glycine) c- silver nitrate d- All above.	D
419.	The hot water treatment at 50-52°C for 5 minutes to reduce the fungal infection during ripening or storage is for: a- Mango b-apple c-banana d-potato	A
420.	How long does fresh produce remain "fresh"? a- 1-2days b- 4-5days c-30 days d-3-4 days	D
421.	Best temperature and humidity level for storage a- Cool and dry 50°-60° F 60% RH b- Cold and dry 32°-40° F 65% RH c- Cold and moist 32°-40° F 95% RH d- All of above	D
422.	Bacteria thrive between: a- 32°-40° F 65% RH b- 40°F-140°F 60% RH c- 32°-40° F 95% RH d- None of above	B
423.	What happens when the freezer is above 0°F? Shelf life _____ a- Increase b-Decrease c-Remain same d-All of them	B
424.	The area under production for tomato increased to around _____ during 2004-2005. a- 112,000 ha b-115,00ha c-1110,000ha d-111,777ha	A
425.	Which content is distinguished between pulses and leguminous oil seeds? a. moisture b. protein c. fat d. none of these	C
426.	Which one is not belong to pluses? a. Beans b. Lentils c. Peas d. none of these	D
427.	If the drying facilities available then harvest lentils at moisture content? a. 14- 10 % b. 20 - 16 % c. 25- 22 % d. 28- 24 %	B
428.	Thresh lentil at MC if drying facilities unavailable a. 20% b. 18% c. 16% d. 14%	D
429.	Drying to 14 % MC _{wb} atminimizes mold growth that avoids discoloration and degradation of seed a. 10 c b. 13 c c. 15 c d. none of these	C
430.	The effectiveness of natural air drying systems is extremelydependent, so these systems must be carefully monitored. a. Maturity b. market c. weather d. none of these	C
431.	Lentil Seeds should not be cleaned or handled when ambient temperatures drop below..... because of the increased risk of seed splitting and cracking. a. 24c b. 23c c. 20c d. none of these	C
432.	68. Lentil Stored in tight bins and sell within years of harvest a. 4 b. 3 c. 2 d. 1	C

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433.	69. Psychometrics is the scientific study of thermodynamic properties of gas-vapor mixtures a. Solid-liquid b. liquid-vapor c. gas-vapor d. none of these	C
434.	Nitrogen is present in atmosphere a. 74% b. 76% c. 78% d. 80%	C
435.	Properties of standard atmosphere at different elevations at 15ckps pressure a. 101.325 b. 95.461 c. 89.874 d. 79.495	A
436.	The ratio of water vapor pressure (p_w) to its potential saturated water vapor pressure (p_{ws}) at constant dry bulb temperature and atmospheric pressure is called a. Humidity b. relative humidity c. absolute humidity d. none of these	B
437.	Ratio of mass of water vapor present per unit mass of dry air is called a. Humidity b. relative humidity b. c. absolute humidity d. none of these	C
438.	Pressure exerted by the water vapors when air is fully saturated is called a. Vapor pressure b. Saturated vapor pressure c. absolute vapors pressure d. none of these	B
439.	Partial pressure exerted by the water vapors is called a. vapor pressure b. Saturated vapor pressure c. absolute vapors pressure d. none of these	A
440.	Heat content of moist air is called a. Humidity b. relative humidity c. enthalpy d. a and b	C
441.	The temperature indicated by an ordinary thermometer at thermal equilibrium with air when placed in a ventilated room is called a. dry bulb temperature b. wet bulb temperature c. ambient temperature d. dew point temperature	A
442.	The temperature at which air water vapors begin to condense when the dry bulb temperature is reduced at constant atmospheric pressure (P) and absolute humidity (W) is called a. dry bulb temperature b. wet bulb temperature c. ambient temperature d. dew point temperature	D
443.	Swathed lentils can normally be combined days after mowing. a. 10-14 b. 14-18 c. 18-22 d. 22-26	A
444.	Post-harvest losses of pulses during harvesting is..... a. 1-3% b. 1-5% c. 1-7 % d. none of these	A
445.	81- How much capacity of combined harvesting..... a. 5ha/h b. 7ha/h c. 5ha/h d. 7ha/h	A
446.	How much labour are required for combined harvesting..... a-3 b-2 c-5 d-only 1	D
447.	The capacity of paddy mechanical ripening a- 1-3 ha/d b-2-4 ha/d c-2-8 ha/d d-none	B
448.	The temporarily storing harvested crop in piles..... a- cleaning b-stacking c-dehulling d-dehusking	B
449.	85- Moving the cut crop to the threshing location..... a- stacking b- dehusking c-cleaning d-hauling	B
450.	Separation of the paddy grain from the rest of cut crop is..... a- hauling b-stacking c-treshing d-none	B
451.	Rice should be harvestedafter the flowering a- 20 days b-25 days c-30 days d-40 days	B
452.	Time of crop harvested influences... a- yield b-quality c-storage of crop d-all of these	A
453.	Mechanical damage during harvested hastens the a-respiration rate b-spoilage c-colour d-both a,b	C
454.	The losses of paddy occurred during storage..... a- 1-5% b- 2-5% c-3-6% d- 1-10%	C
455.	The water use efficiency under conventional furrow method is quite low i.e. a- 20% b- 10% c-5% d-50%.	D
456.	Tubers should then be stored at in the dark for the remainder of storage. a- 35-40°F b- 30-35°C c-31-40°F d-35-49°F	a
457.	Curing is normally done at relatively warm temperatures: a- 10 °C to 60 °C b- 50 °C to 80 °C c-50 °C to 60 °C d-none	C
458.	Botanically mature ovaries and seed bearing parts of plants are known as a. Plant b. vegetable c. roots d. stem	A
459.	Edible parts of plant which are: a. Roots b. Stems c. none of these d. both a and b	D
460.	Mechanical damage during harvesting respiration rate and spoilage: a. Hasten b. slows down c. both a and b d. none of these	A
461.	Before drying of grains moisture content must be reduced up to: a. 8-2% b. 5% c. 7% d. 10%	A
462.	For dessert banana, date of harvest is based on: a. size b. maturity c. both a and b d. season	C

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463.	Fruits should normally be harvested: a. early in the day b. evening c. night d. afternoon	A
464.	Time of crop harvest influences a. yield b. quality c. storage of crop d. all of these	D
465.	Paddy must be harvested _____ days after flowering: a. 30 b.20 c.10 d.12	A
466.	Cleaning shoe losses caused by: a. Too much air from fan	D
467.	b. Too much material on chaffer c. Improperly adjusted chaffer and sieves d. All of these	A
468.	Air passing though the wet stored in bin grain picks up water up, carries it, and lowers the temperature of surrounding environment this process is? a) Adiabatic Process b) isothermal c) both a and b d) none of these	B
469.	50,000 lb of corn at 20% MC contain how much dry matter? a) 2000kg b) 40,000lb c) 3000lb d) 3500lb	D
470.	Wet bulb temp is 30F and wet bulb desperation is 7 F then dry bulb temp is a) 23 F b) 23 C c) 30 F d) 37 F	C
471.	At Mc 20% and temp 40 F then RH is 80% b) 70 % c) 86% d) 70 %	C
472.	For corn moistures above -----%, the equilibrium line can be assumed to be the saturation line. a) 10% b) 20% c) 25% c) 30%	D
473.	In air hydrogen % by volume is? a) 1% b) 0.5% c) 1.5 % d) 0.0001%	A
474.	Terminal velocity for short pieces of chaff is in m/s a) 1.5 to 2.5 b) 1 to 2 c) 2.5 to 3 d) none of these	B
475.	Paddy manual harvesting is -----person day/ ha a) 10 b) 15) c) 20 d) 12	C
476.	Oat standard weight in lb at standard MC a) 30 b) 25 c) 32 d) 35	C
477.	Optimum temp range in °C of Mesophilic bacteria is: a) 10 to 20 b) 20 to 30 c) 20 to 40 d) 30 to 40	A
478.	Plants should be irrigated at _____tension. a- 0.3 bar b- 0.4bar c-0.8bar d-none of these	B
479.	At 20° F the length of storage will be: a- 1 week b-3weeks c-6 weeks d-2 days	D
480.	A 40% reduction in cancer rate could be possible in Pakistan if we a- Exercise regularly b- Maintain a healthy weight c- Eat more fruits and vegetables d- All of these.	D
481.	What causes spoilage? a- Physical Damage b- Growth of microorganisms c- Enzyme Activity d- All of these.	A
482.	Pulses shall have not more than _____ extraneous matter a.1% b.2% c.0.1% d.2%	A
483.	Aeration fans should be able to provide : a. 1 to 2 cfm/bu b. 3 cfm/bu c. 0.1 cfm/bu d. 2.1 cfm/bu	A
484.	For minimum damage during combining, the moisture of corn should be: a. between 18 and 22% b. Between 14 and 18% c. between 12 and 13% d. between 15 and 20%	A
485.	_____ require near 100% relative humidity for growth: a. Bacteria b. fungus c. virus d. none of these	A
486.	The energy a person can receive by drinking a drop of mango juice is? A) 1/7 th B) 1/12 th C) 1/38 th D) 1/100 th	d
487.	1 BTU=? A) 4.187J B) 1033J C) 1056J D) 7.21J	C
488.	1 horsepower = ? A) 620.25 W B) 735.50W C 800W D) 333.25W	B
489.	The energy which the consumer buys are received? A) Final energy B) Use full energy C) Primary energy D) secondary energy	A
490.	Bio-gas and refinery oil is the example of? A) Final energy B) Use-full energy C) Primary energy D) secondary energy	D
491.	1 ton wood is equivalent to----- J? A) 9.81*10 ⁷ B) 9.83*10 ⁹ C) 9.56*10 ⁵ D) 5.26*10 ⁸	B

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492.	Heat content of the system is called? A) enthalpy B) Heat C) A&B D) none of these	A
493.	Energy Transfer during the phase change called? A) Sensible heat B) Latent heat C) Latent heat of vaporization D) none of these	B
494.	Latent heat of vaporization at 100C is _____ KJ/Kg? A) 331.56 B) 622.25 C) 2257.06 D) 3025.12	C
495.	Water at 101.3 kPa has a saturation temperature? A) 0 C B) 100C C) 50.25C D) 23.20F	B
496.	Latent heat of fusion of ice is at 0 C is KJ/Kg? A) 333.20 B) 101.3 C) 320.25 D) none of these	A
497.	The difference b/w steam temperature and saturation temperature called a) critical temperature b) critical moisture content c) super heated steam d) latent heat	C
498.	For a continues system, the unit of the sensible heat Q is_____ A) joule B) watt C) kJ/kg D) both A&B	B
499.	Specific heat of the water is in kJ/Kg.k A) 3.1416 B) 4.180 C) 4.256 D) none of these	B
500.	Energy due to the position of the system called_____ a) kinetic energy b) Potential energy c) Internal energy d) Gravitational energy	B
501.	Energy is_____ A) Cheaper B) Uniform C) Expensive D) All of these	C
502.	Work is +ve if it is done by the system on the A) Closed system B) Open system C) Surrounding system D) None of these	C
503.	Accumulation=_____ A) output- input B) input –output C) both of these D) none of these	B
504.	“Energy cannot be created neither be destroyed” is law of thermodynamics A) first B) second C) third D) all of these	A
505.	Heat or energy that flows as a result of temperature difference between_____ A) system B) surrounding C) A&B D) none of these	C
506.	Kinetic energy is equal to_____ A) mgh B) $1/2mv^2$ C) Fd D) none of these	B
507.	Mass flow rate is =_____ A) Q_{vp} B) Q_{vm} C) Q_{vn} D) all of these	A
508.	1 Ton coal is equal to_____ A) 29.31×10^9 J B) 23.22×10^9 C) 21.25×10^7 D) none of these	A
509.	Mass crosses the system boundary during the period of time covered by the energy balance is?_____ A) Closed system B) Open system C) System and surrounding D) All of these	B
510.	$Q=0$ if a system and its surroundings are at the same temperature or the system is perfectly_____ A) Adiabatic process B) insulated process C) non adiabatic process D) both A & B	D
511.	The density of a processed material is_____ property. A) extensive B) intensive C) A & B D) none of these	B
512.	Water flows into a process unit through a 2-cm ID pipe at a rate of 2.00 m /h. Calculate for this stream in joules/second. A) 0.870 J/s B) 0.852 J/s C) 0.711 J/s D) 0.625 J/ s	A
513.	The first law of thermodynamics for an open system at steady state has the form A) input-output B) output-input C) input=output D) input+output	C
514.	Crude oil is pumped at a rate of 15.0 kg/s from a point 220 meters below the earth’s surface to a point 20 meters above ground level. Calculate the attendant rate of increase of potential energy. A) 35300 j/s B) 31500 j/s C) 25600 j/s D) 0.2155 j/s	A
515.	A convenient way to tabulate measured changes in or is to choose a temperature, pressure, and state of aggregation as a A) initial state B) final state C) initial state – final state D) reference state	D
516.	Steam at 10 bar absolute with 190 C of super-heat is fed to a turbine at a rate 2000 kg/h. The turbine operation is adiabatic, and the effluent is saturated steam at 1 bar. Calculate the work output of the turbine in kilowatts, neglecting kinetic and potential energy changes. A) 185 kw B) 352 kw C) 252 kw D) 111 kw	C
517.	Accounting for energy flows in such processes is most conveniently done with A) Mechanical energy balance B) Chemical energy balance C) Potential energy balance D) Kinetic energy Balance	A
518.	In consequence, the quantity ($\dot{}$) always has a positive component, termed the_____ A) pressure B) Temperature C) Friction D) Force	C
519.	If no phase changes or chemical reactions take place, and pressure changes are no more than a few atmospheres in magnitude, then A) adiabatic B) isothermal C) thermal D) all of these	B
520.	If energy is not transmitted across the system boundary by a moving part (such as a piston, an impeller, or a rotor), an electric current, or radiation, then work A) maximum B) minimum C) zero D) none of these	C
521.	Work transferred across the system boundary by moving parts or as electricity or radiation called_____ A) shaft work B) flow work C) radian work D) only work	A
522.	SI unit of work done is_____ A) Joule B) Dyne C) Kg D) Pound	A
523.	Kj/Kg.k is the unit of..... A) work B) internal energy c) specific volume D) specific heat	D

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524.	In which property work transferred across the system boundary by moving parts or as electricity or radiation. A) specific property B) volumetric property C) intensive property D) none of these	A
525.	Rate of work done by the fluid at the system outlet minus the rate of work done on the fluid at the system inlet A) flow work B) shaft work C) work done D) none of these	A
526.	Specific enthalpies at each state can then be calculated from the definition A) $H=U+PV$ B) $w=pv$ C) $H=U-PV$ D) None of these	A
527.	What is the specific enthalpy of liquid water at 75°C and 1 bar? A) 315 B) 310 C) 300 D) 290	A
528.	For solids and liquids, Internal energy is independent of A) Temperature B) pressure C) Specific volume D) Specific heat	B
529.	Heat must be transferred from the condenser at a rate of KW to achieved to cooling and condensation. A) 2352 B) 5265 C) 2545 D) 2320	D
530.	The ability to do work..... A) force B) work C) energy D) pressure	C
531.	1 calorie =.....j A) 5.162 B) 4.187 C) 4.26 D) 3.14	B
532.	No energy conversion is perfect; always get some loss as heat A) first energy law B) third law C) second energy law D) none of these	C
533.	What is energy? A) power x time B) time x power C) time * force D) A&B	D
534.	Where from this energy come? A) Low head hydro-power B) Petroleum C) A&B D) non od these	C
535.	Energy as it is available in the natural environment A) secondary energy B) primary energy C) Tertiary energy D) all of these	B
536.	Shaft power, heat is the example of energy A) final B) use full C) primary D) secondary	A
537.	Which one is the form of energy? A) potential B) kinetic C) thermal energy D) all of these	D
538.	Example of energy balance..... A) Reactor B) Crystallizer C) Drier D) all of these	D
539.	All energy possessed by a system other than kinetic and potential energy - energy due to the motion of molecules relative to the center of mass of the system A) kinetic energy B) internal energy C) potential energy D) thermal energy	B
540.	Energy may be transferred between such a system and its surroundings in two ways: A) open system B) semi open system C) closed system D) semi closed	C
541.	Temperature, pressure, and density is the type of properties A) intensive B) extensive C) both A&B D) none of these	A
542. is the total rate of energy transport by the output streams plus the rate at which energy is transferred out as work (W). A) input stream B) output stream C) accumulation D) all of these	B
543.	power= w A) j/s B) kg/s C) mole/s D) J/kg	A
544.	Why we need energy? A) Transportation B) Centralized heating and air conditioning C) Lighting D) all of these	D
545.	How many Stages of energy flow? A) 4 B) 7 C) 5 D) 9	A
546.	Material entering in the system..... A) Output B) Input C) None of these D) All of these	B
547.	A mole is 'the amount of a substance that contains as many elementary entities as there are atoms in A) 0.012Kg of carbon 12 B) 0.018Kg of Carbon 12 C) 0.014Kg of Nitrogen 14 D) 0.24kg of Nitrogen 14	A
548.	A mole of composed ofMolecules A) 8.02×10^{23} B) 7.02×10^{23} C) 6.02×10^{23} D) 9.02×10^{23}	C
549.	Unit of Specific Gravity is..... A) g/cm ³ B) cm ³ /g C) kg/m ³ D) Dimensionless	D
550.	Density of Water at 4°C in Pound/Cubic feet is A) 100.43 B) 1000 C) 62.43 D) 69.43	C
551.	If Bromopentane has a Specific gravity of 1.57 what will be density in lb/ft ³ A) 107.86 B) 1.57 C) 97.97 D) 1570	C
552.	If CO ₂ (M=44) flows through a pipeline at rate of 100kg/hr what is molar flow rate of CO ₂ A) 3.37kmol/hr B) 2.27kmol/hr C) 4.47kmol/hr D) 5.57kmol/hr	B
553.	Specific Volume is of Density? A) Inverse B) Directly Proportional C) Equal D) None of these	A
554.	Principle of Conversation of Mass is..... A) Mass can be Created B) Mass can be destroyed C) Mass can neither be created nor destroyed D) All of these	C
555.	Material Balance without reaction input is Equal to..... A) Input - Accumulation B) Input + Accumulation C) Input ÷ Accumulation D) Input × Accumulation	B
556.	In Closed System, there is..... A) No Material Transfer B) Some Material Transfer C) none of these D) No Energy Transfer	A

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557.	At Steady state, Accumulation is _____. A) 50 B) 100 C) -100 D) Zero	D
558.	Semi batch Process_____ A) Neither batch nor Continuous B) Input & Output flow continuously C) Feed fed at beginning & Product remover at end D) All of these	A
559.	Mass Transfer Coefficient 1lbmol/h ft ² is equal to kgmol/s m ² A) 1.3562×10 ⁻³ B) 13562 C) 16543×10 ⁻² D) 1.5465×10 ³	A
560.	Material Leaving a process is_____ A) Accumulation B) Consumption C) Output D) Input	C
561.	How many pounds of NaOH are in 7.5 g mol of NaOH A) 0.771 lb B) 0.661 lb C) 0.551 lb D) 0.441 lb	B
562.	Rota-meter is Used to measure? A) Density B) Specific Gravity C) Weight D) Flow rate	D
563.	Limiting Reactant is if present? A) more than Stoichiometric proportion B) less than Stoichiometric proportion C) Equal to Stoichiometric proportion D) A & B both	B
564.	Fractional Conversation is ratio of A) moles of feed reacted/moles of feed introduced B) moles of feed consumed/moles of feed introduced C) moles of feed of introduced/moles of feed reacted D) Accumulation/Input	A
565.	Yield is _____. A) moles of desired/moles formed at 100% conversation B) Accumulation/output C) moles of desired product/moles of undesired product D) Consumption × Accumulation	A
566.	Which one is the Package? a) Bottling b) box c) wrapping d) all of these	b
567.	Package is a a) Process b) Object c) Design d) all of these	B
568.	Glass manufacturing is done using a) Primary convertors c) Tertiary convertors b) Secondary convertors d) None of these	a
569.	Which is not a Marketing function of Packaging a) Display b) sell c) communicate d) Transport	d
570.	Anti-corrosion bags are example of which type of packaging a) Institutional b) Industrial c) military d) All of these	c
571.	Ideally, packaging cost should be-----less than product cost. a) 5% b) 7% c) 10% d) 13%	C
572.	Vertical lines on the package gives which type of feeling a) Dignity b) Vitality c) Grace d) calm	A
573.	For export consideration, Package must be ----- time stronger. a) 1.5-2 b) 2-2.5 c) 2.5-3 d) 3-4	A
574.	If there are a lot of vibrations while transporting the Package which factor must be considered in designing a) resonant frequency c) fragility factor b) safe compressive load d) All of these	A
575.	The total number of DHL required to package a single unit is estimated DHL = ? a) $\frac{\text{number in crew}}{\text{line speed}} \times \text{efficiency factor}$ c) $\frac{\text{line speed}}{\text{number in crew}} \times \text{efficiency factor}$ b) $\frac{\text{60min}}{\text{line speed}} \times \text{number in crew}$ d) $\frac{\text{line speed}}{\text{number in crew}} \times \text{60min}$	A
576.	Which one is the secondary function of packaging a) Temper indication b) preservation c) nutritional information d) all	A
577.	Packaging provides protection from ----- influence. a) Biological b) Physical c) chemical d) all	D
578.	-----provide a nearly absolute barrier to chemical and other environmental factors. a) Glass b) metals c) plastics d) all of these	D
579.	Glass is material of choice for ----- a) Liquid foods b) high moisture foods c) Frozen foods d) all of these	B
580.	Which one is not a property of glass a) Readily recyclable b) stable with acids c) stable at high temperature d) Pure	A
581.	Glass is a ----- a) Organic substance b) Inorganic substance c) Polar Substance d) Both b and c	B
582.	What is Cullet? a) Wood Parts b) Broken Glass c) Silica Sand d) Alumina and soda ash	B
583.	----- is used as a melting agent in glass a) Alumina b) Limestone c) Soda ash d) Silica	C
584.	Glass is composed of ----- of silica a) 69% b) 72% c) 88% d) 92%	b
585.	Glass is made water soluble using_____ a) Sodium compound b) Calcium Compound c) Aluminum Compound d) All of these	B
586.	Which material is rated as “GRAS” by FDA U.S. a) Glass b) Tin c) Metal d) Paper	a

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587.	Shallow drawn containers with friction or slip covers were used for a) Solids b) Semisolids c) Liquids d) Both a and b	b
588.	----- piece cans can easily be changed in length & diameter. a) Two b) Three c) four d) do not change shape	B
589.	----- package is used when welding is not the requirement a) Tin Free steel b) stainless steel c) aluminium d) tin cans	A
590.	Low carbon steel are the most common form of steel, containing approx. ----- of carbon a) 0.15 - 0.25% b) 0.01 – 0.1% c) 0.05 – 0.15% d) 0.2 – 0.25%	c
591.	The name “tin can” is not strictly correct, since ----- is the predominant can making material. a) low-carbon steel b) Stainless Steel c) high carbon steel d) mild steel	a
592.	Tin can is lacquered with ----- to provide inert barrier between food and the metal a) epoxy phenolic resins b) oleo resinous Group c) vinyl resins d) All of these	d
593.	----- is known as electrolytically chrome coated steel. a) Stainless steel b) tin free steel c) tin plated steel d) low carbon steel	b
594.	----- is said to be the most versatile material on earth. a) Plastics b) Paper c) Glass d) Metal	a
595.	Most commonly used plastic in food industry is----- a) PETE b) PEN c) HDPE d) others	a
596.	Less commonly used plastic in food industry is----- a) PETE b) PEN c) HDPE d) others	d
597.	PETE formed when terephthalic acid reacts with a) Ethyl alcohol b) poly ethylene c) ethylene glycol d) Both b&c	c
598.	----- provides protection against transfer of flavours and odours. a) PETE b) PEN c) HDPE d) others	b
599.	----- commonly known as nylon a) Polyesters b) polystyrene c) polyamide d) Ethylene vinyl alcohol	c
600.	Lamination and co-extrusion are the methods of ----- plastics. a) Combining b) extruding c) moulding d) reshaping	A
601.	----- paper is made from acid-treated pulp (passed through a sulphuric acid bath). a) Kraft paper b) Sulphite paper c) glassline paper d) Parchment Paper	D
602.	Which one is the strongest paper of all? a) Kraft paper b) Sulphite paper c) glassline paper d) Parchment Paper	A
603.	Substance capable of being flow, molded and shaped are called ----- a) Glass b) Plastic c) metals d) Paper	b
604.	The Society of the Plastics Industries (SPI) developed two profiles to be used with plastic bottles. M-style thread-engaging surfaces are angled at a) 10° b) 15° c) 20° d) 30°	a
605.	The ISO states that material weighing greater than ----- known as paperboard. a) 200g/m ² b) 250g/m ² c) 300g/m ² d) 150g/m ²	b
606.	The mixture of pulp, water (approx. 98%) & additives (sizing, filler) known as-----. a) Furnish b) Lamella c) Fibrillation d) glassine	a
607.	Fine papers may be specified by the weight in pounds per ream. A ream is ----- sheets a) 250 b) 500 c) 750 d) 1000	b
608.	The physical properties of paper vary dramatically with moisture content, thus all paper testing must be done at a precisely controlled temperature & humidity. Internationally, the standard conditions are specified as----- a) 23°C & 50% R.H b) 25°C & 55% R.H c) 27°C & 60% R.H d) 29°C & 65%	a
609.	Standard furnace glasses are restricted to ----- main colours. a) 1 b) 2 c) 3 d) 5	c
610.	Draw and re-draw is used when the height of can is----- its diameter. a) Less than b) equal to c) Greater d) Equal to or greater than	d
611.	Which one is Hygro-scopic plastic? a) Polyethylene b) Nylon c) Polycarbonate d) All of these	d
612.	A blister is a bubble in the glass not greater than----- a) 0.5mm b) 1.0mm c) 1.5mm d) 2.0mm	c
613.	Which class of glass packages helps to filter out ultraviolet radiations? a) Flint-basic clear glass c) Emerald-Bright green glass b) Amber-Brown glass d) None of these	b
614.	Georgia Green colour glass Bottles used for ----- a) Wine b) white Products c) Coffee d) Light sensitive Products	a
615.50	Black colour is imparted in glass using-----. a) Iron oxide b) chromium oxide c) Cobalt Oxide d) Manganese	a
616.51	Insolubility in Glass is imparted by using----- a) Calcium compounds b) Sodium Compounds c) Oxygen d) Silicon crystals	a
617.52	Cullet is-----. a) Irregular shape of final glass c) Mixture of silica and soda ash b) Final feed to moulding machine d) Recovered Broken glass	d
618.	Which Packaging material is suitable for microwave oven? a) Glass b) metal c) plastic d) All of these	d
619.	Stone is a ----- in glass. a) Contaminating grain b) Un-melted particle c) bubble d) All of these	b
620.	Which factor affects the tooling cost? a) Resin type b) Dimensional Tolerance c) type of method d) All of these	d
621.	In plasticating extruder, the pressure at the die will be-----	a

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	a) 5000 psi b) 10000 psi c) 15000 psi d) 20000 psi	
622.	Blown film uses ----- air cooling to remove heat from the polymer extrusion. a) Slow b) Fast c) Blast d) both b & c	a
623.	Glass has ----- structure. a) Crystalline b) Non- Crystalline c) amorphous d) none of these	b
624.	Which is not the component of glass structure, a) Soda lime b) calcium oxide c) sodium carbonate d) All of these	a
625.	Every 10% increase in recycling glass results in 6% decrease in ----- a) CO ₂ b) NO ₂ c) SO ₂ d) Raw Material	c
626.	The blow-and-blow process is used for ----- bottles/jars. a) Narrow necked b) Wide mouthed c) oblong shaped d) all of these	a
627.	The press-and-blow process used for making ----- bottles/jars. a) Narrow necked b) Wide mouthed c) oblong shaped d) all of these	b
628.	The Lehr is a controlled-temperature oven through which the glass ware is carried on a moving belt at a rate of about ----- mm/minute a) 100-200 b) 200 – 300 c) 300-400 d) 400-500	b
629.	Blue colour in glass is imparted by using ----- a) Cobalt oxide b) ferric Oxide c) chrome oxide d) ferric sulfate	A
630.	For maintaining the purity of food and beverages, glass is ----- percent efficient. a) 75 b) 78 c) 82 d) 85	B
631.	For preserving a product's taste or flavour, glass is ----- percent efficient. a) 75 b) 78 c) 82 d) 85	a
632.	----- Packaging material is 100% recyclable without change in purity. a) Metal b) paper c) glass d) Plastic	c
633.	Newer furnaces are using ----- instead of -----, eliminating possible pollution source, while also reducing the overall energy requirement by up to one-third. a) Air , oxygen b) oxygen, Air c) Nitrogen, oxygen d) oxygen, nitrogen	a
634.	Colouring agent is added in glass with ----- . a) Ingredients b) In melt Furnance c) at forhearth d) All of these	d
635.	Which type of products have consistent density? a) Discrete b) free flowing c) Non- free flowing d) all of these	B
636.	----- fillers are designed for "Top filling". a) Constant volume b) constant level c) constant weight d) none of these	a
637.	Bottom up fillers are used to inhibit----- a) Frothing b) Product Aeration c) Product vaporization d) All of these	d
638.	Gravity filling is ----- vacuum filling. a) Slower than b) faster than c) same as d) none of these	a
639.	----- is used for foaming products. a) Gravity filling b) vacuum filling c) Pressure filling d) all of these	a
640.	With bulk and dribble systems, the average give away is about -----in a 350g package. a) 5g b) 10g c) 20g d) 30g	c
641.	-----formed when the inside surface of the film is sealed against the opposite surface of the film. a) Lap seal b) Fin Seal c) Melted beeswax d) non of these	a
642.	-----formed when the inside surface of the film is sealed against itself. a) Lap seal b) Fin Seal c) Melted beeswax d) non of these	b
643.	----- is used to cover the heated jaws to prevent films forms ticking to the heated jaws. a) Stainless Steel b) Chrome c) Teflon d) Nylon	c
644.	----- Separates between the interfaces of the two webs being heat sealed, resulting a relatively poor seal indicator with no transfer to the opposite web. a) Adhesive peel b) cohesive peel c) delamination peel d) none	a
645.	In -----, the sealant splits when peeled with some of the sealant transferring to the opposing web while some remains with the original sealant web. a) Adhesive peel b) cohesive peel c) delamination peel d) none	b
646.	----- filling is used for most low or moderate cost products. a) Constant volume b) constant level c) constant weight d) none of these	b
647.	----- is used particularly for nylon 6,6 and PVC as they are difficult to heat by direct mean. a) Band sealer b) impulse sealer c) induction sealer d) dielectric sealer	d
648.	Induction sealing is an on contact method of heat sealing made by exposing a metal coated with a thermoplastic sealant to a High Frequency electromagnetic field generated by passing an alternating current of 20-30kHz through a coil. a) Band sealer b) impulse sealer c) induction sealer d) dielectric sealer	c
649.	----- is known as cold sealing. a) Band sealer b) impulse sealer c) induction sealer d) Ultrasonic sealer	d
650.	Angle of repose ----- a) $\tan^{-1} h/2b$ b) $\tan^{-1} 2h/b$ c) $\tan^{-1} h/b$ d) None of these	b
651.	Critical moisture content means----- a) Constant removal rate c) equilibrium moisture content b) Point at which constant rat ends and falling rate starts d) all of these	b
652.	The temperature in the auto-clave is ----- a) 111°C b) 121°C c) 141°C d) 151°C	b
653.	In refrigeration unit, gas enters in the condenser at ----- a) Low Temperature and low pressure c) High temperature and high pressure b) Low Temperature and high pressure d) High Temperature and low pressure	c
654.	----- storage is effective in ripening of fruits	a

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	a) CA storage b) MA storage c) refrigerator d) All of these	
655.	Corn grains contain averagely ----- percent of protein. (gluten) a) 6 b) 8 c) 10 d) 12	b
656.	Steeping of corn is done to----- the grain a) Soften b) stop germination c) stop fermentation d) all	d
657.	Sun gives ----- energy every day. a) 100 W/m ² b) 1000 W/m ² c) 500 W/m ² d) 5000 W/m ²	b
658.	Thermosiphon is the principle used in ----- a) Solar tunnel dryer b) solar concentrator c) solar water heater d) none	c
659.	Pyranometer is used to measure----- a) Solar irradiance b) speed of air c) density of product d) temperature	a
660.	Anemometer is used to measure ----- a) Solar irradiance b) speed of air c) density of product d) temperature	b
661.	In biogas plants, decomposition occurs in ----- conditions. a) Aerobic b) Anaerobic c) moist d) All of these	b
662.	_____ is a verb reflecting, reflecting ever changing nature of the medium. a) Packaging b) Handling c) Converting d) Wrapping	A
663.	Raw materials are converted into the finished package components with the help of _____. a) Packaging machine b) Material converters c) Rollers d) Laminates	B
664.	_____ are responsible for converting the raw materials into a recognizable single material. a) Primary converters b) Secondary convertors c) Tertiary converters d) All of these	A
665.	_____ are responsible for converting the material from primary converters into the finished packages. a) Primary converters b) Tertiary converters c) A & b d) Secondary converters	D
666.	Product quality and _____ determines the physical and final success of the product. a) container b) packages utility c) package d) processing	B
667.	The main roles of packaging are food protection and food safety and _____. a) Reliability b) Attraction c) Sale ability d) Consumer satisfaction	C
668.	----- is a greater consideration for a consumer that wants portability. a) Cost b) Heavy weight c) Light weighting d) Strength	c
669.	Packaging functions range from those that are _____ to those _____ oriented. a) Graphic , designing b) Technical , marketing c) Desighning, laminates d) None of these	B
670.	The consumer packaging is directed towards _____ and _____. a) Whole sale and retail b) Retail and consumer c) a & b d) Retail and household	D
671.	Paperboard boxes for cereals is _____ type of packaging. a) Semi flexible b) Rigid	A

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	<p>c) flexible d) None of these</p>	
672.	<p>Package must maintain its integrity under all conditions of a) Storage b) Distribution c) End user d) All of these</p>	C
673.	<p>Length to width proportions of ____ and ____ are the most pleasing. a) 2:3 & 3:5 b) 3:2 & 2:3 c) 2:5 & 3:5 d) 2:3 & 2:4</p>	A
674.	<p>Texture can be created using _____ or _____ substrates. a) Graphic designing and printing b) Rough pattern and printing c) a & b d) Graphic pattern and texture</p>	D
675.	<p>For export purpose usually make packages _____ times stronger. a) 1.5 to 1 b) 1.5 to 2 c) 1.5 to 2.5 d) 1 to 1.5</p>	B
676.	<p>For vending purposes _____ packages more practical. a) flexible b) Semi-flexible c) A&b d) Rigid</p>	d
677.	<p>_____ involves various transport modes, handling techniques and storage conditions. a) Packaging b) Protection c) Contain functions d) Transport function</p>	D
678.	<p>_____ is a big factor at present in deciding the package to be used for the product. a) Retail b) Market c) Consumer d) Style</p>	A
679.	<p>_____ is the means of communicating with purchasing, manufacturing, quality control and all other departments. a) Labelling b) Information panel c) Specification d) All of these</p>	C
680.	<p>Ideal packaging cost should be _____ of product cost. a) 10% b) <10% c) >10% d) None of these</p>	B
681.	<p>An adequate _____ is important in developing a package. a) Testing program b) Material c) Material converter d) Identification process</p>	A
682.	<p>How many types of vacuum clousers are used in food processing? a) Two types b) Three types c) Four types d) Five types</p>	B
683.	<p>The guiding principles for designing environmentally responsible packaging are embodied in the _____ hierarchy a) Three Rs</p>	a

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	<ul style="list-style-type: none"> b) Four Rs c) Five Rs d) Two Rs 	
684.	<p>Packaging provides protection from _____ influences?</p> <ul style="list-style-type: none"> a) Chemical b) biological c) physical d) all of these 	D
685.	<p>Closure devices may contain materials that allow minimal levels of _____.</p> <ul style="list-style-type: none"> a) Permeability b) strength c) impermeability d) none of these 	A
686.	<p>_____ Material is more permeable?</p> <ul style="list-style-type: none"> a) Plastic b) glass c) metal d) all of these 	A
687.	<p>Biological protection provides a barrier to _____</p> <ul style="list-style-type: none"> a) Microorganism b) insects c) rodents d) all of these 	A
688.	<p>Paper and paperboard are sheet materials made from an interlaced network of cellulose fibers derived from wood by using _____</p> <ul style="list-style-type: none"> a) Sulphate b) sulphite c) sulphate and sulphite d) none of these 	C
689.	<p>Paper is almost always treated, coated, laminated, or impregnated with materials such as _____ or lacquers to improve functional and protective properties</p> <ul style="list-style-type: none"> a) Waxes b) resins c) a & b d) none of these 	C
690.	<p>Kraft paper is prepared or produces by _____ process</p> <ul style="list-style-type: none"> a) Sulphate treatment b) sulphite treatment c) a & b d) none of these 	A
691.	<p>Greaseproof paper is made through a process known as _____</p> <ul style="list-style-type: none"> a) Beating b) Beading c) Kneading d) Nine of these 	A
692.	<p>Parchment paper is made from _____ pulp.</p> <ul style="list-style-type: none"> a) acid-treated b) sulphate-treated c) sulphite-treated d) b & c 	A
693.	<p>Corrugated board is made with _____ Layers of Kraft paper with a central corrugating (or fluting) material.</p> <ul style="list-style-type: none"> a) Two b) three c) four d) single 	A
694.	<p>Laminated paper is used to package _____ products</p> <ul style="list-style-type: none"> a) Moisture b) dried c) a & b d) none of these 	B
695.	<p>Polyolefin is a collective term used for _____</p>	C

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	<ul style="list-style-type: none"> a) Polyethylene b) polypropylene c) a&b d) polyvinyliden chloride 	
696.	<p>How many types of plastics are used for packaging?</p> <ul style="list-style-type: none"> a) Thirty b) more than thirty c) less than thirty d) none of these 	B
697.	<p>The high melting OPU required, such as hot-filled and microwavable packaging.</p> <ul style="list-style-type: none"> a) 150 °C b) 160 °C c) 170 °C d) 140 °C 	B
698.	<p>The most commonly used polyester in food packaging is PETE</p> <ul style="list-style-type: none"> a) PCDT b) PEN c) PETE d) b & c 	c
699.	<p>Ethylene vinyl alcohol (EVOH) is an excellent barrier to _____</p> <ul style="list-style-type: none"> a) Moisture b) air c) c) oil & fat d) none of these 	C
700.	<p>Polyvinylidene chloride (PVdC) contains _____ the amount of chlorine as PVC.</p> <ul style="list-style-type: none"> a) Two times b) three times c) four times d) none of these 	B
701.	<p>Thermal processing of food packed into hand-soldered cylindrical metal cans started in the early of _____</p> <ul style="list-style-type: none"> a) 1970s b) 1960s c) 1980s d) 1950s 	C
702.	<p>Low carbon steel-are the most common form of steel, containing approx. _____ of carbon</p> <ul style="list-style-type: none"> a) 0.01 to 0.05 % b) 0.01 to 0.15 % c) 0.01 to 0.10% d) 0.05 to 0.15% 	D
703.	<p>Tinplate has an excellent barrier property to _____.</p> <ul style="list-style-type: none"> a) Gases b) water vapours c) lights d) all of these 	D
704.	<p>Package must maintain its integrity under all conditions of</p> <ul style="list-style-type: none"> a) Storage b) distribution c) end use d) none of these 	D
705.	<p>In Australia-milk is sold in _____ plastic bottle convenient for milk Shakes & coffee</p> <ul style="list-style-type: none"> a) 2 – 6L b) 2 – 4L c) 1 – 4L d) 2 – 5L 	b
706.	<p>In India milk is sold in PVC _____ pouches convenient for making tea.</p> <ul style="list-style-type: none"> a) 500 ml & 1 L b) 250 ml & 1Lc) c) 1 L & 1.5L d) 1L & 2L 	A
707.	<p>The final, critical aspect of glass and rigid plastic packaging is the _____.</p> <ul style="list-style-type: none"> a) Closure 	A

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	<p>b) Package c) None of these d) A & B</p>	
708.	<p>Closure Provide an effective _____ seal to prevent the passage of solids, liquids or gases into or out of the container.</p> <p>a) Pressure b) Hermetic c) Heat d) None of these</p>	B
709.	<p>Closure Provide easy opening and _____ of the container.</p> <p>a) Closing b) Resealing c) Handling d) Sealing</p>	B
710.	<p>Which of Following is a closure?</p> <p>a) Cork b) Tops c) Plastic d) a&b</p>	D
711.	<p>_____ Part will receive the closure.</p> <p>a) Initial b) Final c) Finishing d) None of these</p>	C
712.	<p>Closure _____ is a layer of material placed inside a closure.</p> <p>a) Piece b) Liner c) Plastic d) None of these</p>	B
713.	<p>Flowed-in liners are made of _____ .</p> <p>a) Wood b) Steel c) Plastic d) None of these.</p>	C
714.	<p>Closure must be _____ with easy opening and, where applicable, easy and secure reseal ability.</p> <p>a) User Friendly b) Solid c) Flexible d) None of these</p>	A
715.	<p>M-style thread-engaging surfaces are angled at _____ °.</p> <p>a) 10 b) 20 c) 30 d) 40</p>	A
716.	<p>L-style threads are angled at _____ °.</p> <p>a) 10 b) 20 c) 30 d) 40</p>	C
717.	<p>A plastic bottle's finish is often slightly _____.</p> <p>a) Round b) Square c) Oval d) None of these</p>	C
718.	<p>If the bottle's _____ dimension is too large, the closure skirt may be too high above the bottle bead or shoulder.</p> <p>a) G b) H c) I d) J</p>	B

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719.	If bottle's _____ dimension is too short the closure could wind down past the bottle thread. a) P b) Q c) R d) S	D
720.	Lug style metal closure are available in __ millimeter to 110 millimeter sizes. a) 25 b) 26 c) 27 d) 28	C
721.	When the seal is broken, the depressed ring portion pops ____with an audible sound. a) Upward b) Inward c) Leftward d) None of these	A
722.	The twist_____ crown is a variation. a) Off b) Right c) Left d) None of these	A
723.	Currently most liners are composed of soft _____material. a) Resilient b) Wooden c) Metal d) None of these	A
724.	PET/LDPE/foil/expanded LDPE/LDPE are _____. a) Good Gas barrier. b) Inert barrier. c) Fair gas barrier. d) Superior gas barrier.	D
725.	Good barrier properties can be had by applying a _____containing inner seal to the bottle finish. a) Aluminum b) Metal c) Steel d) Wood	A
726.	_____ is example of Tamper Evidence Closure Systems. a) Film wrappers b) Blister or strip packs c) Bubble packs d) All of these	D
727.	The guiding principles for designing environmentally responsible packaging developed in the early _____ are modified. a) 1990s b) 1980s c) 1970s d) 1960s	A
728.	The ISO states that material weighing > 250g/m ² (51 lb/1000 ft ²) known as paperboard. a) 250 g/m ² b) <250g/m ² c) >250g/m ² d) None of these	C
729.	The most important characteristic for papermaking is _____ a) evenness of fiber distribution b) Fiber length c) a & b d) none of these	B
730.	Cellulose consists of long, straight chains of _____ molecules. a) Glucose	A

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	<p>b) Fructose c) Galactose d) All of these</p>	
731.	<p>Lignin is a three dimensional phenolic polymer network or natural adhesive that holds the cellulose fibres together and makes them rigid a) Uni dimensional b) Two dimensional c) Three dimensional d) b & c</p>	C
732.	<p>Individual fibrils will increase as much as _____ in diameter when thoroughly wet. a) 40% b) 30% c) 20% d) 10%</p>	D
733.	<p>Individual fibrils will increase only about _____ in length when thoroughly wet. a) 6% b) 5% c) 4% d) 3%</p>	D
734.	<p>Generally, wood is composed of a) Cellulose 50%, Lignin 30%, Carbohydrates 20% b) Cellulose 20%, Lignin 30%, Carbohydrates 50% c) Cellulose 30%, Lignin 50%, Carbohydrates 20% d) Cellulose 40%, Lignin 30%, Carbohydrates 30%</p>	A
735.	<p>Paper at _____ will contain 4% moisture due to hysteresis effect. a) 20% RH b) 30% RH c) 40% RH d) 50% RH</p>	A
736.	<p>Paper at 80% RH, it will contain _____ moisture, due to hysteresis effect. a) 35% b) 25% c) 15% d) 05%</p>	C
737.	<p>Carbohydrate, lignin & other components- nonfibrous _____ for papermaking a) Suitable b) Unsuitable c) a & b d) none</p>	B
738.	<p>Good packaging and presentation will increases the _____. a) Consumer attention to buy b) Cost of product c) a & b d) none</p>	A
739.	<p>Correct packaging prevents any wastage (such as leakage or deterioration) which may occur during transportation and distribution a) Packaging b) Transportation c) Distribution d) Transportation and distribution</p>	D
740.	<p>In seive analysis the screen with the smallest opening is placed at the ----- and the largest at the ----- to carry out the analysis a) top – bottom b) bottom – top c) center – top d) center – bottom</p>	B
741.	<p>In size measurement of Food Materials, fine particles are measured in a) millimeters b) micrometers c) screen size d) surface area per unit mass</p>	C
742.	<p>If the apparent density of a food sample is 500 g/cm³ and solid density was found to be 850 g/cm³ then, apparent porosity of this sample will be a) 0.50 b) 0.732 c) 0.895 d) 0.588</p>	D
743.	<p>For pseudoplastic fluids the value of ‘n’ in the power law model is</p>	B

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	a) $n > 1$	b) $n < 1$	c) $n = 1$	d) $n = \frac{1}{2}$	
744.	The longest dimension of the maximum projected area of irregular solid foods is known as a) Major diameter b) Intermediate diameter c) Minor diameter d) longest diameter				A
745.	If the apparent density of a food sample is 850 g/cm^3 and bulk density was found to be 500 g/cm^3 then, bulk porosity of this sample will be a) 0.50 b) 0.732 c) 0.895 d) 0.588				D
746.	The shortest dimension of the minimum projected area of irregular solid foods is known as a) Major diameter b) Intermediate diameter c) Minor diameter d) longest diameter				C
747.	Which of the following determine both the size of particles and their state of distribution a) seive analysis b) Particle size distribution analyzers c) cumulative analyzer d) particle differential analyzer				B
748.	The shape of a food material is usually expressed in terms of its a) sphericity b) aspect ratio c) major dia d) both a & b				D
749.	For a spherical particle, sphericity is equal to a) unity b) aspect ratio c) 0.25 d) $\frac{1}{3}$				A
750.	The ratio of volume of solid to the volume of a sphere that has a diameter equal to the major diameter of the object so that it can circumscribe the solid sample is called a) sphericity b) aspect ratio c) spherical projection d) both a & c				A
751.	The ratio of surface area of a sphere having the same volume as the object to the actual surface area of the object is called a) sphericity b) aspect ratio c) spherical projection d) both a & c				A
752.	Particles that are not equidimensional, that is, longer in one direction than in others, are often characterized by the a) major dimension b) second longest major dimension c) Intermediate diameter d) longest dimension				B
753.	The ratio of the diameter of the largest inscribed circle to the diameter of the smallest circumscribed circle is termed as a) sphericity b) aspect ratio c) spherical projection d) both a & c				A
754.	the length to width ratio of solid food sample is termed as a) sphericity b) aspect ratio c) spherical projection d) both a & c				B
755.	which of the following parameter is important for the design of conveyors for particulate foods a) radius of curvature b) roundness c) angle of repose d) All				D
756.	which of the following is important to determine how easily the object will roll a) radius of curvature b) roundness c) angle of repose d) All				A
757.	The more sharply rounded the surface of contact, the ----- will be the stresses developed a) smaller b) greater c) sharper d) both b & c				B
758.	The measure of the sharpness of the corners of the solid foods is termed as a) radius of curvature b) roundness c) angle of repose d) both a & b				B
759.	When granular solids are piled on a flat surface, the sides of the pile are at a definite reproducible angle with the horizontal, which is known as a) angle of internal friction b) angle of wall friction c) angle of repose d) horizontal angle				C
760.	When the grains are smooth and rounded, the angle of repose is a) low b) high c) equal to angle of internal friction d) both a & c				D
761.	For very fine and sticky materials the angle of repose is a) high b) low c) equal to angle of internal friction d) both a & c				D
762.	The range of particle size in foods depends on the a) cell structure b) degree of processing c) milling d) All				D
763.	Particles can be separated into fractions by using which one of the following methods a) air elutriation method b) settling method c) sedimentation method d) All				D
764.	A unit operation in which various sizes of solid particles are separated into two or more fractions by passing over screen(s)				A

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	a) Screening b) sorting c) grading d) screen separation	
765.	In size measurement of Food Materials, Coarse particles are measured in a) millimeters b) micrometers c) screen size d) surface area per unit mass	A
766.	In Hookean solid the energy necessary to deform is stored as a ----- that is fully recoverable a) heat b) potential energy c) flowing energy d) elastic energy of molecules	B
767.	The greater the volume fraction of air present in a food material the ----- will be porosity a) smaller b) greater c) sharper d) both b & c	B
768.	In size measurement of Food Materials, very fine particles are measured in a) millimeters b) micrometers c) nanometers d) both b&c	D
769.	If the apparent volume of a food sample is 850 cm ³ and solid volume was found to be 500 cm ³ then, apparent porosity of this sample will be a) 0.50 b) 0.732 c) 0.895 d) 0.588	D
770.	The minimum diameter of the maximum projected area or the maximum diameter of the minimum projected area of irregular solid foods is known as a) Major diameter b) Intermediate diameter c) Minor diameter d) longest diameter	B
771.	If the apparent volume of a food sample is 500 cm ³ and bulk volume was found to be 850 cm ³ then, bulk porosity of this sample will be a) 0.50 b) 0.732 c) 0.895 d) 0.588	D
772.	When moisture is removed from food during drying, there is a ----- imbalance between inside and outside of the food a) mass b) pressure c) moisture d) temperature	B
773.	Which one of the following corresponds to a failure in the microstructure of the specimen a) Rupture point b) bio-yield point c) minor failure point d) macro-failure	B
774.	Uniform shrinkage in all dimensions of the material is called_____ a) isotropic shrinkage b) anisotropic shrinkage c) regular shrinkage d) steady state shrinkage	A
775.	Non-uniform shrinkage in all dimensions of the material is called a) isotropic shrinkage b) anisotropic shrinkage c) irregular shrinkage d) transient shrinkage	B
776.	Unit of dynamic viscosity in the SI system is a) Pa·s b) poise c) m ² /s d) stokes	A
777.	Viscosity of most of the liquids ----- with increasing temperature a) decreases b) increases c) remains constant d) first decreases then increases	A
778.	The force applied parallel to the plane per unit area a) tangential stress b) shear stress c) normal stress d) both a & b	A
779.	The ratio of viscosity to density of fluid is termed as a) Momentum diffusivity b) kinematic viscosity c) dynamic viscosity d) both a & b	D
780.	The unit of Momentum diffusivity in SI system is a) m ² /s b) Pa·s c) poise d) stokes	A
781.	The slope of shear stress versus shear rate graph is constant and independent of shear rate in _____. a) Bingham fluids b) Non Bingham fluids c) Newtonian fluids d) Non-Newtonian fluids	C
782.	The ratio of elastic strain to total strain is defined as a) degree of elasticity b) total elastic strain ratio c) bulk elastic ratio d) both a & b	A
783.	Shear thinning or shear thickening fluids obey a) Newton's law of viscosity b) power law model c) Herschel-Bulkley model d) Casson Model	B
784.	For shear thickening fluids the value of 'n' in the power law model is: a) n>1 b) n < 1 c) n = 1 d) n= ½	A
785.	In size measurement of Food Materials, Ultrafine particles are measured in;	D

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	a) millimeters b) micrometers c) screen size d) surface area per unit mass	
786.	A deviatoric stress or strain is the one that results in change in; a) shape b) length c) volume d) orthogonal angle between length and width	A
787.	The ratio of shear stress to the corresponding shear rate is called ----- at that shear rate. a) viscosity b) apparent viscosity c) consistency d) both c & b	D
788.	The apparent viscosity and the Newtonian viscosity are identical for a) Bingham fluids b) non Bingham fluids c) Newtonian fluids d) Non-Newtonian fluids	C
789.	In ----- as shear rate increases friction between layers decreases a) Pseudoplastic fluids b) non bingham fluids c) Newtonian fluids d) bingham fluids	A
790.	The greater the ----- the more energy will be recovered in the stress–strain curve a) strain energy density b) resilience c) hysteresis d) compliance	B
791.	Pressure is an example of a) normal stress b) compressive stress c) shear stress d) tensile stress	A
792.	In ----- the stress acts tangential to the surface a) tangential stress b) shear stress c) normal stress d) both a & b	B
793.	Viscosity of most of the gases ----- with increasing temperature a) decreases b) increases c) remains constant d) first decreases the increases	B
794.	The unit change in size or shape of a material referred to its original size or shape when a force is applied is termed as a) Shear stress b) shear strain c) strain d) normal strain	C
795.	The change in the angle formed between two planes that are orthogonal prior to deformation as a result of the application of stress is called; a) shear strain b) angular strain c) anisotropic strain d) normal strain	A
796.	A dilatational stress or strain causes change in; a) shape b) length c) volume d) orthogonal angle between length and width	C
797.	For Newtonian fluids the value of ‘n’ in the power law model is; a) $n > 1$ b) $n < 1$ c) $n = 1$ d) $n = \frac{1}{2}$	C
798.	The ratio of plastic strain to total strain when a material is loaded to a certain load and then unloaded is called; a) degree of plasticity b) total plastic strain ratio c) bulk plastic ratio d) degree of elasticity	A
799.	Gases; oils; water; and most liquids that contain more than 90% water such as tea, coffee, beer, carbonated beverages, fruit juices, and milk show a) bingham behavior b) non bingham behavior c) Newtonian behavior b) viscoelastic	C
800.	Food Material showing elastic behavior is known as a a) Hookean solid b) Elastic solid c) Non-Hookean solid d) viscoelastic solids	A
801.	For a Newtonian fluid, all the energy input necessary to make it flow at a given rate is dissipated as a) heat b) potential energy c) flowing energy d) kinetic energy of molecules	A
802.	The ratio of void volume of air to the total volume of a food material may be termed as a) air-volume ratio b) porosity c) aeration density d) Sphericity	B
803.	The area under the loading curve in the stress–strain curve is termed as a) strain energy density b) resilience c) hysteresis d) compliance	A
804.	The area under the Un-loading curve in the stress–strain curve is termed as a) strain energy density b) resilience c) hysteresis d) compliance	B
805.	In ----- as shear rate increases, the internal friction and apparent viscosity increases a) Pseudoplastic fluids b) non bingham fluids c) Newtonian fluids d) Shear Thickening Fluids	D
806.	The difference between the strain energy density and the resilience is called a) strain energy density b) resilience c) hysteresis d) compliance	C
807.	The ratio of stress to strain in the stress–strain curve is termed as	A

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	a) modulus b) resilience c) hysteresis d) compliance	
808.	The ratio of strain to stress in the stress–strain curve is termed as; a) modulus b) resilience c) hysteresis d) compliance	D
809.	The ratio of normal stress (σ) to normal tensile or compressive strain (ϵ) is termed as; a) Young’s modulus b) Modulus of elasticity c) shear modulus d) both a & b	D
810.	The ratio of sheat stress to the shear strain is termed as; a) Shear modulus b) modulus of rigidity c) bulk modulus d) both a & b	D
811.	If the force is applied from all directions which results in a volume change, modulus is called; a) bulk modulus b) Shear modulus c) modulus of rigidity d) Young’s modulus	A
812.	The ratio of the strain in the direction perpendicular to the applied force to the strain in the direction of the applied force is termed as; a) bulk modulus b) Shear modulus c) modulus of rigidity d) Poisson’s ratio	D
813.	The point at which an increase in deformation is observed with a decrease or no change of Force is called a) Bioyield point b) rupture point c) deforming point d) resilience	A
814.	In some agricultural products, the presence of the bio-yield point is an indication of a) Healthy cell b) cell maturity c) initial cell rupture d) cell immaturity	C
815.	Which one of the following corresponds to a failure in the macrostructure of the specimen; a) Rupture point b) bio-yield point c) minor failure point d) macro-failure	A
816.	The ratio of the apparent volume at given moisture content to the initial apparent volume of materials before processing is termed as; a) Volume loss b) porosity c) shrinkage d) expansion	C
817.	When a viscous fluid is agitated, the circular motion causes a; a) vortex effect b) Weissenberg effect c) Depression effect d) Elevation effect	A
818.	If a viscoelastic fluid is stirred by a rotating rod it tends to climb the rod, which is known as; a) vortex effect b) Weissenberg effect c) Depression effect d) elevation effect	B
819.	Recoil phenomenon is observed in which of the following Food material a) viscoelastic b) viscoplastic c) bingham d) Non-bingham	A
820.	- Which of the following method is used to to study viscoelastic behavior of food materials; a) stress relaxation test b) creep test c) dynamic test d) All	D
821.	If food materials are deformed to a fixed strain and the strain is held constant, the stress required to maintain this strain; a) decreases with time b) increases with time c) remains constant with time d) first decreases then increases as time passes	A
822.	The attribute of a substance resulting from a combination of physical properties and perceived by the senses of touch, sight, and hearing is termed as a) Flavor b) Texture c) Structure d) Total Quality	B
823.	A solution is said to be ideal if the ----- inside a solution are uniform a) cohesive forces b) adhesive forces c) attractive forces d) repulsive forces	A
824.	The properties which depends on number of solute molecules or ions in the solvent are called; a) physical properties b) colligative properties c) rheological properties d) thermal properties	B
825.	which one of the following is not an example of colligative property a) Vapor pressure b) boiling point c) freezing point d) Normal stress	D
826.	The force at the first significant break in the first positive bite area in texture profile is termed as; a) Fracturability b) Cohesiveness c) Adhesiveness d) Gumminess	A
827.	The ratio of the second positive bite area to the first positive bite area in texture profile is termed as; a) Fracturability b) Cohesiveness c) Adhesiveness d) Gumminess	B

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828.	The negative force area for the first bite representing the work required to pull the plunger away from the food area in texture profile is termed as a) Fracturability b) Cohesiveness c) Adhesiveness d) Gumminess	C
829.	The product of hardness and cohesiveness in texture profile is termed as a) Fracturability b) Cohesiveness c) Adhesiveness d) Gumminess	D
830.	The height to which the food recovers during the time that elapses between the end of the first bite and start of the second bite in texture profile is termed as; a) Springiness b) Chewiness c) Hardness d) Adhesiveness	A
831.	The product of gumminess and springiness in texture profile is termed as a) cohesiveness b) Chewiness c) Hardness d) Adhesiveness	B
832.	The peak force during the first compression cycle texture profile is termed as a) Springiness b) Chewiness c) Hardness d) Adhesiveness	C
833.	The ratio of the vapor pressure of water in the system to the vapor pressure of pure water at the same temperature is termed as a) water activity b) vapor pressure depression c) moisture fraction d) both a & c	A
834.	The ratio of amount of water vapor in the mixture divided by the maximum amount of water vapor that could be held by the air at that condition a) saturation b) relative humidity c) humidity ratio d) absolute humidity	B
835.	----- is a term used to describe how readily a material will take up moisture when subjected to a given shift (change) in relative humidity a) Hygroscopicity b) moisture absorptivity c) water activity d) moisture fraction	A
836.	The ability of a material to conduct heat is termed as a) Specific heat b) Thermal conductivity c) Thermal diffusivity d) Enthalpy	B
837.	_____ shows the amount of heat required to increase the temperature of unit mass of the substance by unit degree a) Specific heat b) Thermal conductivity c) Thermal diffusivity d) Enthalpy	A
838.	_____ measures the ability of a material to conduct thermal energy relative to its ability to store thermal energy. a) Specific heat b) Thermal conductivity c) Thermal diffusivity d) Enthalpy	C
839.	_____ is thermodynamic property that depends only on the state of the system and it is expressed in terms of internal energy, pressure, and volume. a) Specific heat b) Thermal conductivity c) Thermal diffusivity d) Enthalpy	D
840.	_____ is the amount of heat released or absorbed at a specific temperature when unit mass of material transformed from one state to another. a) Specific heat b) Thermal conductivity c) Thermal diffusivity d) latent heat	D
841.	The driving force for the heat transfer to occur is the a) temperature difference b) mass difference c) temperature gradient d) both a and c	D
842.	Which one of the following has maximum thermal conductivity a) silver b) Banana c) Water d) Diamond	D
843.	Thermal conductivity _____ with moisture content. a) increases b) decreases c) remains constant d) increase exponentially	A
844.	which one of the following is the least conductive component in foods a) fat b) water c) protein d) air	D
845.	which one of the following is the most conductive component in foods a) fat b) water c) protein d) air	B
846.	Dry porous solids are _____ heat conductors a) poor b) good c) medium d) excellent	A
847.	Thermal conductivity of ice is nearly _____ than that of water a) four times greater b) four times smaller c) two times greater d) two times smaller	A
848.	_____ partly accounts for the difference in freezing and thawing rates of food materials.	B

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	a) Specific heat b)Thermal conductivity c)Thermal diffusivity d) Enthalpy	
849.	which one of the following is not a predictive model of thermal conductivity a) Parallel model b) series model c) krischer model d) hurshel bulkley model	D
850.	The _____ results in maximum thermal conductivity value a) Parallel model b) series model c) krischer model d) hurshel bulkley model	A
851.	The _____ results in minimum thermal conductivity value a) Parallel model b) series model c) krischer model d) hurshel bulkley model	B
852.	which one of the following is not a steady method to measure thermal conductivity of foods a) Heat of vaporization b)Heat flux c)Differential scanning calorimeter d) Modified Fitch	D
853.	Food materials with large thermal diffusivity will respond _____ to changes in their thermal environment while materials of small thermal diffusivity will respond more _____ a) quickly-slowly b) slowly-quickly - c) slowly-slowly d) quickly-quickly	A
854.	In Projected area method “The maximum diameter of the minimum projected area” is termed as a) Major diameter b) Minor diameter c) Intermediate diameter d) Length	C
855.	which one of the following is not a method to measure specific heat of food materials a) Methods of mixture b) Guarded plate c) Comparison calorimeter d) Modified Fitch	D
856.	The minor, major and intermediate diameters of a particle of milk powder were found to be 1.2 nm, 7.5 nm and 3.5 nm respectively. The sphericity of particle will be _____ a) 0.10 b) 0.42 c) 0.12 d) 0.82	B
857.	Total specific pore volume of a food material was found to be 0.75 mm ³ and the specific volume of closed and blind pores were 0.25 mm ³ and 0.15 mm ³ respectively, specific volume of flow-through pores will be _____ a) 0.40 mm ³ b) 0.10 mm ³ c) 0.35 mm ³ d) 0.55 mm ³	C
858.	The ratio of solid density to the apparent density of a sample of food material was found to be 4, apparent porosity of the sample will be _____ a) 0.75 b) 0.25 c) 0.5 mm ³ d) 0.85	A
859.	The slope of the shear stress versus shear rate graph is constant and independent of shear rate in a) Bingham fluids b) Newtonian fluids c) Non- Newtonian fluids d) visco-elastic fluids	B
860.	Shear thinning or shear thickening fluids obey which one of the following a) Herschel- Bulkley model b) Ostwald-de Waele equation c) Parallel model d) Eucken Model	B
861.	Dilatant fluids are the non-newtonian fluids in which _____ a) Viscosity increased is accompanied with volume compression b) Volume remains independent of viscosity c) Viscosity increase is accompanied with volume expansion d) Viscosity decreased is accompanied with volume compression	C
862.	If a viscoelastic fluid is stirred by a rotating rod it tends to climb the rod, which is known as _____ a) Weissenberg effect b) Recoil phenomena c) Vortex formation d) both a & c	A
863.	Which one of the following is an indication of initial cell rupture agricultural food products a) Rupture point b) Bioyield point c) strain energy d) compliance	B
864.	Which one of the following is not an instrumental method to determine the texture of food products a) Compression b) Bending c) Puncture d) none of these	D
865.	The height to which the food recovers during the time that elapses between the end of the first bite and start of the second bite is called _____ a) Adhesiveness b) Springiness c) Gumminess d) Chewness	B
866.	Thermal conductivity of ice is almost _____ than that of water a) Four times greater b) four times smaller c) two times greater d) half	A
867.	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
868.	Science of the occurrence, distribution and movement of water below the surface of earth is called _____. a- Hydro-geology b- hydraulics c- groundwater hydrology d- none of these	c
869.	Total amount of water on earth is _____. a- 1.5*10 ⁹ km ³ b- 2.3*10 ⁸ km ³ c- 2.2*10 ⁸ km ³ d- None of these	a
870.	Which one is not synthetic material _____. a- PVC b- rubber c- wood d- asphalt	c
871.	Renewable energy as source (comes from resources which are continually replenished) of farm power includes _____. a-Bio gas b-Solar Energy c-Wind Energy d-All of the Above	d
872.	In pumps, cavitation will occur when pressure is _____. a- Lower than atmosphere b- Negative c- Lower than vapor pressure of the liquid d- All of above	c
873.	Which one of the following is the facultative bacterium _____.	b

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	a-Pencillinion b-Pseudomonas c-Yeasts d-Phormedium	
874.	Which one is not affecting the strength of concrete_____. a- Composition b- curing time c- water d- stress	D
875.	A device which is used to convert solar energy directly into electrical energy is called as_____ a- Solar heater b-Solar cell c-Solar furnace d-Solar power plant	D
876.	The dimensions of pressure in MLT system is_____ a- MLT-2 b- ML ² T ² c- ML-1T-2 d- ML-1T-3	C
877.	The residential and commercial portion makes up about percent of total MSW generated in a community _____. a- 50-70% b- 80-85% c- 40-50% d- none of these	A
878.	The expected annual working hours of the centrifugal pump, is _____ a-10,000 b-15,000 c-20,000 d- 12,000	A
879.	The range of chlorine in National Standard Water Quality is _____. a-<250mg-litre b->250mg/litre c-=250mg/litre d- None of above	A
880.	Photographs which change or enhance the true color of an object are called_____. a-True color b-False color c-Panchromatic d-None	C
881.	Normal standard level for city traffic is _____. a- 60-70 dB b- 100-110dB c- 70-80 dB d- 50-60 dB	c
882.	Strength of any material is indicated by it _____. a-Stress b- strain c- compressiveness d- compactness	a
883.	Drying of wood is done to avoid_____. a- Shrinkage b- strength c- hardness d- change in mass	a
884.	In a material, the tensile stress is due to_____ a-Tension b- compactness c- sliding on another surface d- none	a
885.	When water table deep, a bore hole is drilled and pump is placed into that to void____. a- priming b-cavitation c- pump damage d- all of above	b
886.	Wastes that will decompose rapidly especially in warm weather are called_____. a-residential waste b- MSW c- putrescible waste d- none of these	c
887.	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
888.	Bearing is a support, in which_____. a-Journal rotates b. Shaft rotates c. Piston rotates d. Both a & b	d
889.	The dimension of power in FLT system is _____. a- FL ² T b- FLT ⁻¹ c- FL ⁻² T ⁻² d- FL ⁻¹ T ⁻²	b
890.	The first optical laser was developed in _____. a-1947 b-1960 (Ruby Laser) c-1990 d-None	b
891.	To get improved strength of wood it should be properly _____. a- Seasoned b- preservation c- drying d- all of above	d
892.	Ozone lies in a group_____. a- chemical agents b- radiation c- physical agents d- mechanical means	a
893.	Aquifer is also known as _____. a- water bearing formation b-aquiclude c- both a&b d- none of these	a
894.	Rods used for measuring vertical distances are _____. a- Staff rod b- ranging rod c- both (a &b) d- none of above	a
895.	Piezometric head is the sum of _____. a- pressure head, elevation head and velocity head b- elevation head and velocity head c- pressure head and velocity head d- pressure and elevation head	d
896.	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
897.	The power used in overcoming friction in the engine is called_____. a- FHP b-BHP c-IHP d-None of the Above	a
898.	The phase 1 in generation of the principle landfill gases is _____. a- transition phase b- initial adjustment phase c- acid phase d-none	b
899.	Mixture of wastes is called _____. a- residential b- commercial c- institutional d- commingled solid waste-	d
900.	Source of ultraviolet radiation used for disinfection is _____. a- mercury arc lamp b- Ag conical lamp c-upgrade radiation lamp d- both (a&b)	a
901.	A petrol engine consists of _____. a-Carburetor b-Ignition coil c-Spark plug d-All above	d
902.	Priming of pumps is done with _____. a- water b- air c- the liquid which is to be pumped or heavier than the pumped liquid d- all of above	c
903.	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
904.	The difference between total head and piezometric head line represents _____. a- the velocity head b- the pressure head c- the elevation of the bed of the channel d- the depth of flow	a
905.	G=_____ b- 6.673*10 ⁻¹⁰ c-6.673*10 ⁻¹¹ d-6.673*10 ⁻¹² a-6.673*10 ⁻⁹	c
906.	The forces which have same line of action are called_____. a- collinear forces b- concurrent forces c- coplanar forces d- parallel forces	a

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907.	_____ is the unit operation in which as collected waste material are mechanically reduced in size. a- size reduction b- volume reduction c- densification d- none of above	a
908.	Internal combustion engine is_____ a- Steam engine b- Petrol engine c- Diesel engine d- Both (b& c)	d
909.	It is process in which volume of material is reduced so that density become more is called_____ a-Floatation b-Incretion c- Densification d- Above all	c
910.	The ratio of viscous force to inertia force is called_____ a- Froude's number b- Reynolds's number c- Weber's Number d- none of above	d
911.	The most dangerous factor for storage of grains is_____ a- High temperature b- humidity c- rodents d- microorganisms	c
912.	Cardiovascular disease is due to_____ a- Water pollution b- Air pollution c- Soil pollution d- Noise pollution	d
913.	In constant pressure combustion (CPC), the fuel is ignited_____ a- In the cylinder b- Due high compression c- By spark d- Both (a& b)	b
914.	The process of heat transfer in which no medium is required_____ a- Conduction b- convection c- radiation d- all of above	c
915.	In engine the piston rod is connected to_____ a- Crank case b-Crank shaft c-Engine cylinder d-wheel	b
916.	Diesel engine is the_____ a- External combustion engine b- Internal combustion engine c-Semi internal combustion engine d- None of the above	b
917.	294- In National Standard for Drinking Water Quality Turbidity should be_____ a-< 9 NTU b- =5 NTU c-<5 NTU d- 5.5 NTU	c
918.	Pumps in ascending order of head are_____ a- axial, mixed, radial b- mixed, axial, radial c- radial, mixed, axial d- mixed, radial, axial	a
919.	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
920.	The engine, which follows diesel cycle, is the_____ a- Petrol engine b- Diesel engine c- Adiabatic engine d-All above	b
921.	161-HDPE is strong resistant to most chemicals and is considered_____ a- permeable to water b- impermeable to water c- none of these.	a
922.	Resistance to indentation is called_____ a- Hardness b- resilience c- strength d- ductility	a
923.	Aquifer having same hydraulic conductivity in all directions at a point is called_____ a- homogeneous b- isotropic c- anisotropic d- both (a-& (b-	b
924.	The mixture of lime stone and clay is called_____ a- Cement b- sand c- concrete d- mortar	a
925.	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
926.	Which one of the micro nutrient is found in Bio solids_____ a-Sulphur b- Calcium c- Molybdenum d- Both b & c	d
927.	Desiccation of clay during construction results in cracks that_____ a- reduce the efficiency b-increase the efficiency c- have no effect on liner efficiency d- none of these	a
928.	In diesel engine, the cylinder is fitted with_____ a- Movable piston b-Piston rod c-Crank shaft d- Crank case	a
929.	Cavitation in pumps causes_____ a- reduced discharge b- reduced pump efficiency c- damage to impeller d- all of above	d
930.	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
931.	217-SPOT Satellite was Launched by_____ a-France b-Spain c-Japan d-None	a
932.	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
933.	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
934.	Speed of the Earth at 45 N is_____ a-1180.7 km/h b-1600 km/h c-1200 km/h d-None	a
935.	Which type of the following is related to algae_____ a-Cholera b-Phormidium c-Vorticila d-Both (a& B)	d
936.	Upper limit of moisture availability is called_____ a- Gravitational water b- Saturation point c- Field capacity d- Maximum available water	c

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937.	The compression ratio in a diesel engine is as high as_____ a. 25:1 b. 20:1 c. 10:1 d. 5:1	b
938.	Desiccation of clay during construction results in cracks that_____ a- reduce the efficiency b-increase the efficiency c- have no effect on liner efficiency d- none of these	a
939.	Combustion is an example of _____. a-Waste Generation b- Waste Handling c- Waste Collection d-Chemical Transformation	d
940.	The distance between datum line and energy line is called _____. a- elevation head b- pressure head c- velocity head d- head	d
941.	Synthetic organic compounds and metals contained in Bio solids are _____. a-Selenium b- Nickel c- Mercury d- All	d
942.	In 4-stroke engine, there is _____. • Only one power stroke b-Three idle strokes •c-Three power stroke d- Both (a-& (b-	D
943.	Water present underground surface is greater than water on ground surface is about _____. a- 12 times b- 5 times c- 48 times d- 38 times	D
944.	Which of the following crops is used as standard for determining potential ET? a- fodder b- citrus c- wheat d- alfalfa	D
945.	Lower limit of moisture availability is called_____. a- Hygroscopic moisture b- Minimum available moisture c- Permanent wilting point d- None of above	c
946.	The range of zinc in drinking water according to WHO is _____. a- 2mg/litre b- 4mg/litre c- 5mg/litre d- 3mg/litre	d
947.	Vibration damper _____. a. controls the torsional vibrations b. drives the pulley c. dampens the engine speed d. reduces the speed of the flywheel	a
948.	Work is intentionally of good quality if wood is _____. a- Well seasoned b- knots c- shake d- decayed	a
949.	In exhaust stroke, the piston is _____. Pushed upward b- Pushed downward c- Idle in position d-None of the above	a
950.	165-Which one method is used for lanfilling when the terrain is unsuitable for the excavation of cells_____. a- Area method b- canyon method c-trench method d-none of these	c
951.	Available moisture is equal to_____ a- Maximum available water - Minimum available moisture b- Field capacity – permanent wilting point c- Field capacity – hygroscopic moisture d- Saturation point - permanent wilting point	b
952.	The process in which heat is transferred by movement of molecules_____. a- Conduction b- convection c- radiation d- all of above	b
953.	The maximum pressure of air at the end of compression in diesel engines is about _____. a. 10 Kg/cm ² b. 100 Kg/cm ² c. 300 Kg/cm ² d. 30 Kg/cm ²	d
954.	A triangle is said to be well conditioned when its angles should lie between_____. a- 30°& 120° b- 20°& 150° c- 15°&135° d- 10°&100°	a
955.	245-Chlorine residual (free or combine- measured by using method_____. a- integrated method b- atmospheric method c-differentiating method d-none	c
956.	function of the crank shaft is _____. a-Turn the wheel b. Power the piston c. Rotate piston d. Stop the engine	B
957.	Vegetable waste is a type of _____. a- Biodegradable waste b- Integrated waste c- Non biodegradable waste d- None of above	A
958.	A four-stroke engine is operated at_____. a - Any speed b - Low speed c - High speed d - Medium speed	A
959.	Municipal solid wastes as delivered in compaction vehicles have been fond typical value is _____. a- 800 lb/yd ³ b-500 lb/yd ³ c-200 lb/yd ³ d-300lb/yd ³	B
960.	Engine torque is highest at _____. a. Low speed b. Intermediate speed c. High speed d. all of the above	B
961.	Land is said to waterlogged when_____. a- gravity drainage is ceased b- PWP is reached c- salinity of soil increases d- all of above	C
962.	_____is provided when landfill site is filled to its full capacity. a-Cell b- Daily Cover c- Lift d- Final Cover	D
963.	In carburetor type petrol engine, the fuel is ignited by_____. Electric spark b- High compression c- Petrol flame d- All above	A
964.	If the particle is slowing down the particle is said to _____. a-accelerating b-moving c-projectile motion d-decelerating	d
965.	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
966.	Width of furrow cut by animal drawn medium m.b. plough is _____. a-150 to 200 mm b-100 to 150 mm c-10 to 50 mm d-200 to 250 mm	A

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	c- surface tension d- viscosity	
999.	Rubber is a type of _____. a- Biodegradable waste b- Integrated waste c- Non biodegradable waste d- All of above	c
1000.	The crop among the following, which is expected to have the maximum duty_____. a- Wheat b- Rice c- Sugarcane d- Cotton	a