1. The volume rate of air delivered by the compressor is called

(A) Swept volume
(B) Specific volume
(C) Compressor capacity
(D) Compressor volume
(E) Answer not known

2. The volume of air sucked by the compressor during its suction stroke is called

(A) Free air delivery
(B) Compressor capacity
(C) Swept volume
(D) Specific volume
(E) Answer not known

3. A heat exchanger used to recover some of the heat from the flue gas for increasing the temperature of makeup water to the boiler is called as

(A) Thermizer
(B) Scrubber
(C) Economizer
(D) Trap
(E) Answer not known

4. Match the type of boilers with its application

(a)	Single tube steam boiler	1.	Marine boiler
(b)	Horizontal steam boiler	2.	Simple vertical boiler
(c)	Stationary steam boiler	3.	Locomotive boiler
(d)	Mobile steam boiler	4.	Industrial boilers

	(a)	(b)	(c)	(d)
(A)	2	1	4	3
(B)	2	4	3	1
(C)	3	1	4	2
(D)	3	2	4	1

(E) Answer not known

5. An example for fire tube boiler is _____.

(A) Babcock and Wilcox boiler
(B) Lancashire boiler
(C) La-Mont boiler
(D) Loeffler boiler
(E) Answer not known

6. If heat supplied by oil is 44900 kJ and heat utilized in raising steam is 29,960 kJ the boiler efficiency (%) is _____.

(A) 66.73 (B) 6.67
(C) 667.3 (D) 6673
(E) Answer not known

7. A chimney is 30 m high and the temperature of atmosphere is 12°C. Calculate the draught produced in mm of water under the conditions of maximum discharge

(A) 1.86
(B) 18.6
(C) 186.01
(D) 2.5
(E) Answer not known

8. The vapour refrigerant is compressed in two or more cylinders in a series with intercooling arrangements known as _____ compression.

(A) single-stage
(B) multi-stage
(C) compound
(D) both (B) and (C)
(E) Answer not known

9. Which of the following are true about tonne of refrigeration?

(i) One tonne of refrigeration is equal to 210 kJ/min
(ii) One tonne of refrigeration is equal to 3.5 kJ/s
(iii) One tonne of refrigeration is equal to 350 kJ/min
(iv) One tonne of refrigeration is equal to 210 kW

(A) (i) only
(B) (iii) only
(C) (i) and (ii) only
(D) (i) and (iv) only
(E) Answer not known

10. Which among the following are wrong statements for derivable refrigerant properties?

(i) High latent heat of vaporisation

(ii) High boiling point

(iii) High specific heat of liquid

(A) (i) only
(B) (ii) and (iii) only
(C) (i) and (iii) only
(D) (i) and (ii) only
(E) Answer not known

11. Refrigeration effect occur in

(A) Compressor
(B) Condenser
(C) Evaporator
(D) Expansion valve
(E) Answer not known

12. If the work input is 80 kJ/kg and refrigeration effect produced is 160 kJ/kg of refrigeration ; then the C.O.P. of refrigeration system is

(A) 1
(B) 2
(C) 3
(D) 0.5
(E) Answer not known

13. Unit of refrigeration is

(A) Kilogram refrigeration
(B) Tonne of refrigeration
(C) K cal/kg
(D) m^3/kg
(E) Answer not known

14. In dairy industry, when ultra violet irradiation is used, it shall be in the range of _____ to produce antibacterial activity.

(A) 1200 – 1400 Å
(B) 1800 – 2200 Å
(C) 2400 – 2800 Å
(D) 2800 – 3200 Å
(E) Answer not known

15. The temperature of frozen foods to be maintained at _____ for frozen foods during transportation.

(A) – 4°C
(B) – 10°C
(C) – 18°C
(D) – 30°C
(E) Answer not known

16. In which type of freezing technique used the liquid nitrogen and liquid carbon dioxide as refrigerants?

(A) Freeze drying
(B) Fluidized bed freezing
(C) Cryogenic freezing
(D) Plate freezing
(E) Answer not known

17. The major reason for inactivation of microorganism present in the food exposed to high pressure is

(A) Electroporation
(B) Damage to cell membrane
(C) Oxidation of lipid
(D) Inactivation of enzymes
(E) Answer not known

18. In irradiation, foods are exposed to _____.

(A) Conduction current
(B) Convection current
(C) Ionizing radiation
(D) Non-Ionizing radiation
(E) Answer not known

19. The microbiocidal effect of UV rays lies in the range of

(A) 200-315 nm
(B) 600-650 nm
(C) 100-190 nm
(D) 560-620 nm
(E) Answer not known

20. The quality of heat processed foods are majorly influence by

(A) Temperature
(B) Heat processing equipment
(C) Duration of the thermal process
(D) Temperature and duration of the thermal process
(E) Answer not known

21. Successful cleaning process in dairy industry consists

(a) Preliminary rinse
(b) Cleaning with detergent and sanitization
(c) Rinses to remove chemicals and residue

(A) (a) alone correct
(B) (b) alone correct
(C) (c) alone correct
(D) All (a), (b), (c) are correct
(E) Answer not known

22. Which one of the following agent will not be a sequestering agent in Dairy Industry?

(A) Tetra sodium biphosphate
(B) Penta sodium triphosphate
(C) Potassium permanganate
(D) Sodium tartarate
(E) Answer not known

23. Detergent solution containing _____% of hydrochloric acid may damage the stainless steel material.

(A) 1%
(B) 2%
(C) 1.5%
(D) 2.5%
(E) Answer not known

24. The hardness of water used for CIP system must be below _____ ppm for effective cleaning.

(A) 80-90 ppm
(B) 70-80 ppm
(C) 60-70 ppm
(D) 50-60 ppm
(E) Answer not known

25. Recently, use of _____ valves guarantee mixing of various products flowing through CIP pipe systems.

(A) Cross flow
(B) Mix proof
(C) Flow diversion
(D) Counter flow
(E) Answer not known

26. Which among the following are organic chlorine sanitizers in dairy industry?

(A) Calcium hypochlorite
(B) Sodium hypochlorite
(C) Gaseous chlorine
(D) Chloramine T
(E) Answer not known

27. Accepted residual chlorine level in water after chlorine treatment in a processing Dairy plant is

(A) 0.1 ppm to 0.2 ppm
(B) 0.7 ppm to 0.9 ppm
(C) 0.3 ppm to 0.6 ppm
(D) 1 ppm to 10 ppm
(E) Answer not known

28. The fat and SNF content of recombined milk is

(A) 1.5% fat; 7.5% SNF
(B) 2.5% fat; 8.0% SNF
(C) 3.0% fat; 8.5% SNF
(D) 3.5% fat; 9.0% SNF
(E) Answer not known

29. The official test to examine the sterilized milk is

(A) Phosphatase test
(B) Turbidity test
(C) Fucoma test
(D) Dye reduction test
(E) Answer not known

30. Fluid milk prepared using butter oil, skim milk powder and water is known as

(A) Reconstituted milk
(B) Recombined milk
(C) Toned milk
(D) Humanized milk
(E) Answer not known

31. _____ percent of stabilizer added in chocolate milk preparation.

(A) 1 – 1.5%
(B) 5 – 7%
(C) 10 – 15%
(D) 0.2%
(E) Answer not known

32. Which one of the following enzymes is targeted to assess the efficiency of pasteurization?

(A) β galactosidase
(B) Alkaline phosphatase
(C) Lactoperoxidase
(D) Ribonuclease
(E) Answer not known

33. Clarification should be carried out _____.

(A) Before pasteurization
(B) After pasteurization
(C) Before Homogenization
(D) After Homogenization
(E) Answer not known

34. By using Pearson square how many parts by weight of 40% cream and 3% milk must be mixed to make milk testing 5% fat.

(A) 2 parts of 40% cream + 35 parts of 3% milk

(B) 5 parts of 40% cream + 32 parts of 3% milk

(C) 7 parts of 40% cream + 30 parts of 3% milk

(D) 25 parts of 40% cream + 12 parts of 3% milk

(E) Answer not known

35. Match the following in Association with grading of milk.

(a)	Grade-I	1.	Rancid, MBR time < 20 min
(b)	Grade-II	2.	Pleasant flavour, MBR time > $5\frac{1}{2}$ hours
(c)	Grade-III	3.	OFF-flavour, MBR time $2\frac{1}{2}$ hours to $5\frac{1}{2}$ hours
(d)	No grade	4.	OFF-flavour, Bitter MBR time 20 min to $2\frac{1}{2}$ hours

	(a)	(b)	(c)	(d)
(A)	4	3	2	1
(B)	3	4	2	1
(C)	1	3	4	2
(D)	2	3	4	1

(E) Answer not known

36. The pressure employed in low pressure homogenisation process is

(A) 5 – 30 bar
(B) 15 – 45 bar
(C) 100 – 350 bar
(D) 75 – 100 bar
(E) Answer not known

37. Complete phosphatase inactivation in milk is an indication of

(A) Inadequate pasteurization
(B) Adequate pasteurization
(C) Adequate Homogenisation
(D) Inadequate Homogenisation
(E) Answer not known

38. What is the ideal temperature and time for HTST (High Temperature Short Time) Pasteurisation of milk?

(A) 62.8°C for 30 minutes
(B) 162.8°C for 30 seconds
(C) 72°C for 15 seconds
(D) 72°C for 30 seconds
(E) Answer not known

39. An important purpose of homogenization usually is to

(A) Accelerate creaming
(B) Hydrolyse lactose
(C) Slow down creaming
(D) Coagulate the protein
(E) Answer not known

40. Standardization of milk can be done by

(a) Partially skimming the fat in the milk

(b) Admixture with fresh (or) reconstituted skim milk

(c) Admixture of Fresh water

(A) (a) alone correct

(B) (b) alone correct

(C) Both (a) and (b) are correct

(D) Both (b) and (c) are correct

(E) Answer not known

41. As per FSSAI, 2006, the raw cow milk from Tamil Nadu should contain minimum _____% fat and minimum _____ % SNF.

(A) 4.0, 8.5 (B) 3.5, 8.5

(C) 3.0, 9.0 (D) 3.5, 9.0

(E) Answer not known

42. Freshly drawn raw milk should be promptly cooled and held at _____°C till processing to preserve it against bacterial deterioration.

(A) 2 (B) 4

(C) 8 (D) 10

(E) Answer not known

43. Which of the following statements are true about Bulk milk cooler :

(i) used for cooling and storage of milk

(ii) operational costs are low

(iii) electricity is not required

(A) (i), (ii) and (iii)
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

44. Average temperature maintenance required for pasteurized milk in the cold storage of dairy plant is

(A) 5°C to 7°C
(B) 0°C to 1°C
(C) 2°C to 4°C
(D) 10°C
(E) Answer not known

45. Which of the following statements are true about cooling systems in milk production areas

(1) Spray cooling method is followed

(2) Immersion coolers are used inside the can

(3) Special tank with built-in cooling equipments are available

(A) (1) only
(B) (1) and (2) only
(C) (3) only
(D) (2) and (3) only
(E) Answer not known

46. At milk processing plants, the received milk is initially cooled to

(A) 10 – 15°C
(B) Less than 6°C
(C) Less than – 6°C
(D) – 20°C
(E) Answer not known

47. The Average specific gravity of Buffalo milk is ranging from

(A) 1.030 to 1.032
(B) 1.35 to 1.37
(C) 1.028 to 1.030
(D) 1.025 to 1.027
(E) Answer not known

48. The average freezing point of buffalo milk is generally

(A) – 0.512
(B) – 0.555°C
(C) – 0.560°C
(D) – 0.675
(E) Answer not known

49. The _____ test is used for rapid assessment of stability of milk to processing, particularly condensing and sterilization.

(A) Clot-on-Boiling
(B) Alizarin
(C) Alcohol
(D) MBRT
(E) Answer not known

50. Addition of 3 ml of milk with one drop of 1% iodine solution and the development of _____ colour indicates the presence of starch in milk.

(A) Red
(B) Green
(C) Yellow
(D) Blue
(E) Answer not known

51. The most important constituent of milk responsible for maintaining osmotic pressure is

(i) Lactose
(ii) Chloride
(iii) Casein
(iv) Oleic acid

(A) (i) and (ii) are correct
(B) (ii) and (iii) are correct
(C) (iii) and (iv) are correct
(D) (i) and (iv) are correct
(E) Answer not known

52. Which one of the following test is used to get an idea about acidity of milk without actually performing titration.

(A) Sedimentation test
(B) COB test
(C) Alcohol test
(D) Alcohol-Alizarin test
(E) Answer not known

53. _____ is contributes 'richness flavour' in milk and milk products.

(A) Lecithin
(B) Cephalin
(C) Sphingomyelin
(D) Cholesterol
(E) Answer not known

54. The heritability of which one of the following milk constituents is highly variable

(A) Fat percentage
(B) Protein percentage
(C) Total solids
(D) Water content
(E) Answer not known

55. High Fat percentage and deeper yellow colour of cow milk is due to

(A) More Dry fodder
(B) More Green fodder
(C) More mineral mixture
(D) Poor intake of water
(E) Answer not known

56. As per 2023-24, the total milk production in India had _____ million tonnes.

(A) 229.2
(B) 239.3
(C) 242.8
(D) 230.3
(E) Answer not known

57. To aid in clean milk production practices, quaternary ammonium compounds may be added to water in the range of _____ to wash udder.

(A) 50 – 100 ppm
(B) 1000 – 1200 ppm
(C) 700 – 900 ppm
(D) 200 – 400 ppm
(E) Answer not known

58. Two axis policy means _____ estimate to pay the cost of milk.

(A) Fat and SNF
(B) SNF and Minerals
(C) Fat and Lactose
(D) Fat and Microbial load
(E) Answer not known

59. GATT stands for

(A) General Agreement of Tariff and Trade
(B) General Agreement of Trade and Tariff
(C) Group Agreement of Tariff and Trade
(D) General Association of Tariff and Trade
(E) Answer not known

60. Operation Flood was started in the year _____.

(A) 1940
(B) 1950
(C) 1960
(D) 1970
(E) Answer not known

61. Fatty acids which represented by Reichert Meissel value and Polenske value are _____ and _____.

(A) Butyric, caproic acid
(B) Butyric, capric acid
(C) Caprylic, capric acid
(D) Capric, lauric acid
(E) Answer not known

62. The most distinctive role which the milk _____ play in dairy products concerns flavour.

(A) Fat globules and triglycerides
(B) Lipids
(C) Fat soluble vitamins
(D) Triglycerides and cholesterol
(E) Answer not known

63. Deeper Yellow colour of cow milk is due to _____.

(A) High intake of Green feed
(B) Low intake of Green feed
(C) High intake of Dry feed
(D) Low intake of concentrate
(E) Answer not known

64. The addition of acid to milk either directly or indirectly by bacterial action or by heat treatment causes pronounced shifts in the _____.

(A) Calcium caseinate phosphate system
(B) Salt equilibria
(C) Caseinate - phosphate complex
(D) Phospholipid - protein complex
(E) Answer not known

65. Addition calcium to the milk produce the following effect

(i) Increase in pH
(ii) Decrease in pH
(iii) Decrease in ionized calcium

(A) (i) only
(B) (ii) only
(C) (ii) and (iii) only
(D) (i) and (iii) only
(E) Answer not known

66. The _____ are found largely in skim milk.

(A) Proteases
(B) Lipases
(C) Peroxidases
(D) Catalases
(E) Answer not known

67. Fatty acid which act as both emulsifying agent and stabilizing agent is _____.

(A) Lecithin
(B) Cephalin
(C) Sphingomyelin
(D) Choline
(E) Answer not known

68. Removal of milk fat from whole milk is associated with reduction in

(A) Vitamin C
(B) Carotene
(C) Calcium
(D) Lactose
(E) Answer not known

69. The three following proteins constitute the bulk of the lactalbumin fraction but a number of other proteins appear to be present in small quantities.

(1) Gamma casein
(2) α-lactalbumin
(3) Blood serum albumin
(4) β lactoglobulin

(A) (1), (2), (3) is correct
(B) (2), (3), (4) is correct
(C) (1) and (2) is correct (4) is incorrect
(D) (1) and (3) is correct (2) is incorrect
(E) Answer not known

70. The _____ content of colostrum is lower than that of normal milk and increases rapidly to a normal value.

(A) Sodium
(B) Calcium
(C) Potassium
(D) Chloride
(E) Answer not known

71. With heat treatment, the stability of the casein micelles is dependent(s) on _____.

(A) pH
(B) Salt
(C) Serum protein
(D) pH, salt and serum protein
(E) Answer not known

72. Calcium binding protein present in milk is _____.

(A) Casein
(B) β – lactoglobulin
(C) α – lactoglobulin
(D) Immunoglobulin
(E) Answer not known

73. Iron binding protein in milk is _____.

(A) Transferrin
(B) Lactoferrin
(C) Milk fat globule membrane protein
(D) $\beta - 2$ microglobulin
(E) Answer not known

74. All that portion of milk excluding the casein micelles is referred as _____.

(A) Milk plasma
(B) Skim milk
(C) Milk serum
(D) Blood plasma
(E) Answer not known

75. Calcium - insensitive casein is

(A) α Casein
(B) β Casein
(C) K – Casein
(D) α_{s1} Casein
(E) Answer not known

76. In lactose structure, which group imparts more sweetness to the taste buds?

(A) Aldehyde group
(B) Keto group
(C) Carboxyl group
(D) Hydroxyl group
(E) Answer not known

77. Lactose is only about one-fifth as sweet as _____.

(A) Sucralose
(B) Sucrose
(C) Galactose
(D) 4-D-sorbitol
(E) Answer not known

78. A scheme that accounts for the stepwise degradation of Lactose to Lactic acid present in microorganisms capable of fermenting Lactose is

(A) Glycosis

(B) Embden-Meyerhof system

(C) Fermentation

(D) Heat decomposition

(E) Answer not known

79. Consumption of milk with high lactose content increases _____ absorption.

(A) Potassium

(B) Phosphorous

(C) Calcium

(D) Iron

(E) Answer not known

80. _____ exists in milk in the form of rather large colloidal particles containing the protein and also considerable quantities of calcium and phosphate and a little magnesium and citrate.

(A) α casein

(B) β casein

(C) casein

(D) k-casein

(E) Answer not known

81. Which of the following statements are true about clumping of fat?

(i) Large fat globules clump more readily than smaller ones

(ii) Clumping of fat increases with increase in temperature

(iii) Clumping increases by agitation

(A) (i) only
(B) (i) and (ii) only
(C) (i) and (iii) only
(D) (ii) and (iii) only
(E) Answer not known

82. With regard to the correct procedure for adding neutralizers to cream, the temperature of cream when adding the neutralizer should preferably be _____ °C.

(A) 10 – 15
(B) 16 – 20
(C) 21 – 27
(D) 29 – 32
(E) Answer not known

83. In centrifugal cream separator, screwing out the cream screw produces _____.

(A) Thicker cream
(B) Thinner cream
(C) Thicker skim milk
(D) Thinner skim milk
(E) Answer not known

84. Pasteurisation of cream/milk under reduced pressure by direct steam is called as

(A) Vacreation
(B) Uperisation
(C) Stassanization
(D) Electric pasteurisation
(E) Answer not known

85. Cream is inoculated with controlled culture of _____ to develop the desired taste in the finished product.

(1) Yeast

(2) Mold

(3) Lactic acid bacteria

(A) (1) and (2)
(B) (2) and (3)
(C) (2)
(D) (3)
(E) Answer not known

86. The typical flavour of ripened cream is mainly by the effect

(A) Diacetyl
(B) Dibutynl
(C) Acetic acid
(D) Acetone
(E) Answer not known

87. The defect caused in cream due to excessive homogenization pressure applied to low grade milk is

(A) Feathering in hot coffee
(B) Oxidized effect
(C) Fruity effect
(D) Tallowy effect
(E) Answer not known

88. A good sample of dry butter fat should have a iron content of _____ ppm.

(A) 0.10 ppm (not more than)
(B) 0.20 ppm (not more than)
(C) 0.25 ppm (not more than)
(D) 0.30 ppm (not more than)
(E) Answer not known

89. In, ghee making the end point is indicated by the

(i) Appearance of a second effervescence
(ii) Browning of curd particles
(iii) Emanant of ghee flavour
(iv) Appearance and crackling sound

(A) (i), (iii), (iv)
(B) (ii), (iii), (iv)
(C) (i), (ii), (iii)
(D) (i) and (iv)
(E) Answer not known

90. According to AGMARK standard the moisture content of ghee should be _____ percent.

(A) not more than 0.6
(B) not more than 0.3
(C) 0.4 to 0.5
(D) 1 to 2
(E) Answer not known

91. Baudouin test is used to test adulteration of ghee with _____.

(A) Coconut oil
(B) Vanaspathi
(C) Groundnut oil
(D) Cotton seed oil
(E) Answer not known

92. Which one of the fatty acid responsible for larger grains in ghee?

(A) Myristic
(B) Palmitic
(C) Oleic
(D) Linoleic
(E) Answer not known

93. High grade dry butter fat will retain its quality for at least _____ if properly packed and stored.

(A) 4 – 5 months
(B) 6 – 12 months
(C) 13 – 15 months
(D) 16 – 20 months
(E) Answer not known

94. In butter oil manufacturing process, the presence of over heated fine curd particles due to improper filtration in direct evaporation methods leads to development of _____.

(A) Coarse texture
(B) Fine crystals and milk fat
(C) Brownish colour
(D) Butter flavour
(E) Answer not known

95. The temperature of commercial cold storage of butter is _____.

(A) –5°C to –7°C
(B) –10°C to –15°C
(C) –23°C to –29°C
(D) –30°C to –35°C
(E) Answer not known

96. What is the correct order of steps involved in Butter processing from pasteurised milk?

(A) Separation of cream from milk – Pasteurisation and pre-processing of cream – Churning – Working

(B) Separation of cream from milk – Pasteurisation and pre-processing of Cream – Working – Churning

(C) Pasteurisation and pre-processing of cream – Separation of cream from milk – Churning – Working

(D) Pasteurisation and pre-processing of cream – Separation of Cream from milk – Working – Churning

(E) Answer not known

97. Fat crystals suspended in oil attract each other because of _____.

(A) Newtonian force

(B) Vander Waals force

(C) Stokes law

(D) Pascals law

(E) Answer not known

98. _____ body and texture defect of butter is due to incorrect neutralization of high acid cream with lime and 'oiling off' of fat during butter making.

(A) Mealy/Grainy

(B) Spongy

(C) Sticky

(D) Gritty

(E) Answer not known

99. Gritty defect in butter is due to excess of _____.

(A) Salt
(B) Water
(C) Fat
(D) Colour
(E) Answer not known

100. Maximum obtainable over run percentage in butter is _____.

(A) 20
(B) 25
(C) 30
(D) 40
(E) Answer not known

101. In Chhana powder manufacturing which one of the following is/are added

(A) Lactic acid sulphuric acid
(B) Citric acid (or) sulphuric acid
(C) Lactic acid (or) citric acid
(D) Lactic acid and hydrochloric acid
(E) Answer not known

102. To give powder instant properties it should be allowed to

(A) agglomerate
(B) free flow
(C) low WPN index
(D) settle
(E) Answer not known

103. Whey protein concentrate has the biological value of _____ which is more than eggs.

(A) 100
(B) 104
(C) 150
(D) 180
(E) Answer not known

104. Whey protein concentrate is used in certain foods to improve its functional properties as _____ in meats, salad dressings and soups

(A) viscosity
(B) gelation
(C) cohesive property
(D) emulsification capacity and stability
(E) Answer not known

105. Human milk protein is composed of _____ casein and _____ whey protein.

(A) 90% and 10%
(B) 80% and 20%
(C) 20% and 80%
(D) 30% and 70%
(E) Answer not known

106. Skim milk is dried using the technique _____ by making into droplets and by increasing the surface area.

(A) freeze drying
(B) spray drying
(C) tray drying
(D) solar drying
(E) Answer not known

107. The binding of water by protein in the dry state is a most important consideration in the manufacture and storage of _____

(A) Condensed milk products
(B) Concentrated milk products
(C) Dry milk products
(D) Evaporated milk products
(E) Answer not known

108. The colour of the buffalo skim milk powder is _____.

(A) Creamy white
(B) Light yellow
(C) Yellowish white
(D) Chalky white
(E) Answer not known

109. The true density of skim milk powder is_____ g/ml.

(A) 1.02-1.22
(B) 1.30-1.32
(C) 1.44-1.48
(D) 1.50-1.52
(E) Answer not known

110. The bacteria which influences the milk powder quality is

1. Bacillus cereus
2. Clostridium perfringens
3. Clostridium butyricum
4. Pseudomonas sp.

(A) 1 and 3
(B) 3 and 4
(C) 2 and 4
(D) 1 and 2
(E) Answer not known

111. The main purpose of condensing of milk is _____.

(A) To reduce volume
(B) To reduce fat
(C) To reduce micro organisms
(D) To reduce off-flavours
(E) Answer not known

112. The minimum sucrose percentage of full cream sweetened condensed milk as per BIS specification is _____.

(A) 30.0

(B) 35.0

(C) 40.0

(D) 45.0

(E) Answer not known

113. Main change in sweetened condensed milk during storage at high temperature is ————————.

(A) Fat separation

(B) Age thickening

(C) Gassy

(D) Sandiness

(E) Answer not known

114. The MBRT standard suggested for raw milk meant for sweetened condensed milk preparation is _____.

(A) < 2.5 hours

(B) < 3.0 hours

(C) < 3.5 hours

(D) > 3.5 hours

(E) Answer not known

115. Pilot sterilization test is related to manufacture of _____.

(A) Milk powder
(B) Ice cream
(C) Evaporated milk
(D) Sterilized milk
(E) Answer not known

116. Slow melting defect in ice cream is due to

(i) Excessive stabilizer

(ii) Inadequate homogenization

(iii) Low stabilizer

(A) (i) only
(B) (i) and (ii) only
(C) (i) and (iii) only
(D) (ii) and (iii) only
(E) Answer not known

117. The types of packaging material used for Bulk containers for ice cream include

(i) Fiber board container
(ii) Polyethylene container
(iii) Softy cone

(A) (i) only
(B) (i) and (ii) only
(C) (i) and (iii) only
(D) (ii) and (iii) only
(E) Answer not known

118. The following body defects are observed in ice cream except

(A) Crumbly
(B) Soggy
(C) Fluffy
(D) Weak
(E) Answer not known

119. A high quality ice cream should show little resistance towards melting when it is exposed to room temperature for atleast

(A) 5-10 minutes
(B) 10-15 minutes
(C) 15-20 minutes
(D) 20-25 minutes
(E) Answer not known

120. In softy processing, the following steps are involved except

(A) Figuring of ice cream mix
(B) Pasteurization
(C) Hardening
(D) Homogenization
(E) Answer not known

121. An average ice cream mix has a freezing point of ————————.

(A) 26.5° F
(B) 27.5° F
(C) 28.5° F
(D) 29.5° F
(E) Answer not known

122. The volume of ice cream obtained in excess of the volume of the mix is termed as

(A) Freezing
(B) Overrun
(C) Hardening
(D) Ageing
(E) Answer not known

123. The overrun obtained in Bulk ice cream preparation is

(A) 30-50%
(B) 70-80%
(C) 90-100%
(D) 10-20%
(E) Answer not known

124. The continuous freezer is considered as satisfactorily cleaned and sanitized if it does not show

(A) more than 1,000 organism/ml
(B) more than 3,000 organism/ml
(C) more than 5,000 organism/ml
(D) more than 7,000 organism/ml
(E) Answer not known

125. In an icecream mix, the proteins exist as

(A) Colloids
(B) Emulsion
(C) Solution
(D) Foam
(E) Answer not known

126. Whipping of air into ice cream mix without freezing will result in

(i) low overrun

(ii) Large sized air bubbles

(iii) Small ice crystals

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

127. One of the following method by which milk fat can be standardized

(A) Algebraic method
(B) Rahn's foam method
(C) King's modern method
(D) Fisher-Hooker method
(E) Answer not known

128. The following stabilizers are commonly used in ice cream except

(A) Sodium alginate
(B) Guargum
(C) Glycerol mono stearate
(D) Carageenan
(E) Answer not known

129. Which one of the following is known as indigenous frozen milk product?

(A) Mellorine
(B) Mousse
(C) Bisque
(D) Kulfi
(E) Answer not known

130. As per FSSAI standard, the minimum total solids content in icecream should be

(A) 16%
(B) 26%
(C) 36%
(D) 46%
(E) Answer not known

131. The coliform content in ice cream as per FSSAI standard is

(A) Not more than 30 per gram
(B) Not more than 60 per gram
(C) Not more than 90 per gram
(D) Not more than 120 per gram
(E) Answer not known

132. To prevent the formation of ice crystals in ice cream during storage the following constituent is essential in ice cream mix

(i) Stabilizer

(ii) Emulsifier

(iii) Sugar

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

133. The following milk constituent is responsible for hindering the whipping quality of ice cream mix

(A) milk sugar
(B) milk protein
(C) milk fat
(D) milk minerals
(E) Answer not known

134. Which of statements are true about emulsifiers for ice cream?

(i) Improves whipping quality of mix

(ii) Gives smooth body and texture

(iii) Increase over run

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (iii) and (ii) only
(E) Answer not known

135. What is the correct order of steps involved in ice cream manufacturing?

(A) Mix preparation → Homogenisation → Pasteurisation → Aging → Freezing → Hardening

(B) Mix preparation → Pasteurisation → Homogenisation → Aging → Freezing → Hardening

(C) Pasteurisation → Mix preparation → Homogenisation → Aging → Freezing → Hardening

(D) Pasteurisation → Mix preparation → Homogenisation → Freezing → Hardening → Aging

(E) Answer not known

136. Which among the following is not coming under the benefits of quality management system?

1. Consumer's requirements

2. Organization's requirements

3. Product quality

4. Product processing

(A) 1 and 2

(B) 2 and 3

(C) 3 and 4

(D) 4 and 1

(E) Answer not known

137. ISO 22000 provides international harmonization in the field of food safety standards, offering a tool to implement _____ throughout the food supply chain.

(A) GMP
(B) TQM
(C) HACCP
(D) QMS
(E) Answer not known

138. Total quality management can bring several benefits for _____ if implemented properly.

(A) Producers, Processors, Consumers
(B) Consumers, Company, Employee
(C) Processors, Retailers, Consumers
(D) Processors, Company, Distributors, Retailers
(E) Answer not known

139. _____ tolerance is determined on the basis of extent of toxicity of drugs/chemicals and is mostly applicable to carcinogenic drugs.

(A) Finite
(B) Negligible
(C) Zero
(D) Temporary
(E) Answer not known

140. System for food safety and random sampling of final products is

(A) Food and Agricultural Organization (FAO)

(B) International Food Safety Laws

(C) Hazard Analysis and Critical Control Point (HACCP)

(D) World Health Organisation (WHO)

(E) Answer not known

141. From a food safety perspective, risk of allergenic reactions can not be due to ————————.

(A) Wrong labelling

(B) Food contact materials

(C) Cross contamination

(D) Nutritional value of macro nutrients

(E) Answer not known

142. Which one of the following species of the Genus Brucella is of caprine origin?

(A) Brucella abortus

(B) Brucella melitensis

(C) Brucella suis

(D) Brucella anthropi

(E) Answer not known

143. The moulds primarily responsible for aflatoxin production are _____ and _____.

(A) Aspergillus ardalensis and aspergillus arachidicola

(B) Aspergillus amoenus and aspergillus ambiguus

(C) Aspergillus aureoluteus and Aspergillus australensis

(D) Aspergillus flavus and Aspergillus fumigatus

(E) Answer not known

144. Which one of the following statements is correct with respect to Brucella?

(A) They are anaerobic gram positive, non motile rod shaped organisms

(B) They are anaerobic gram negative, motile, rod shaped organisms

(C) They are aerobic, gram positive, motile and cocci shaped organisms

(D) They are aerobic, gram negative, non motile rod shaped organisms

(E) Answer not known

145. Selectively fermented ingredient or feed material that allows specific changes both in the composition and/or activity in the gastrointestinal microflora that confers benefit upon host and health is known as

(A) Pro biotic

(B) Pre biotic

(C) Post biotic

(D) Synbiotic

(E) Answer not known

146. _____ is an enzymatic colorimetric screening method for the rapid detection of Beta lactum antibiotics in milk

(A) MDR test
(B) Penzyme test
(C) Rosa test
(D) RIA test
(E) Answer not known

147. The Direct microscopic count standard for the raw milk used for the manufacture of sweetened condensed milk is ————————.

(A) $>10^5$/ml
(B) $>10^6$/ml
(C) $>10^7$/ml
(D) $>10^8$/ml
(E) Answer not known

148. A Peculiar type of odour and taste similar to that of ghee in sweetened condensed milk is caused by ————————.

(A) Pseudomonas fluorescens
(B) Geotrichum candidum
(C) Thermobacterium Mathiacella
(D) Aspergillus flavus
(E) Answer not known

149. The acceptable level of yeast and mould count of pasteurized butter as per FSSAI, shall be_____ g.

(A) 20 or less than that
(B) 50
(C) 100
(D) 150-200
(E) Answer not known

150. The cytoplasm of prokaryotic cell contains about _____% water and _____ % dissolved substances respectively.

(A) 20% and 80%
(B) 40% and 60%
(C) 60% and 40%
(D) 80% and 20%
(E) Answer not known

151. The alternate life cycle in which the phase DNA gets integrated into host chromosome is referred to as

(A) Polygenic cycle
(B) Lysogenic cycle
(C) Mesogenic cycle
(D) Hypogenic cycle
(E) Answer not known

152. Organisms grow at a temperature range of 5-7°C are called as _____.

(A) Mesophilic
(B) Thermophilic
(C) Psychrotropic
(D) Thermoduric
(E) Answer not known

153. Which one of the following components increase in mastitic milk?

(A) Total casein
(B) Fat
(C) Bovine serum albumin
(D) Lactose
(E) Answer not known

154. The somatic cells in the milk accounts for about _____ % of the volume of milk.

(A) 0.001
(B) 0.002
(C) 0.005
(D) 0.007
(E) Answer not known

155. Malty flavour defect in raw milk is due to the production of _____ compound by _____ organism respectively.

(A) Furfurol ; Streptococcus thermophilus
(B) 3 methyl butanol ; streptococcus lactis var maltigenes
(C) 2, 3 butylene glycol ; staphylococcus aureus
(D) Diacetyl ; streptococcus diacetylactis
(E) Answer not known

156. An applied engineering science that has been referred to as a combination of machine tool technology and computer science is called _____

(A) Programmable Logic Controller
(B) Supervisory Control and Data acquisition
(C) Actuators (Sensor based)
(D) Robotics
(E) Answer not known

157. Match the following :

(a)	Venturimeter	1.	Open channels
(b)	Orifice meter	2.	Velocity
(c)	Pitot tube	3.	$C_d \approx 0.6$
(d)	Weirs	4.	$C_d \approx 0.9$

	(a)	(b)	(c)	(d)
(A)	1	2	4	3
(B)	4	3	2	1
(C)	4	2	3	1
(D)	4	3	1	2

(E) Answer not known

158. Rotameter is a _____

(A) drag force flow meter
(B) variable area flow meter
(C) variable head flow meter
(D) rotating propeller type flow meter
(E) Answer not known

159. Temperature drops in multiple effect evaporator are

(A) Proportional to heat transfer coefficients
(B) Proportional to the evaporation area
(C) Inversely proportional to the heat transfer coefficients
(D) Independent of the heat transfer area
(E) Answer not known

160. Choose a right statement about PLC.

(i) A PLC is a digital electronic device.

(ii) PLC uses a programmable memory.

(iii) PLC stores instructions and implements functions

(iv) PLC is continuously running through its program and updating it as a result of the input signal.

(A) (i) only
(B) (i), (ii) and (iii) only
(C) (i) and (iv) only
(D) (i), (ii), (iii) and (iv)
(E) Answer not known

161. Antimicrobial agents are incorporated into a packaging system through

(i) simple blending with packaging material

(ii) coating on the packaging system

(iii) packed inside the packaging with food material

(A) (i) only
(B) (i) and (ii) only
(C) (ii) only
(D) (i) and (iii) only
(E) Answer not known

162. Which of the following statement are true about two price can?

(i) Eliminates the possibility of micro-leaks

(ii) Cost effective

(iii) Permits high-speed filling and closing operations

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

163. Saran is also known as ————————.

(A) Polythene
(B) Polyvinylidene chloride
(C) Polyethene
(D) High density Polyethene
(E) Answer not known

164. Which among the following is true regarding the extrusion coating of polyethylene in paper board over adhesive lamination?

(A) High temperature of extrusion technology creates good mechanical bonds
(B) Expensive
(C) Wax-coated paperboard replaced by polyethylene coated paperboard
(D) Both (A) and (C)
(E) Answer not known

165. The polymer used in packaging which has inherent antimicrobial actively is

(A) Polyethylene glycol
(B) Glycerol
(C) Polyhexane
(D) Nylons
(E) Answer not known

166. Assertion [A] : Storage of foods in warm and damp conditions should be avoided.

Reason [R] : Warm and humid conditions favour microbial growth.

(A) [A] is true ; but [R] is false

(B) Both [A] and [R] are true ; but [R] is not the correct explanation of [A]

(C) [A] is false ; but [R] is true

(D) Both [A] and [R] are true ; and [R] is the correct explanation of [A]

(E) Answer not known

167. Which one of the following is a disadvantage of using Glass as containers?

(A) Inert and do not react with food products

(B) Impervious to moisture, gases and odours

(C) Suitable for heat processing when hermetically sealed

(D) Lower resistance to fracturing and thermal shock

(E) Answer not known

168. In a multiple effect system with a given evaporation capacity, the total heat exchange area is

(A) Independent of the number of effects

(B) Inversely proportional to the number of effects

(C) Proportional to the number of effects

(D) Constant

(E) Answer not known

169. Milk evaporators mostly use

(A) Single feed system
(B) Forward feed system
(C) Backward feed system
(D) Mixed feed system
(E) Answer not known

170. Convert 80% moisture content in wet basis into dry basis

(A) 25%
(B) 250%
(C) 40%
(D) 400%
(E) Answer not known

171. The efficiency of drum drying method could be enhanced by applying _____

(A) force
(B) more speed
(C) pressure
(D) vacuum
(E) Answer not known

172. Sensible heat is calculated by multiplying _____

1. Mass and specific heat
2. Mass, specific heat and change in temperature
3. Mass and latent heat
4. Specific heat and latent heat

(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Both 3 and 4
(E) Answer not known

173. The loss liquid due to air-vapour mixture formation and significant during emptying and filling of tank is termed as _____

(A) Breathing loss
(B) Filling loss
(C) Boiling loss
(D) Venting loss
(E) Answer not known

174. Which type of heat exchangers are used widely for crystallization?

(A) Steam infusion heat exchanger
(B) Scraped surface heat exchanger
(C) Tubular heat exchanger
(D) Plate heat exchanger
(E) Answer not known

175. Capacity of an evaporator is defined as

(A) The number of kg vaporized per kg of steam fed to the unit
(B) The number of kg of water vapour generated per hour
(C) The number of kg of feed input per hour
(D) The number of kg of water vaporized per hour
(E) Answer not known

176. The traditional starters for pizza cheese are

(A) Psychrophiles
(B) Thermophiles
(C) Mesophiles
(D) Psychrotrophs
(E) Answer not known

177. Which one of the following membrane processing methods can be adopted to fractionate the whey proteins from casein before making cheese?

(A) Microfiltration
(B) Ultrafiltration
(C) Nanofiltration
(D) Reverse osmosis
(E) Answer not known

178. The ideal ratio of chloride to lactose in milk intended for cheese making shall be

(A) < 2
(B) 2-3
(C) 5
(D) > 5
(E) Answer not known

179. Increase in the somatic cell count of cheese milk beyond 6×10^5 cells/ml will result in _____.

(A) decrease in rennet coagulation time and increase in curd firming rate
(B) increase in rennet coagulation time and reduction in curd firming rate
(C) increase in rennet coagulation time and increase in curd firming rate
(D) decrease in rennet coagulation time and decrease in curd firming rate
(E) Answer not known

180. The Emulsifier not used in processed cheese preparation is _____

(A) Di-sodium phosphate
(B) Tri-sodium citrate
(C) Rochelle salt
(D) Kosher salt
(E) Answer not known

181. Excessive heat treatment of milk for cheese making causes the precipitation of a part of the _____ in milk.

(A) Fat
(B) Casein
(C) Calcium salts
(D) Phosphorous salts
(E) Answer not known

182. The recommended storage temperature of processed cheese is _____.

(A) Frozen temperature
(B) 0 to 1°C
(C) 5-10°C
(D) 37°C
(E) Answer not known

183. Which among these helps in curdling milk for cheese production?

(A) Mucor Miehei
(B) Saccharomyces fragilis
(C) Aspergillus flavus
(D) Aspergillus parasiticus
(E) Answer not known

184. The following process occurs during ripening of cheese :

1. Proteolysis
2. Lipolysis
3. Glycolysis

(A) 1 and 2
(B) 1 and 3
(C) 2 and 3
(D) 1, 2 and 3
(E) Answer not known

185. _____ is a soft unripened cheese made from skim milk.

(A) Cheddar cheese
(B) Mozzarella cheese
(C) Cottage cheese
(D) Swiss cheese
(E) Answer not known

186. Moisture content of processed cheese is approximately _____ percent.

(A) 47
(B) 50
(C) 42
(D) 52
(E) Answer not known

187. As per food safety and standards (Food Product Standards and Food Additives) Regulation, 2011, the Mozzarella cheese must contain

(A) not more than 52% moisture and not less than 45% fat on dry basis

(B) not more than 80% moisture and not less than 12% fat

(C) not more than 54% moisture and not less than 35% fat on dry basis

(D) not more than 60% moisture and not less than 35% fat on dry basis

(E) Answer not known

188. Which of the following is an alternative to pasteurization of milk in cheese making for reducing the number of micro organisms?

(A) Treatment with H_2O_2 and Bactofugation

(B) Activation of lactoperoxidase system and micro filtration

(C) Both (A) and (B)

(D) Either (A) only or (B) only

(E) Answer not known

189. Which among the following bacteria are commonly used in the preparation of yoghurt?

(A) Streptococcus lactis and Lactobacillus bulgaricus

(B) Streptococcus thermophilus and Lactobacillus acidophilus

(C) Streptococcus thermophilus and Lactobacillus bulgaricus

(D) Streptococcus lactis and Lactobacillus acidophilus

(E) Answer not known

190. Caramel flavoured fermented milk product prepared by boiling the milk with sugar over low fire followed by packing in earthern cups is known as

(A) Shrikhand
(B) Kefir
(C) Misti Dahi
(D) Acidophilus milk
(E) Answer not known

191. Which of the following is not true about curd?

1. Lactose of milk is converted to lactic acid in curd
2. Milk is incubated at 20°C to get the best curd
3. Fat globules coalesce and settle on the top of curd
4. Starters containing yeast and moulds spoil the quality of curd

(A) 2 only
(B) 2 and 4 only
(C) 1 and 3 only
(D) 4 only
(E) Answer not known

192. Which of the following statements about dahi/curd are correct as per Food Safety and Standards (Food Products Standards and Food Additives) Regulation 2011?

(i) Obtained from pasteurized milk by souring
(ii) May contain added cane sugar
(iii) Milk solids may be used in the preparation of curd
(iv) May be prepared using synthetic acidulants

(A) (i), (ii) & (iii) are correct
(B) (i), (ii) & (iv) are correct
(C) (i), (iii) & (iv) are correct
(D) (ii), (iii) & (iv) are correct
(E) Answer not known

193. Concentrated yoghurt has total solids of around _____.

(A) 15% (B) 20%

(C) 24% (D) 30%

(E) Answer not known

194. Match the following with the correct type cheese

(a)	Hard cheese	1.	Roquefort
(b)	Semi hard cheese	2.	Cheddar
(c)	Soft cheese	3.	Camembert

	(a)	(b)	(c)
(A)	1	2	3
(B)	2	3	1
(C)	2	1	3
(D)	3	1	2

(E) Answer not known

195. The average shelf-life of kheer at 37°C is

(A) 1 day (B) 2-3 days

(C) 4-5 days (D) 6-7 days

(E) Answer not known

196. The corresponding western product for khoa is

(A) Condensed milk (B) Evaporated milk

(C) Buttermilk (D) Skim milk

(E) Answer not known

197. The corresponding Western dairy product for Chhana is

(A) Soft cheese
(B) Green cheese
(C) Yoghurt
(D) Clotted cream
(E) Answer not known

198. Khoa is _____ indigenous dairy product.

(A) Heat desiccated/partially dehydrated
(B) Heat coagulated
(C) Cultural
(D) Frozen
(E) Answer not known

199. Pindi variety of khoa is used for _____ preparation.

(A) Burfi
(B) Gulab Jamun
(C) Kalakand
(D) Pantua
(E) Answer not known

200. Shelf life of khoa stored at 5-10°C is _____ days.

(A) 7
(B) 10
(C) 25
(D) 60
(E) Answer not known