DO NOT OPEN THE SEAL UNTIL INSTRUCTED TO DO SO

Question Booklet No.

QUESTION BOOKLET

FOOD TECHNOLOGY

Booklet Series

A

Roll No. | | | | | |

(Enter your Roll number in the above space)

Time Allowed : 2 Hours **Maximum Marks : 100**

INSTRUCTIONS FOR CANDIDATES

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS QUESTION BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR QUESTIONS ETC. IF SO, GET IT REPLACED BY A COMPLETE QUESTION BOOKLET.
2. Please note that it is the candidate's responsibility to encode and fill in the Roll Number and Question Booklet Series Code A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/discrepancy will render the OMR Answer Sheet liable for rejection.
3. This Question Booklet contains **100** questions. Each question is printed in **English** only. Each question comprises four responses (answers). You will select the response which you want to mark on the OMR Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each question.
4. You have to mark all your responses **ONLY** on the separate OMR Answer Sheet provided. See Instructions at the backside of the OMR Answer Sheet.
5. **All** questions carry equal marks.
6. Before you proceed to mark in the OMR Answer Sheet the response to various questions in the Question Booklet, you have to fill in some particulars in the OMR Answer Sheet as per instructions mentioned on the OMR Answer Sheet.
7. After you have completed filling in all your responses on the OMR Answer Sheet and the examination has concluded, you should hand over to the Invigilator **only the OMR Answer Sheet**. You are permitted to take away with you the **Question Booklet**, along with candidate's copy of **OMR Answer Sheet**.
8. Sheets for rough work are appended in the Question Booklet at the end.
9. **Penalty for wrong answers :**

   THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE AS UNDER.

   (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **0.25 mark** assigned to that question will be deducted as penalty.

   (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to that question.

   (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be no penalty for that question.

DO NOT OPEN THE SEAL UNTIL INSTRUCTED TO DO SO

Test Prime

ALL EXAMS, ONE SUBSCRIPTION

50,000+
Mock Tests

Personalised Report Card

Unlimited Re-Attempt

500+
Exam Covered

Previous Year Papers

500%
Refund

IBPS · NABARD · INDIAN RAILWAYS

ATTEMPT FREE MOCK NOW

1. Mixer blade used for dough preparation in bakery industry is

[A] Z-blade

[B] propeller blade

[C] turbine blade

[D] ribbon blade

2. A method in which continuous electric current is passed through food to heat it rapidly while maintaining the quality is called

[A] microwave heating

[B] irradiation

[C] ohmic heating

[D] sonication

3. In an ice-cream manufacturing plant, 1500 liters of ice-cream was obtained from 1000 liters of ice-cream mix. Percentage overrun in the ice-cream was

[A] 25

[B] 50

[C] 100

[D] 150

4. Match the items in Group—I with the most appropriate items in Group—II :

Group—I	**Group—II**
(P) Freeze concentration	1. Triple point of water
(Q) Reverse osmosis	2. Heat transfer by conduction
(R) Drum drying	3. Eutectic point
(S) Freeze drying	4. Concentration polarization

[A] (P)-4, (Q)-3, (R)-2, (S)-1

[B] (P)-1, (Q)-2, (R)-4, (S)-3

[C] (P)-3, (Q)-4, (R)-2, (S)-1

[D] (P)-1, (Q)-3, (R)-2, (S)-4

5. Water can be best described as a

[A] Newtonian fluid

[B] pseudoplastic fluid

[C] rheopectic fluid

[D] dilatant fluid

6. Heat exchangers are used to

[A] pasteurize milk only

[B] sterilize the juice only

[C] heat or cool the liquid food

[D] maintain constant temperature

7. Wheat dough is generally _____ material.

[A] elastic

[B] viscoplastic

[C] viscoelastic

[D] plastic

8. Make the correct match between specific food processing operations in Group—I with their mechanism of actions in Group—II :

Group—I	**Group—II**
(P) Ball mill	1. Compression and shear
(Q) Roller mill	2. Pressure bursting
(R) Flash peeling	3. Friction and shear
(S) Abrasive peeling	4. Impact and shear

[A] (P)-4, (Q)-2, (R)-1, (S)-3

[B] (P)-4, (Q)-1, (R)-2, (S)-3

[C] (P)-4, (Q)-3, (R)-2, (S)-1

[D] (P)-3, (Q)-1, (R)-4, (S)-2

9. Mango juice is concentrated from 10% to 50% solid (on whole mass basis) in evaporator under steady state conditions. If the feed rate is 50 kg/s, then the rate of vapour production during the process will be

[A] 10 kg/s

[B] 40 kg/s

[C] 20 kg/s

[D] 25 kg/s

10. The correct sequence for different types of heat exchangers in the decreasing order of effectiveness is

[A] parallel-flow, counter-flow, shell and tube and cross-flow

[B] cross-flow, counter-flow, shell and tube and parallel-flow

[C] counter-flow, shell and tube, cross-flow and parallel-flow

[D] counter-flow, cross-flow, shell and tube and parallel-flow

11. Thermal destruction of microorganisms follows the kinetics of

[A] zero

[B] first

[C] second

[D] fractional

12. Which one of the following microorganisms is used in the preparation of bread?

[A] *Candida utilis*

[B] *Saccharomyces cerevisiae*

[C] *Saccharomyces uvarum*

[D] *Aspergillus niger*

13. Match the items in Group—I with the most appropriate items in Group—II :

Group—I (Process)	**Group—II (Activity)**
(P) Fermentation	1. Destruction of pathogens
(Q) Sterilization	2. Destruction of microorganisms
(R) Pasteurization	3. Growth of microorganisms
(S) Blanching	4. Destruction of enzymes

[A] (P)-4, (Q)-2, (R)-1, (S)-1

[B] (P)-3, (Q)-1, (R)-2, (S)-4

[C] (P)-4, (Q)-1, (R)-2, (S)-1

[D] (P)-3, (Q)-2, (R)-1, (S)-4

14. Which of the following spoilages is seen in meat under anaerobic condition?

[A] Stickiness

[B] Whiskers

[C] Surface slime

[D] Putrefaction

15. Protein responsible for spongy structure in bread is

[A] gliadin

[B] gluten

[C] zein

[D] albumin

16. Margarine is made up of

[A] milk fat

[B] vegetable fat

[C] milk protein

[D] vegetable protein

17. Match the items in Group—I with the most appropriate items in Group—II :

Group—I (Products)	**Group—II (TSS, %)**
(P) Jam	1. Not less than 25
(Q) Tomato paste	2. Not less than 45
(R) Tomato puree	3. Not less than 68
(S) Orange squash	4. Not less than 12

[A] (P)-4, (Q)-1, (R)-2, (S)-3

[B] (P)-3, (Q)-1, (R)-4, (S)-2

[C] (P)-1, (Q)-4, (R)-2, (S)-3

[D] (P)-3, (Q)-1, (R)-2, (S)-4

18. Which of the following packaging materials ***cannot*** resist sterilization and freezing processes?

[A] Polyvinyl chloride (PVC)

[B] Polyethylene

[C] Polyester

[D] None of the above

19. The most important substance required for jelly is

[A] acid

[B] sugar

[C] pectin

[D] salt

20. Match the items in Group—I with the most appropriate items in Group—II :

Group—I (Products)	**Group—II (Process)**
(P) Fruits	1. Hot air drying
(Q) Vegetables	2. Blanching
(R) Milk	3. Sterilization
(S) Cereals	4. Osmotic dehydration

[A] (P)-1, (Q)-3, (R)-2, (S)-4

[B] (P)-1, (Q)-2, (R)-3, (S)-4

[C] (P)-1, (Q)-2, (R)-3, (S)-4

[D] (P)-4, (Q)-2, (R)-3, (S)-1

21. Modified atmospheric condition, generally used for storage of fruits, is

[A] oxygen 3%, carbon dioxide 3%

[B] oxygen 21%, carbon dioxide 0·03%

[C] oxygen 21%, carbon dioxide 3%

[D] oxygen 3%, carbon dioxide 0·03%

22. pH of honey is

[A] 2·3–2·9

[B] 3·2–4·2

[C] 5·6–6·9

[D] 7·0–8·1

23. Dun spoilage is seen in

[A] meat

[B] fish

[C] egg

[D] vegetables

24. Sauerkraut is a

[A] fermented vegetable

[B] fermented fruit juice

[C] dairy product

[D] meat product

25. Carbonated soft drinks (beverages) are packaged by using which one of the following packaging materials?

[A] PVC

[B] PET

[C] PS

[D] HDPE

26. Match the items in Group—I with the most appropriate items in Group—II :

Group—I	**Group—II**
(P) Ascorbic acid	1. Sugar
(Q) Phenylalanine	2. Chelate
(R) Dextrose	3. Amino acid
(S) Haemoglobin	4. Antioxidant

[A] (P)-4, (Q)-3, (R)-1, (S)-2

[B] (P)-4, (Q)-1, (R)-3, (S)-2

[C] (P)-3, (Q)-4, (R)-2, (S)-1

[D] (P)-4, (Q)-2, (R)-1, (S)-3

27. Carrot is a rich source of

[A] vitamin A

[B] vitamin B

[C] vitamin C

[D] vitamin D

28. Complete hydrolysis of cellulose gives

[A] D-ribose

[B] D-glucose

[C] L-glucose

[D] D-fructose

29. The important role of carotenoids in the human diet is their ability to serve as precursors of

[A] vitamin C

[B] vitamin D

[C] vitamin A

[D] vitamin K

30. Which vitamin is an example of sugar acids?

[A] Vitamin A

[B] Vitamin C

[C] Vitamin D

[D] Vitamin E

31. Fat bloom is the defect found in

[A] margarine

[B] chocolate

[C] ghee

[D] yogurt

32. The anti-nutritional factor present in fava beans is

[A] vicine

[B] cyanogen

[C] curcine

[D] gossypol

33. Which of the following is a PUFA?

[A] Stearic acid

[B] Linoleic acid

[C] Lauric acid

[D] Oleic acid

34. The degree of unsaturation of lipid is measured by

[A] saponification number

[B] iodine number

[C] saturation number

[D] Reichert-Meissl number

35. In fatty acid synthesis, acetyl-CoA carboxylase is inactivated by the process

[A] ribosylation

[B] glycosylation

[C] phosphorylation

[D] decarboxylation

36. The oxidized form of starch is

[A] dextrin

[B] dialdehyde starch

[C] starch phosphate

[D] starch sulfate

37. Which type of enzyme catalyzes the conversion of D-lactic acid to L-lactic acid?

[A] Oxidoreductase

[B] Transferase

[C] Isomerase

[D] Ligase

38. Roquefortine is found in

[A] cheese

[B] meat

[C] eggs

[D] fruits

39. The different molecular packing arrangements in crystals of fats such as margarines has been extensively studied by

[A] image analysis

[B] particle size analyser

[C] X-ray diffraction

[D] differential thermal analysis

40. Fat soluble vitamins include

[A] A and D

[B] A, D and C

[C] A, D, E and K

[D] B and C

41. Pungency in onion is due to the presence of

[A] allyl propyl disulphide

[B] diallyl disulphide

[C] isothiocyanate

[D] capsaicin

42. Enzyme coagulated milk product is

[A] dahi

[B] cheese

[C] chhana

[D] paneer

43. The sweetest sugar in fruit is

[A] fructose

[B] glucose

[C] galactose

[D] sucrose

44. Which of the following is produced by fermenting soya beans?

[A] Kimchi

[B] Sauerkraut

[C] Miso

[D] Longaniza de Pascua

45. The time required for a control agent to kill 90% of the microorganisms or spores in a sample under specified conditions is called

[A] D-value

[B] Z-value

[C] F-value

[D] Q-value

46. Thermostabilization of eggs by dipping in hot water is done to

[A] reduce rate of evaporation

[B] sterilize the egg

[C] give glossiness to the surface

[D] increase permeability of surface

47. As per FSSAI, minimum percentage of fruit juice in the product fruit crush is

[A] 10%

[B] 20%

[C] 25%

[D] 40%

48. _____ is the most commonly used solvent for oil extraction.

[A] Methanol

[B] Ethanol

[C] Hexane

[D] Propanol

49. Hydrolysis of triglycerides with alkali is called as

[A] rancidity

[B] saponification

[C] isomerization

[D] oxidative browning

50. As per FSSAI, minimum amount of milk fat in double toned milk should be

[A] 0·5%

[B] 1·5%

[C] 2·5%

[D] 3·5%

51. Furfural is an economic product commonly manufactured from which of the following processing wastes?

[A] Molasses

[B] Bagasse

[C] Corncobs

[D] Animal fat

52. A value '45' is indicative of a food with _____ glycemic index.

[A] low

[B] medium

[C] high

[D] very high

53. Which of the following colours is ***not*** permitted under the Food Safety and Standards Act?

[A] Carmosine

[B] Indigo carmine

[C] Sunset yellow

[D] Rhodamine

54. Which of the following steps is ***not*** a part of black tea processing?

[A] Withering

[B] Fermentation

[C] Rolling

[D] Winnowing

55. Theobromine is primarily identified in

[A] tea

[B] coffee

[C] cocoa

[D] vanilla

56. Pasta products are prepared from

[A] hard wheat

[B] soft wheat

[C] durum wheat

[D] buckwheat flour

57. Action of food acids on cans results in

[A] hard swell

[B] soft swell

[C] hydrogen swell

[D] nitrogen swell

58. The temperature dependency of the viscosity of a fluid is related to a mathematical relation known as

[A] Fourier equation

[B] power law

[C] Arrhenius equation

[D] Planck's equation

59. Cavitation bubbling takes place during

[A] solvent extraction

[B] high pressure extraction

[C] ultrasound extraction

[D] PEF assisted extraction

60. Nusselt number in convective heat transfer is equivalent to which of the following in convective mass transfer?

[A] Prandtl number

[B] Schmidt number

[C] Sherwood number

[D] Reynolds number

61. Use of break rolls is most common in

[A] wet milling of corn

[B] wheat milling

[C] pulse milling

[D] dry milling of corn

62. The process of drying, in which ice is directly converted into vapour, is known as

[A] cabinet drying

[B] vacuum drying

[C] sublimation

[D] tunnel drying

63. The velocity of fluid in a pipe A of diameter D is v m/s. The pipe is connected with another pipe B of diameter $2D$. Reynolds number in pipe A in relation to pipe B is

[A] same

[B] half

[C] double

[D] triple

64. Loss of nutrients during thermal processing of food is guided by an equation of which of the following orders?

[A] Zero

[B] First

[C] Second

[D] Poly

65. The amount of moisture in a food at the end of the constant rate period of drying is called

[A] bound water

[B] monolayer value of moisture

[C] total moisture

[D] critical moisture content

66. Helical screw agitator is used for

[A] mixing highly viscous pastes

[B] blending immiscible liquids

[C] mixing liquids at very high temperature

[D] mixing liquids at very low temperature

67. In high pressure processing, the food is subjected to elevated pressures up to

[A] 100 atm

[B] 25 psi

[C] 100 kPa

[D] 900 MPa

68. High-intensity or power ultrasound applications tend to use which of the following respective frequencies and energies?

[A] Below 100 kHz with above 10 W/cm^2

[B] Above 100 kHz with below 10 W/cm^2

[C] Below 100 kHz with above 1 W/cm^2

[D] Above 1 MHz with above 10 W/cm^2

69. Choose the form of glucose in which it is stored in animals.

[A] Starch

[B] Cellulose

[C] Glycogen

[D] Dextrin

70. Which of the following is ***not*** an omega–3 fatty acid?

[A] α-Linolenic acid

[B] Stearidonic acid

[C] Eicosatetraenoic acid

[D] Linoleic acid

71. In naturally existing unsaturated fatty acids, the double bonds are in the conformation of

[A] trans-conformation

[B] cis-conformation and trans-conformation alternatively

[C] cis-conformation

[D] a blend of cis-conformation and trans-conformation

72. Myoglobin contains a porphyrin ring with which of the following at its center?

[A] Iron

[B] Magnesium

[C] Cobalt

[D] Sodium

73. Which of the following diseases occurs due to the deficiency of vitamin D?

[A] Anaemia

[B] Goitre

[C] Ricket

[D] Beriberi

74. Which one of the following is ***not*** a fermented product?

[A] Cheese

[B] Curd

[C] Yogurt

[D] Paneer

75. Water or food contaminated with human feces is the reason for

[A] perfringens food poisoning

[B] intestinal cryptosporidiosis

[C] *E. coli* infection

[D] cyclosporiasis

76. Which of the following concepts is accepted as a minimum process for inactivation of *C. botulinum* in canned foods?

[A] 2D

[B] 12D

[C] 15D

[D] 9D

77. Withering, rolling, fermentation and drying are the processing steps of

[A] coffee

[B] tea

[C] beer

[D] wine

78. During cheese production, the cutting of curd is done to

[A] trap the acid in curd particles

[B] improve the rennet activity

[C] remove the whey

[D] enhance the yield

79. In low-acid foods, the main purpose of thermal processing is the destruction of

[A] yeast

[B] bacteria

[C] mould

[D] bacteria, yeast and mould

80. The application of combinations of existing and novel preservation techniques in order to eliminate the growth of microorganisms is called

[A] pasteurization technique

[B] osmotic dehydration

[C] ohmic heating

[D] hurdle technology

81. Dockage refers to the material which includes

[A] chaff, stones, weed seeds, straw, stalks etc.

[B] polished rice

[C] cleaned paddy

[D] sound grains with desired moisture content

82. The beginning of the milling process of wheat involves

[A] reduction rolls

[B] break rolls

[C] smooth rolls

[D] rubber rolls

83. The outermost layer of endosperm is called

[A] cob

[B] pericarp

[C] endodermis

[D] aleurone

84. The legal standard for standardized milk is

[A] 4·5% fat and 8·5% SNF

[B] 4·5% fat and 9% SNF

[C] 1·5% fat and 8·5% SNF

[D] 3% fat and 8·5% SNF

85. According to FSSAI, which of the following milks must be packed under aseptic conditions in hermetically sealed containers?

[A] LTLT milk

[B] Homogenized milk

[C] UHT milk

[D] HTST milk

86. Which of the following statements is ***true***?

[A] Zein is alcohol soluble and classified as prolamin

[B] Zein is water soluble and classified as hordein

[C] Zein is alcohol soluble and classified as gliadin

[D] Zein is acid soluble and classified as gluten

87. A clear product which is free from any cellular matter obtained from clarified fruit juice is called

[A] cordial

[B] crush

[C] fruit syrup

[D] squash

88. The minimum total soluble solid in squash should be

[A] 40%

[B] 55%

[C] 65%

[D] 30%

89. Which of the following is a manufacturing process that involves forcing base metal through a pre-shaped die to create objects with a specific shape and profile?

[A] Pasteurization

[B] Roasting

[C] Extrusion

[D] Drying

90. Benzoic acid is ***not*** used in which of the following food products?

[A] Chemical leavened products

[B] Yeast leavened products

[C] Fruit beverages

[D] Fruit products

91. In edible oil refining process, the free fatty acids are removed by

[A] bleaching

[B] degumming

[C] neutralization

[D] distillation

92. How many cocoa beans are there in the average fruit pod?

[A] 2–4

[B] 10–12

[C] 20–40

[D] 60–80

93. Which of the following is used as a primary packaging material for butter?

[A] Parchment paper

[B] Wax paper

[C] Oiled paper

[D] Kraft paper

94. The number of layers, used in the manufacturing of Tetra Pak, is

[A] 9

[B] 3

[C] 6

[D] 5

95. A wet food product contains 70% water. After drying, it is found that 80% of original water has been removed. The mass of water removed per kilogram of wet food is

[A] 0·56 kg

[B] 0·80 kg

[C] 0·70 kg

[D] 0·96 kg

96. Lyophization is also known as

[A] spray drying

[B] vacuum drying

[C] freeze drying

[D] drum drying

97. The size reduction by rubbing or scrubbing a material between two hard surfaces is called

[A] impact

[B] compression

[C] attrition

[D] shear

98. If the thermal conductivity of steel is 16·37 W/m °C, then find the rate of heat loss through a stainless steel slab 10 cm thick which is maintained at 100 °C on the hot side and 30 °C on the cold side.

[A] 11·459 kW/m^2

[B] 111·675 kW/m^2

[C] 34·56 kW/m^2

[D] 23·49 kW/m^2

99. The door to a refrigerated room is 3·048 m high and 1·83 m wide. It is opened and closed at least five times each hour and remains open for at least 1 min at each opening. Calculate the refrigeration load due to the door opening if the room is maintained at 0 °C and ambient temperature is 29·4 °C.

[A] 30·9 MJ

[B] 35·58 MJ

[C] 76·89 MJ

[D] 45·85 MJ

100. The energy required in grinding large solid particles is inversely proportional to the function of which of the following particle properties?

[A] Strength

[B] Shape

[C] Density

[D] Diameter

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

★ ★ ★