

**150/2023**

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. Which among the following is not a standard condition to avoid milk solid losses in a dairy plant?
  - (A) Proper plant design
  - (B) Proper production planning
  - (C) Maintenance of equipment and systems
  - (D) Automation and mechanization
  
2. What is the suggested norm for milk fat losses during milk packaging stage in diary operations?
  - (A) 0.24%
  - (B) 0.64%
  - (C) 1%
  - (D) 2%
  
3. Which production system in a plant is otherwise called flow line production system on the basis of material flow characteristics?
  - (A) Mass production
  - (B) Batch production
  - (C) Job shop
  - (D) Unit manufacture of projects
  
4. What should be the minimum distance of drainage channels from the walls in the floor of a dairy plant?
  - (A) 15 cm
  - (B) 10 cm
  - (C) 5 cm
  - (D) Alongside wall
  
5. Read the following two statements and answer :
  - (a) Double entry method of book keeping is a complete method.
  - (b) In single entry method, it is hard to tell how much was spent on a particular expense in a given year.Which is correct?
  - (A) Only (a)
  - (B) Only (b)
  - (C) Both
  - (D) None
  
6. Which centrally sponsored dairy related scheme is implemented by the National Bank for Agriculture and Rural Development (NABARD) as nodal agency?
  - (A) NPDD
  - (B) DEEDS
  - (C) DDF
  - (D) AHDF
  
7. Which among the following is not a principle of cooperation?
  - (A) Democratic Member Control
  - (B) Member Economic Participation
  - (C) Social and Economic Development
  - (D) Autonomy and Independence

**A**

**3**

**[P.T.O.]**

8. When was Operation Flood III launched by the National Dairy Development Board?  
 (A) July 1980 (B) April 1985  
 (C) August 1987 (D) April 1990
9. Which is the brand name of Punjab State Cooperative Milk Producers' Federation?  
 (A) Verka (B) Vita  
 (C) Amul (D) Sudha
10. Who is the Registrar of dairy cooperatives in Kerala?  
 (A) Cooperative Registrar (B) Secretary of Dairy Development  
 (C) Director of Dairy Development (D) Managing Director of MILMA
11. Post mortem examination of dead cattle is not recommended in suspected cases of :  
 (A) Rinderpest (B) Anthrax  
 (C) Foot and Mouth (D) Fascioliasis
12. Which of the following is a scheme for conservation of indigenous breeds of cattle implemented by Dept. of AHD, Govt. of India?  
 (A) Goraksha (B) Rashtriya Gokul Mission  
 (C) Vechur conservation project (D) Desi Pashu Yojana
13. Match the following breeds of cattle with most appropriate description and select correct combination of figures and letters :
- |                  |                     |
|------------------|---------------------|
| (a) White Sindhi | (i) Pakistan origin |
| (b) Red Sindhi   | (ii) Heaviest breed |
| (c) Ongole       | (iii) Tharparkar    |
| (d) Kankrej      | (iv) Andhra pradesh |
- (a) (b) (c) (d)  
 (A) (iii) (i) (iv) (ii)  
 (B) (ii) (i) (iv) (iii)  
 (C) (iii) (ii) (iv) (i)  
 (D) (iv) (iii) (i) (ii)
14. Under which of the following development schemes Anad Pattern Co-operative Societies (APCOS) were established :  
 (A) Key Village Scheme  
 (B) Intensive Cattle Development Project  
 (C) Operation Flood  
 (D) Small Farmers' Development Agency

15. Read statements given below and select the correct combination from the options given :  
Statement [A] : Feeding of colostrum to new born calf is important for its immunity.  
Statement [B] : Maternal antibodies cannot pass from dam to calf through bovine placenta.
- (A) Both statements [A] and [B] are correct  
(B) Both statements [A] and [B] are wrong  
(C) Statement [A] is correct but Statement [B] is wrong  
(D) Statement [B] is correct but Statement [A] is wrong
16. Which of the following is the smallest exotic breed of cattle?  
(A) Brown Swiss (B) Red Dane  
(C) Jersey (D) Holstein Frescian
17. Which of the following traits in dairy cattle is having lowest heritability?  
(A) Birth weight (B) Fertility  
(C) Milk production (lb) (D) Feed conversion
18. Which of the following is NOT a sign of heat stress in dairy cattle?  
(A) Crowding under tree shade (B) Increased Salivation  
(C) Decreased rate of respiration (D) Open mouthed breathing
19. Vaccination is not practiced against \_\_\_\_\_ in dairy cattle.  
(A) Tuberculosis (B) Foot and Mouth  
(C) Rinderpest (D) Anthrax
20. Which of the following methods is used to count live and dead spermatozoa in a sample of semen?  
(A) Haemocytometer method (B) Methylene blue reduction test  
(C) Motility test (D) Eosin-Nigrosin staining
21. Milk plasma can be defined as milk minus :  
(A) Casein (B) Fat  
(C) Lactose (D) Calcium
22. A gravimetric method for milk fat determination :  
(A) Mojonnier method (B) Gerber method  
(C) Picric acid method (D) Polarimetric method
23. The mineral which is present in deficient amount in milk :  
(A) Calcium (B) Sodium  
(C) Potassium (D) Iron

24. The feeding pattern of cow has greatest effect on :  
 (A) Fat (B) Protein  
 (C) Lactose (D) Minerals
25. The carboxy terminal fragments of  $\beta$ -casein is called as :  
 (A) K-casein (B) Proteose peptone  
 (C)  $\gamma$ -Casein (D)  $\alpha$ s 1 casein
26. The enzyme whose heat stability is similar to minimum conditions used for milk pasteurization :  
 (A) Lipoprotein lipase (B) Alkaline serine protease  
 (C) Plasmin (D) Alkaline phosphatase
27. Protein which act as an enzyme modifier in Lactose synthesis :  
 (A)  $\beta$ -lactoglobulin (B)  $\alpha$  lactalbumin  
 (C) Immunoglobulin (D) Lactoferrin
28. The stabilization of fat emulsion in milk can be achieved mainly by :  
 (A) Pasteurization (B) Homogenization  
 (C) Cream separation (D) Freezing
29. The milk component which shows highest density at 20°C :  
 (A) Water (B) Milk fat  
 (C) Protein (D) Lactose
30. Physico chemical property of milk which is used as an index of mastitis infection :  
 (A) Specific gravity (B) Surface tension  
 (C) Electrical conductivity (D) Viscosity
31. Total solids in milk can be determined by :  
 (A) Drying method (B) Lactometer method  
 (C) Both (A) and (B) (D) None of these
32. In ashing, milk sample is exposed to a higher temperature of :  
 (A) 300°C (B) 440°C  
 (C) 550°C (D) 150°C
33. Cryoscope is an instrument used to measure sample property :  
 (A) Freezing point (B) Boiling point  
 (C) Viscosity (D) Acidity

34. The taste sensation of bitter is detected at :
- (A) Tip of tongue (B) Base of tongue  
(C) Middle of tongue (D) None of these
35. The buffering capacity of milk is often estimated by determining :
- (A) Titratable acidity (B) Viscosity  
(C) Temperature (D) Specific gravity
36. In presence of cane sugar, boiling milk by addition of resorcinol powder and concentrated HCl gives :
- (A) Blue colour (B) Red colour  
(C) Violet colour (D) Yellow colour
37. The reagent used for detecting the presence of hydrogen peroxide in milk :
- (A) P-phenyl nitrogen phosphate (B) Para phenylene diamine  
(C) Dimethyl amino benzoic acid (D) Sodium citrate
38. Rosalic acid test is used to detect the presence of :
- (A) Neutraliser (B) Preservative  
(C) Water (D) Nitrates
39. As per BIS if raw milk changes its colour between 1-2 hours in MBRT test, its quality can be graded as :
- (A) Very good (B) Poor  
(C) Good (D) Fair
40. Heavy metals in milk can be determined using :
- (A) Pycnometer  
(B) Flame photometer  
(C) Atomic absorption spectrophotometer  
(D) Kjeldahl apparatus
41. Any combination of species identified milk is termed as \_\_\_\_\_ in FSSAI.
- (A) Species identified milk (B) Mixed milk  
(C) Both (D) None
42. Every package of cheese, if coated or packed in food grade waxes polyfilm or wrapping of cloth, shall bear the label :
- (A) Contain food grade waxes  
(B) Wrapping of cloth present  
(C) Both  
(D) Remove the outer package before consumption

43. Microbiological limit (M) for coliforms pasteurized butter is \_\_\_\_\_ cfu/g.  
 (A) 100 (B) 50  
 (C) 20 (D) 10
44. Aerobic plate count is not included in the sampling plan of :  
 (A) Fermented milk (B) Cheese  
 (C) Both (A) and (B) (D) Paneer
45. *Enterobacter sakazakii* is a safety indicator in case of :  
 (A) Pasteurised milk (B) Infant milk food  
 (C) Cereal based complementary food (D) All of these
46. All India standard for double toned milk is :  
 (A) 3.0% fat and 8.5% SNF (B) 3.5% fat and 8.5% SNF  
 (C) 1.5% fat and 9.0% SNF (D) 1.5% fat and 8.7% SNF
47. Milk shall not contain the heavy metal Arsenic beyond a level of \_\_\_\_\_ ppm.  
 (A) 0.1 (B) 0.01  
 (C) 0.001 (D) 0.005
48. Maximum permissible limit of Aflatoxin M1 in milk is \_\_\_\_\_  $\mu\text{g} / \text{kg}$  .  
 (A) 10 (B) 5  
 (C) 1 (D) 0.5
49. Tolerance limit (mg/kg) for DDT in milk and milk products on a fat basis is :  
 (A) 1.0 (B) 1.25  
 (C) 1.50 (D) 0.5
50. Low lactose milk shall have a lactose content of less than :  
 (A) 2% (B) 1.5%  
 (C) 1% (D) 0.1%
51. The samples that are picked for evaluation in case of certain concerns or issues are :  
 (A) Monitoring samples (B) Regulatory samples  
 (C) Evaluation samples (D) None
52. As per FSSAI formal sample for analysis should as soon as possible, be carefully divided into \_\_\_\_\_ representative parts.  
 (A) Four (B) Three  
 (C) Two (D) Five

53. Stainless steel spoons, forceps, spatulas, and scissors used for sampling can be sterilized using :
- (A) Water bath (B) Dry heat oven  
(C) Autoclave (D) (B) or (C)
54. As per FSSAI for sampling of bulk milk samples a volume of \_\_\_\_\_ ml is drawn after thorough mixing.
- (A) 100 ml (B) 250 ml  
(C) 500 ml (D) 1000 ml
55. During sampling of pasteurised butter the upper \_\_\_\_\_ mm of the core should be discarded to avoid taking a non-representative portion of the butter due to moisture loss at the surface.
- (A) 10 mm (B) 25 mm  
(C) 30 mm (D) 35 mm
56. Number of sample units to be collected from a batch/ lot of packaged pasteurized cream for microbial analysis as per FSSAI :
- (A) 5 (B) 10  
(C) 15 (D) 20
57. As per FSSAI for microbiological analysis of bulk paneer 150-200g of sample units need to be send to \_\_\_\_\_ accredited labs.
- (A) One (B) Two  
(C) Three (D) Four
58. Circumstance for drawing a sample can be :
- (A) Consumer complaint (B) New business  
(C) Changing local concerns (D) All of these
59. As per FSSAI quantity of ice cream to be sent to food analyst/Director for analysis shall be :
- (A) 100g (B) 200g  
(C) 300g (D) 500g
60. Preservative that is added to milk during transportation of sample for chemical analysis :
- (A) Nisin (B) Formalin  
(C) Hydrogen peroxide (D) None
61. Laboratory pasteurization of milk before plating is used for the determination of \_\_\_\_\_ bacteria.
- (A) Coliform (B) Mesophilic  
(C) Thermotolerant (D) Thermophilic

62. During fermentation of yoghurt  $\beta$  casein is hydrolysed by :
- (A) *L.bulgaricus* (B) *S. thermophilus*  
 (C) Both (D) None
63. Choose the correct statement :
- (A) Older cells are more susceptible to pH change than younger cells  
 (B) Younger cells are more susceptible to pH change than older cells  
 (C) Resting cells are more susceptible to pH change than younger cells  
 (D) None
64. *Alcaligenes viscolactis* causes the ————— defect in milk.
- (A) Gassiness (B) Ropiness  
 (C) Sourness (D) Sweet curdling
65. Red discolouration in milk is caused by :
- (A) *Serratia marcescens* (B) *Rhodotorula glutinis*  
 (C) Both (A) and (B) (D) None
66. Malta fever is caused by :
- (A) *Clostridium spp.* (B) *Bacillus spp.*  
 (C) *Brevi bacterium spp.* (D) *Brucella spp.*
67. Widal test is used for the detection of :
- (A) Typhoid fever (B) Q fever  
 (C) Scarlet fever (D) Malta fever
68. ————— is an obligately heterofermentative lactobacilli.
- (A) *Lactobacillus acidophilus*  
 (B) *Lactobacillus casei*  
 (C) *Lactobacillus brevis*  
 (D) *Lacto bacillus bulgaricus*
69. The key enzyme F6-PPK is used for the identification of the genus :
- (A) Lactobacillus (B) Bifidobacterium  
 (C) Lactococcus (D) Enterococcus
70. The activity of starter culture can be maintained by :
- (A) Reducing or controlling the metabolic activity of the microorganism.  
 (B) Separating the organism from waste products  
 (C) Both (A) and (B)  
 (D) None



71. The time temperature combination used for stassanization is :
- (A) 74°C for 7 minutes (B) 74°C for 7 seconds  
(C) 150°C for 2 seconds (D) 150°C for 2 minutes
72. The machine which clarifies as well as homogenize the milk is known as :
- (A) Homogenizer (B) Viscolizer  
(C) Bactofuge (D) Clarifixator
73. Concentration of milk result in :
- (i) The water activity decreases  
(ii) Hygroscopicity increases  
(iii) The conformation of proteins change  
(iv) Diffusion coefficients increase
- (A) Only (i) and (ii) is true  
(B) Only (ii) is true  
(C) Only (i), (ii) and (iii) is true  
(D) All of above is true
74. The whey protein nitrogen content per gram of High heat skim milk powder :
- (A) Maximum 1.5 N mg per gram  
(B) Minimum 1.5 mg N per gram  
(C) Minimum 6 mg N per gram  
(D) Maximum 6 mg N per gram
75. \_\_\_\_\_ Test is done to determine the amount of chemical stabilizer to be added to *any* given batch of evaporated milk for the most satisfactory heat stability.
- (A) Turbidity test  
(B) Pan sterilization test  
(C) Pilot sterilization test  
(D) Primary sterilization test
76. The eye formation in Swiss cheese is due to the production of :
- (A) Butyric acid (B) Acetic acid  
(C) Oxygen (D) Carbon dioxide
77. The temperature of clarification of ghee is :
- (A) 70°C–80°C (B) 190°C–200°C  
(C) 110°C–120°C (D) 170°C–180°C

78. \_\_\_\_\_ is the major component of milk stone.
- (A) Ash (B) Fat  
(C) Protein (D) Lactose
79. Type B deposits are removed using :
- (A) Alkaline solutions (B) Acid solutions  
(C) Steam (D) Hydrogen peroxide
80. \_\_\_\_\_ is used as a stabilizer as well as emulsifier in ice cream.
- (A) Pectin (B) Agar Agar  
(C) Lecithin (D) Carboxy Methyl Cellulose
81. The crumbly defect in butter is due to :
- (A) Overworking of butter  
(B) Underworking of butter  
(C) Excessive high temperature of wash water  
(D) Low salt content
82. The spacing between the drums in a double drum dryer is :
- (A) 0.5–1 mm (B) 0.25–3 mm  
(C) 5–5.5 mm (D) 10–10.5 mm
83. Naram–pak is a variety of :
- (A) Paneer (B) Khoa  
(C) Sandesh (D) Shrikhand
84. As per BIS standards the maximum sucrose percentage in dry matter percent by mass in shrikhand is :
- (A) 52.5% (B) 82.5%  
(C) 62.5% (D) 72.5%
85. Age thickening in sweetened condensed milk is caused by :
- (A) Excessive forewarming temperature  
(B) Excessive homogenization pressure  
(C) Adding sucrose before forewarming  
(D) All of the above

86. As per FSSAI standards the fat and SNF content in skimmed milk is :
- (A) Minimum 0.5% fat and maximum 8.7% SNF  
(B) Maximum 0.5% fat and minimum 8.7% SNF  
(C) Maximum 0.5% fat and maximum 8.7% SNF  
(D) Maximum 0.5% fat and minimum 9% SNF
87. The percentage overrun in soft ice cream is :
- (A) 70 – 80% (B) 80 – 90%  
(C) 10 – 15% (D) 30 – 50%
88. \_\_\_\_\_ Grade lactose is used for pharmaceutical preparations.
- (A) Crude (B) USP  
(C) Edible (D) Primary
89. As per Agmark standards the oleic acid content of general grade ghee is :
- (A) Not more than 1.4 (B) Not less than 1.4  
(C) Not more than 2.5 (D) Not less than 2.5
90. \_\_\_\_\_ variety of khoa is used for pantua preparation.
- (A) Dhap (B) Danedhar  
(C) Pindi (D) karapak
91. A layer of which chemical formed on the surface of Stainless Steel naturally protects it from corrosion :
- (A) Ferrous Sulphate (B) Chromium Oxide  
(C) Nickel Chloride (D) Carbon Dioxide
92. Which of the following statements is TRUE about fittings used in Dairy?
- (i) Dairy fittings are usually made using SS–304 or SS–316.  
(ii) The pipe connections that require occasional dismantling are usually connected by rivets.
- (A) Only (i) (B) Only (ii)  
(C) Both (i) and (ii) (D) Neither (i) or (ii)

93. The time–temperature combination of pasteurization is :  
(A) 63°C/15 min (B) 72°C /30 sec  
(C) Both (A) and (B) (D) None of the above
94. \_\_\_\_\_ is found only in semi–open type cream separators.  
(A) Distributor  
(B) Disc stack  
(C) Paring disc  
(D) Automatic solids ejection
95. The rise in temperature due to homogenization, if the homogenizing pressure is 200 kg/cm<sup>2</sup> is :  
(A) 5°C (B) 10°C  
(C) 15°C (D) 20°C
96. What is the regeneration efficiency of a pasteurizer, if the initial temperature of milk = 5°C, temperature after regeneration = 68°C, and the temperature after pasteurization = 75°C?  
(A) 85% (B) 90%  
(C) 92.5% (D) 95%
97. \_\_\_\_\_ is the most commonly used refrigerant in dairy industry.  
(A) CFC (B) Freon  
(C) HCFC (D) Ammonia
98. A steam generating pressure vessel having a capacity of less than \_\_\_\_\_ does not come under the definition of boilers according to Indian Regulations.  
(A) 10 litres (B) 25 litres  
(C) 50 litres (D) 100 litres
99. Which among the following insulation materials is used in cold storages?  
(A) Glass Wool (B) Mineral Wool  
(C) Polyurethane Foam (D) Fiberglass
100. Expand ETP in the context of a dairy industry :  
(A) Efficiency Training Program  
(B) Energy Tracking Probe  
(C) Exchange traded product  
(D) Effluent Treatment Plant
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