A
SET

Booklet No. :

FT - 16

Food Technology

Duration of Test : 2 Hours **Max. Marks : 120**

Hall Ticket No. | | | | | | | | |

Name of the Candidate : _____

Date of Examination : _____ **OMR Answer Sheet No. :** _____

_____ _____

Signature of the Candidate **Signature of the Invigilator**

INSTRUCTIONS

1. This Question Booklet consists of **120** multiple choice objective type questions to be answered in **120** minutes.
2. Every question in this booklet has 4 choices marked (A), (B), (C) and (D) for its answer.
3. Each question carries **one** mark. There are no negative marks for wrong answers.
4. This Booklet consists of **16** pages. Any discrepancy or any defect is found, the same may be informed to the Invigilator for replacement of Booklet.
5. Answer all the questions on the OMR Answer Sheet using **Blue/Black ball point pen only.**
6. Before answering the questions on the OMR Answer Sheet, please read the instructions printed on the OMR sheet carefully.
7. OMR Answer Sheet should be handed over to the Invigilator before leaving the Examination Hall.
8. Calculators, Pagers, Mobile Phones, etc., are not allowed into the Examination Hall.
9. No part of the Booklet should be detached under any circumstances.
10. The seal of the Booklet should be opened only after signal/bell is given.

FT-16-A

FOOD TECHNOLOGY (FT)

1. The pigment type in brinjal is
   (A) Carotenoid (B) Anthocyanin (C) Caramel (D) Chlorophyll

2. Phytol chain is present in
   (A) Carotenoids (B) Chlorophyll (C) Hemoglobin (D) Phycocyanin

3. Which amino acid has an aromatic phenolic side chain ?
   (A) Histidine (B) Cysteine (C) Tyrosine (D) Tryptophan

4. Hops are used in the manufacture of
   (A) Wine (B) Beer (C) Vinegar (D) All of these

5. Proteins taking part in the perception of image are
   (A) Rhodopsin and pepsin (B) Rhodopsin and iodopsin
   (C) Pepsin and iodopsin (D) All the three as above

6. This emulsifier is amphoteric :
   (A) Glyceryl monostearate (B) Sodium stearoyllactylate
   (C) Lecithin (D) None of the above

7. Bacteria do not survive in highly salted pickles because
   (A) Bacteria are killed by plasmolysis
   (B) Salt inhibits reproduction
   (C) Pickles do not contain essential nutrients
   (D) Bacteria do not get enough light

8. Aflatoxin is a type of
   (A) Plant toxin (B) Fungal toxin
   (C) Bacterial toxin (D) None of the above

9. Poly aromatic hydrocarbons are a type of
   (A) Plant toxin (B) Fungal toxin
   (C) Bacterial toxin (D) Environmental contaminant

10. Which of the following has no aldehyde or ketonic group ?
(A) Fructose (B) Glucose (C) Sucrose (D) Maltose

11. Adequacy of blanching of fruits and vegetables milk is generally judged by
(A) Amylase test (B) Lipase test
(C) Peroxidase test (D) Phosphatase test

12. This sweetener is a protein :
(A) Saccharin (B) Monellin (C) Stevioside (D) Dulcin

13. The bioactive compound in pepper is
(A) Piperidine (B) Piperizine (C) Piperine (D) Piperidizine

14. Which fatty acid is essential and has three double bonds ?
(A) Linoleic acid (B) Linolenic acid
(C) Arachidonic acid (D) None of the above

15. The primary structure of a protein is due to
(A) Hydrogen bonds (B) Peptide bonds
(C) S-S linkage (D) Ionic bonds

16. This is not a metalloprotein :
(A) Phytochrome (B) Cytochrome (C) Glycoprotein (D) Ferrodoxine

17. This compound is responsible for bitter taste in grapefruit :
(A) Limonin (B) Naringenin (C) Naringin (D) Both (B) & (C)

18. Enzyme A has a K_m of 10^{-2} M, while enzyme B has a K_m of 10^{-4} M. Which fact is true ?
(A) Enzyme B has stronger affinity to the substrate than Enzyme A.
(B) Enzyme A has a stronger affinity to the substrate than Enzyme B.
(C) Both have similar affinity for the substrate.
(D) K_m is not related to the affinity of the substrate.

19. This glycoside has a steroidal backbone :
(A) Saponins (B) Naringin
(C) Anthocyanin (D) None of the above

20. Coenzymes FMN and FAD are derived from Vitamin

(A) B_1 (B) B_2 (C) B_6 (D) B_{12}

21. This sugar can be tolerated by diabetics :

(A) Lactose (B) Maltose (C) Fructose (D) Glucose

22. Which of these vitamins is sulphur containing ?

(A) Folic acid (B) Pantothenic acid

(C) Biotin (D) All of the above

23. Deficiency of this vitamin results in excessive hemorrhage :

(A) A (B) K (C) B (D) E

24. Anaerobic respiration of animals produces

(A) $C_2H_5OH + CO_2$ (B) Lactic acid + water

(C) Glucose + O_2 (D) $CO_2 + H_2O$

25. A good quality ice-cream should have

(A) Small number of small sized ice crystals

(B) Small number of large sized ice crystals

(C) Large number of small sized ice crystals

(D) Large number of large sized ice crystals

26. Staling of *idlis* is due to

(A) Denaturation of protein (B) Gelatinization of starch

(C) Retrogradatiopn of starch (D) All of the above

27. This polysaccharide is present in oats :

(A) α-Glucan (B) β-Glucan (C) α, β-Glucan (D) All of the above

28. Which sugar will give maximum Maillard browning on reaction with amino acid ?

(A) Glucose (B) Fructose (C) Lactose (D) Sucrose

29. Sugars mainly present in honey are

(A) Glucose and galactose (B) Galactose and fructose

(C) Glucose and fructose (D) All the three sugars as above

30. 28°B sugar solution can be performed by adding

(A) 28g sugar in 72 ml water (B) 28g sugar in 1L of water

(C) 28g sugar in 100 ml water (D) None of the above

31. Specific gravity can be used to estimate

(A) Protein in a beverage (B) Minerals in water

(C) Alcohol in beer and wine (D) None of the above

32. Nutraceuticals associated with Age Related Macular Degeneration are

(A) Lycopene and lutein (B) Zeaxanthin and lycopene

(C) Lutein and zeaxanthin (D) All the three as above

33. This product has the lowest water activity :

(A) Watermelon (B) Jam (C) Potatoes (D) Ice frozen at –50°C

34. Conching and refining are operations involved in

(A) Coffee processing (B) Cocoa processing

(C) Spice processing (D) None of the above

35. Bread samples A and B have a bulk density of 0.430 and 0.330, respectively. Which of the following is true ?

(A) Texture of A is softer than B. (B) Texture of B is softer than A.

(C) Texture of A and B are similar. (D) Bulk density is not correlated to texture.

36. Overrun in ice-cream is generally

(A) 10-40% (B) 40-70% (C) 90-100% (D) ~200%

37. A peculiar amino acid present in bacterial cell wall is

(A) Glutamate (B) Alanine

(C) Diaminopimelic acid (D) Aspartate

38. In aseptic processing, sterilization of packaging material is achieved
(A) by passing through an alcohol bath
(B) by passing under UV lamp
(C) by passing through hydrogen peroxide
(D) by passing through IR lamp

39. Carbonation of beverages is best done at
(A) 10 °C (B) 20 °C (C) 30 °C (D) 40 °C

40. Mass spectrometry is based on
(A) Charge of the molecule (B) Mass of the molecule
(C) Mass/Charge ratio (D) None of the above

41. This polysaccharide is of microbial origin :
(A) Guar gum (B) Gum tragacanth
(C) Xanthan (D) Gum karaya

42. Oleoresins are obtained from
(A) Oilseeds (B) Oils (C) Seeds (D) Spices

43. Freezing takes longer than thawing under otherwise similar conditions because
(A) Thermal conductivity of ice is more than that of liquid water
(B) Density of ice is less than that of liquid water
(C) Specific heat of ice is less than that of liquid water
(D) All the above

44. This water is most suitable for carbonation of beverages :
(A) Soft water (B) Mildly hard
(C) Medium hard (D) Very hard

45. The colour of black tea is due to
(A) Oxidation of carbohydrates (B) Oxidation of lipids
(C) Oxidation of chlorophyll (D) None of the above

46. Effluent from this industry will have maximum BOD :
(A) Orange juice processing (B) Whey from cheese processing
(C) Bread processing (D) Black tea processing

47. Pasteurization of milk is achieved by heating
(A) 72 °C for 15 seconds (B) 72 °C for 30 seconds
(C) 82 °C for 15 seconds (D) 82 °C for 30 seconds

48. This polymer is biodegradable :
(A) Polypropylene (B) Polyester
(C) Polylactic acid (D) Polyvinyl chloride

49. This packaging material would have lowest WVTR :
(A) Paper (B) Glass (C) Polyethylene (D) Polyester

50. Sauerkraut is a type of
(A) Meat (B) Fermented cabbage
(C) Fermented cereal based product (D) Wine

51. Mayonnaise is an emulsion of the type
(A) Water-in-oil (B) Oil-in-water
(C) Water-in-oil-in-water (D) Oil-in-water-in-oil

52. The rheological behaviour of tomato ketchup is
(A) Newtonian (B) Dilatant fluid
(C) Pseudoplastic fluid (D) Bingham plastic

53. This spectrophotometry is used for analysis of minerals
(A) Flame spectrophotometer
(B) Mass spectrophotometer
(C) Atomic absorption spectrophotometer
(D) All of the above

54. Maltodextrins are characterized in terms of
(A) Dextrinising Units (B) Dextrose Equivalent
(C) Dextrinising Equivalent (D) All of the above

55. The principle of lyophilization is based on
(A) Boiling of water (B) Sublimation of water
(C) Freezing of water (D) All of the above

56. Gossypol is a toxic constituent in this oil :
(A) Groundnut (B) Rapeseed (C) Cottonseed (D) Jatropa

57. This is an assay for antioxidant activity :
(A) DPPH assay (B) FRAP assay (C) ABTS assay (D) All of these

58. Olive oil is a rich source of
(A) Polyunsaturated fatty acids (B) Saturated fatty acids
(C) Monounsaturated fatty acids (D) None of the above

59. The bioactive nutraceutical component present in rice bran oil is
(A) Vitamin A (B) Coenzyme A (C) Phytosterols (D) Oryzanol

60. A good frying oil should have
(A) Low smoke point and low flash point
(B) High smoke point and high flash point
(C) Low smoke point and high flash point
(D) High smoke point and low flash point

61. Sodium nitrite in meat processing brings about
(A) Formation of nitrosamine
(B) Retention of colour
(C) Inhibition of *Clostridium botulinum*
(D) All of the above

62. As compared to coconut oil, groundnut oil has
(A) Low saponification value and low iodine value
(B) High saponification value and high iodine value
(C) High saponification value and low iodine value
(D) Low saponification value and high iodine value

63. Vitamins not present in plant foods are

(A) Vitamins A, D and E (B) Vitamins A, K and B_1

(C) Vitamins A, D and B_{12} (D) Vitamins D, B_1 and B_{12}

64. β-Amylase cleaves starch to

(A) Glucose (B) Maltose (C) Limit dextrin (D) All of these

65. These amino acids give a yellow colour on reaction with aniline hydrogen phthalate :

(A) Proline and valine (B) Valine and hydroxyproline

(C) Leucine and proline (D) Proline and hydroxyproline

66. This polysaccharide is a polymer of galcturonic acid :

(A) Cellulose (B) Chitin (C) Pectin (D) Amylopectin

67. The limiting amino acid in cereals is :

(A) Lysine (B) Methionine (C) Valine (D) Leucine

68. This protein is a transport protein :

(A) Collagen (B) Hemoglobin (C) Hordein (D) Glycoprotein

69. This amino acid is precursor of niacin

(A) Tyrosine (B) Methionine (C) Tryptophan (D) Arginine

70. This amino acid is the precursor of ethylene in fruits :

(A) Cystine (B) Valine (C) Histidine (D) Methionine

71. Pasteurization of milk is aimed to inhibit

(A) *Bacillus subtilis* (B) *Salmonella typhimurium*

(C) *Mycobacterium tuberculosis* (D) *Vibrio cholerae*

72. During cooking, rice undergoes

(A) Hydrolysis of starch (B) Gelatinization of starch

(C) Retrogradation of starch (D) All of the above

73. The texture in jams is due to
(A) Pectin and sugar (B) Pectin and acid
(C) Sugar and acid (D) All the three as above

74. A phospholipid present in egg yolk is
(A) Phytosterol (B) Cholesterol (C) Lecithin (D) All of these

75. This polysaccharide is present in the exoskeleton of prawns and crabs :
(A) Pectin (B) Chitin (C) Chitosan (D) Cellulin

76. Secondary structure of a protein is due to
(A) Hydrogen bonds (B) Peptide bonds
(C) Hydrophobic associations (D) All of the above

77. The deficiency of this vitamin is responsible for megaloblastic anemia
(A) Folic acid (B) B_6 (C) B_{12} (D) All of these

78. Acid insoluble ash in flour is an indication of
(A) Flour is contaminated with microorganisms
(B) Flour is made from sprouted wheat
(C) Flour is made from wheat not cleaned properly
(D) All of the above

79. This is an indicator of insect infestation in cereal and legume flours :
(A) Uric acid (B) Citirc acid (C) Acetic acid (D) All of these

80. In vegetables like okra or '*bhendi*', the mucilage is made up of
(A) Glucose and mannose (B) Galactose and mannose
(C) Glucose and galactose (D) All of the above

81. This mineral is associated with goiter
(A) Calcium (B) Sodium (C) Iodine (D) Magnesium

82. The astringency in tea is attributed to
(A) Proteins (B) Carbohydrates (C) Polyphenols (D) All of these

83. This can work as a cocoa butter substitute :
(A) Coconut oil (B) Hydrogenatted vegetable fat
(C) Mango kernel fat (D) All of the above

84. This starch has the biggest size among the following :
(A) Rice (B) Wheat (C) Potato (D) Corn

85. A diabetic would benefit most from
(A) Food having low GI (B) Food having low cholesterol
(C) Food having low sodium (D) All of the above

86. Ajinomoto is chemically
(A) Monosodium aspartate (B) Monosodium glutamate
(C) Disodium aspartate (D) Disodium glutamate

87. Among the following, this is the richest source of vitamin C :
(A) Orange juice (B) Amla juice (C) Grape juice (D) Litchi juice

88. The hydrocolloid showing maximum hysteresis is :
(A) Gelatin (B) Alginate (C) Agar (D) Starch

89. Tetrapyrrole structure is common between
(A) Chlorophyll and lycopene (B) Haemoglobin and lycopene
(C) Chlorophyll and haemoglobin (D) All of the above

90. The co-factor for the enzyme polyphenol oxidase is
(A) Magnesium (B) Iron (C) Zinc (D) Copper

91. Constituents involved in the formation of nitrosamines are
(A) Amino acids and nitrate (B) Secondary amines and nitrate
(C) Secondary amines and nitrite (D) Amino acids and nitrite

92. Vitamin involved in synthesis of collagen is
(A) Pantothenic acid (B) Folic acid
(C) Vitamin C (D) Riboflavin

93. Amino acids essential for infants are

(A) Arginine and methionine (B) Histidine and methionine

(C) Arginine and histidine (D) Arginine, methionine and histidine

94. The amino acids vital in functionality of gluten are

(A) Lysine and cysteine (B) Cysteine and cystine

(C) Cystine and lysine (D) All the three as above

95. Hydrocolloid showing thermally reversible, transparent and elastic gel is

(A) Agar (B) Gelatin (C) Carrageenan (D) Starch

96. Hydrocolloid having maximum solubility in water

(A) Guar gum (B) Gum Arabic (C) Gum karaya (D) Gum tragacanth

97. This chromatography is generally used for analysis of fatty acid composition in foods

(A) High Pressure Liquid Chromatography

(B) Gas Chromatography

(C) Thin Layer Chromatographty

(D) Supercritical Fluid Chromatography

98. The vitamin injected in newborns is

(A) Vitamin C (B) Vitamin B_1 (C) Vitamin K (D) Vitamin A

99. Glycaemic index is a measure of the amount of glucose released postprandial and is likely to be least affected by

(A) Carbohydrate type or content in food

(B) Fat content in food

(C) Soluble fiber content in food

(D) Mineral content in food

100. The objective of fermenting a food substrate is to

(A) Improve the sensory properties of the food

(B) Increase the nutritional quality of food

(C) Extend the storage period

(D) All of the above

101. Food safety and Standards Act, 2006 contains _____ number of chapters.

(A) XII (B) XI (C) VIII (D) X

102. NABL stands for

(A) National Analytical Board for Laboratories.

(B) National Accreditation Board for Testing and Calibration of Laboratories

(C) National Accreditation Board for Testing and Certification of Laboratories

(D) National Analytical Board for Testing and Calibration of Laboratories

103. If the test reports for the sample of analysis are found to be at variance, then designated officer shall send one part of sample to

(A) Referral Laboratory (B) Food Analyst

(C) FSSAI (D) Central Laboratory

104. The _____ on the application of Sanitary and Phytosanitary Measures and on Technical Barriers to Trade (SPS and TBT Agreements) both encourage the international harmonization of food standards.

(A) Uganda Round Agreement (B) Uruguay Round Agreement

(C) Zurich Round Agreement (D) India Round Agreement

105. Codex Alimentarius Commission was created by joint efforts of

(A) WHO and World Bank (B) WHO and FAO

(C) WHO and FOO (D) WHO and FSO

106. The work required for crushing material is proportional to the logarithm of the ratio between the initial and final diameters according to

(A) Rittinger's law (B) Kick's law

(C) Bond's law (D) Boyle's law

107. In Constant rate filtration

(A) ΔP is minimum at start and maximum at the end of the filtration run.

(B) ΔP is constant throughout the run.

(C) ΔP is maximum at start and minimum at the end.

(D) Independent of ΔP.

108. Filter aid is used to

(A) increase the filtering efficiency

(B) decrease the filtering efficiency

(C) give body to the filtrate

(D) increase the mass of cake

109. A multiple effect evaporator has a capacity to process 400 kg of concentrated juice per day when it is concentrating from 10 % to 25% solids. The water evaporated kg per day is

(A) 600 (B) 2400 (C) 6000 (D) 1600

110. The moisture content in excess of equilibrium moisture content is called

(A) Saturated moisture (B) Free moisture content

(C) Specific moisture content (D) None of the above

111. Which of the following is variable area meter ?

(A) Venturi meter (B) Rota meter

(C) Orifice meter (D) All of the above

112. The ratio of vapour pressure of A to vapour pressure of B is called as _____ of A with respect B.

(A) Volatility (B) Diffusivity

(C) Relative volatility (D) Relative diffusivity

113. As per Stephan – Boltzmann law the total energy emitted by a black body directly proportional to fourth power of its

(A) Surface area (B) Emissive power

(C) An absolute temperature (D) Energy

114. SI unit of overall heat transfer coefficient is

(A) $W/(m^2 K)$ (B) $(m^2 K)/W$ (C) $Wm^2 K$ (D) $W K/m^2$

115. Dew point is the temperature at which the

(A) Boiling occurs (B) Evaporation occurs

(C) Condensation occurs (D) Freezing occurs

116. Natural convection is characterized by

(A) Grashof number (B) Peclet number

(C) Reynolds number (D) Prandtl number

117. What is the effect of the boiling point elevation in multiple effect evaporators ?

(A) Reduce the capacity (B) Reduce the economy

(C) Increase the economy (D) Increase capacity

118. Which of the following laws is associated with the amount of crushing energy required to create new surface ?

(A) Kopp's law (B) Fourier's law

(C) Fick's law (D) Rittinger's law

119. Constant rate period is that drying period during which

(A) The moisture content of the substance remains constant

(B) The rate of vaporization per unit of drying surface area is constant

(C) The rate of vaporization increase with time

(D) The rate of vaporization decrease with the time

120. The angle formed by pouring a powder as heap on a flat surface is known as

(A) Contact angle (B) Angle of nip

(C) Angle of repose (D) Critical angle

SPACE FOR ROUGH WORK

FOOD TECHNOLOGY (FT)
SET-A

Question No	Answer	Question No	Answer
1	B	61	D
2	B	62	D
3	C	63	C
4	B	64	D
5	B	65	D
6	C	66	C
7	A	67	A
8	B	68	B
9	D	69	C
10	C	70	D
11	C	71	C
12	B	72	B
13	C	73	D
14	B	74	C
15	B	75	B
16	C	76	A
17	D	77	C
18	A	78	C
19	A	79	A
20	B	80	B
21	C	81	C
22	C	82	C
23	B	83	C
24	B	84	C
25	C	85	A
26	C	86	B
27	B	87	B
28	B	88	C
29	C	89	C
30	A	90	D
31	C	91	C
32	C	92	C
33	D	93	C
34	B	94	B
35	B	95	B
36	C	96	B
37	C	97	B
38	C	98	C
39	A	99	D
40	C	100	D

41	C	101	A
42	D	102	B
43	C	103	A
44	A	104	B
45	C	105	B
46	B	106	B
47	A	107	A
48	C	108	A
49	B	109	A
50	B	110	B
51	A	111	B
52	D	112	C
53	C	113	C
54	B	114	C
55	B	115	C
56	C	116	A
57	D	117	A
58	C	118	D
59	D	119	B
60	B	120	C