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Question Booklet Alpha Code

A

	Question Booklet Sl. No.
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A

Total Number of Questions : 100

Time : 90 Minutes

Maximum Marks : 100

**INSTRUCTIONS TO CANDIDATES**

1. The Question Paper will be given in the form of a Question Booklet. There will be four versions of Question Booklets with Question Booklet Alpha Code viz. **A, B, C & D.**
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the Question Booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a Question Booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same alpha code.
6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the Question Booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him/her contains all the 100 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the Question Booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices **(A), (B), (C)** and **(D)** having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

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1. Which among the following is/are the non-protein nitrogenous compound(s) present in fish ?
  - i. ammonia
  - ii. urea
  - iii. trimethyl amine oxide
  - iv. purines

A) i and ii                                  B) iii and ii  
 C) all of the above                                  D) none of the above
2. Actin, myosin and troponin are which type of protein ?
 

A) stroma    B) myofibrillar  
 C) sarcoplasmic    D) none of the above
3. The main reason for fish muscle to be relatively softer is due to the lower content of which among these ?
 

A) pyrimidine                  B) collagen                  C) myogen                  D) myosin
4. Squalene is not produced by
  - i. algae
  - ii. carp
  - iii. shark
  - iv. tuna

A) i and ii    B) iii  
 C) ii and iii    D) none of the above
5. Select an example for lean fish.
 

A) cod    B) mackerel                          C) tuna    D) salmon
6. What is the amount of stroma protein in teleost fish ?
 

A) 16 – 22%                          B) 65 – 75%                          C) 2 – 3%    D) 12 – 15%
7. Which among the following is a water soluble vitamin present in fish ?
  - i. Riboflavin
  - ii. Niacin
  - iii. Pyridoxine
  - iv. Cyanocobalamin

A) All of the above    B) i and ii                          C) ii and iii                                  D) iii and iv

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8. Select the false statement(s) from the following.

- i. Fishes are rich in PUFA.
- ii. In general marine fishes have lesser  $\omega$ 3 fatty acids in comparison with fresh water fishes.
- iii. High content of PUFA increases the shelf life of fish.
- iv. Fishes do not require PUFA in their diet.

- A) ii
- B) ii and iii
- C) iii and iv
- D) all of the above

9. Select the correct statement(s) from the following.

- i. Fish is a good source of protein.
- ii. Fish is a good source of carbohydrate.
- iii. Fish is very low in water content.
- iv. Fish has a very high content of stroma protein.

- A) i and ii
- B) i
- C) i and iv
- D) i and iii

10. Fish protein is a very rich source of which one of these essential amino acid that is very limited in vegetable protein ?

- A) alanine
- B) cysteine
- C) glycine
- D) lysine

11. In fishes 'death stiffening' starts from which portion ?

- A) tail
- B) head
- C) belly
- D) dorsal side

12. Which one of these killing method(s) accelerate the onset of rigor in fish ?

- i. stunning
- ii. bleeding
- iii. hypothermia
- iv. poisoning

- A) i and ii
- B) i and iii
- C) i and iv
- D) iv

13. Which of these acids are responsible for the rapid reduction of pH of tissue fluids after the death of fish ?

- i. Lactic acid
- ii. Phosphoric acid
- iii. Oleic acid
- iv. Stearic acid

- A) i and ii
- B) ii and iii
- C) iii and iv
- D) i and iv

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14. Select the end product of enzymatic breakdown of adenosine triphosphate in fish muscle after death.  
 A) inosine                      B) hypoxanthine      C) uric acid                      D) creatine
15. Fishy smell in marine fish is due to the compound  
 A) trimethyl amine oxide                      B) creatine  
 C) inosine monophosphate                      D) hypoxanthine
16. Peroxide value indicates which kind of spoilage in fish ?  
 A) enzymatic                      B) microbial                      C) oxidative                      D) physical
17. Microbial spoilage of fish under cold conditions is generally caused by the genus  
 A) *Salmonella* sp.                      B) *Bacillus* sp.  
 C) *Acinetobacter* sp.                      D) *Staphylococcus* sp.
18. 'K' value of fish is used for the accurate prediction of which among the given spoilage ?  
 A) microbial spoilage                      B) enzymatic spoilage  
 C) oxidative spoilage                      D) all three
19. The NPN content is more in elasmobranchs than in teleosts due to the high amount of which of the following compounds ?  
 A) Urea                      B) Purine                      C) Pyrimidine                      D) TMA
20. Given below is the breakdown process of fish during rigor mortis. Select the missing intermediate compounds.  
 proteins → proteoses → ..... → polypeptides → ..... → Ammonia  
 A) Peptones and uric acid                      B) Peptides and uric acid  
 C) Peptides and ketones                      D) Peptones and amino acids
21. In Colombo curing, which chemical acts as preservative ?  
 A) Citric acid                      B) Acetic acid                      C) Tartaric acid                      D) Lactic acid
22. Which of the following statement is/are correct about drying of fish ?  
 i. The lower the relative humidity, the greater the drying rate.  
 ii. Rotary drum dryer is suitable for drying big fishes.  
 iii. Dun spoilage is caused by halophilic bacteria.  
 iv. Rancidity is a defect found in dried fish  
 A) only i and iv                      B) only i and iii                      C) only i, ii and iv                      D) only iii and iv

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23. Which chemical found in smoked fish has carcinogenic effect on humans ?  
A) Acenaphtene      B) Benzopyrene      C) Xylene      D) Ascorbic acid
24. 'More heat needed to be extracted to turn the bulk of the water to ice, in the second stage of freezing. So the temperature falls in a few degrees only'. This stage is referred as  
A) period of crystallisation      B) stage of super cooling  
C) period of thermal arrest      D) stage of vapour compression
25. 'Direct conversion between the solid and gaseous phase of water' is the basic principle of a given preservation technique. Find out the method.  
A) Retorting      B) Cryogenic freezing  
C) Individual quick freezing      D) Freeze drying
26. Canning has different steps. From the given options pick the one with correct sequence.  
A) exhausting – blanching – seaming – retorting  
B) blanching – seaming – exhausting – retorting  
C) blanching – exhausting – seaming – retorting  
D) exhausting – retorting – blanching – seaming
27. Which of the following statement is/are correct about quick freezing ?  
i. The ice crystals formed are very small.  
ii. The ice crystals formed are comparatively large.  
iii. Resulting in reduced drip loss.  
iv. Damage to the cell is high.  
A) only i and iv      B) only i and iii      C) only ii and iii      D) only ii and iv
28. Salting is a common method for fish preservation. In salting, the basic process that helps in achieving preservation is  
A) De-mineralisation      B) Maillard reaction  
C) Evaporation      D) Osmosis
29. In 'irradiation', different kinds of radiations are used for preservation. In the given options which has the highest penetrating power ?  
A) Alpha      B) Beta      C) Gamma      D) UV

A

30. Freeze drying is a preservation method. Which of the following statement is/are true about freeze dried products ?
- Material does not shrink and retain original size.
  - Materials are porous and brittle.
  - Heat damage and nutrient loss is very less.
  - When soaked it absorbs upto 95% of the original water content.
- A) All the above    B) Only i, ii and iii    C) Only i, ii and iv    D) Only ii and iii
31. Icing is a common method of fish preservation. Which of the given actions is/are occurring during icing ?
- enzyme action is slowed down
  - temperature of fish is lowered to  $-3$  degree C
  - ice melts by absorbing heat from fish
  - bacterial activities are reduced
- A) all the above    B) only i, ii and iii    C) only ii and iv    D) only i, iii and iv
32. Solid form of carbon dioxide is referred as
- A) gel ice    B) flake ice    C) dry ice    D) wet ice
33. In ideal icing practice, ice and fish are put in alternative layers. Which of the following statement is/are true about this method ?
- the bottom layer should be fish and top layer should be ice.
  - the height of the fish ice mixture should not exceed 1 metre.
  - the ice and fish ratio is 1 : 1.
- A) only ii and iii    B) only i and ii    C) only i and iii    D) all the above
34. From the given methods of icing and storage in fishing vessels, which is the most economical in terms of space ?
- A) heaping    B) boxing    C) bulking    D) shelving
35. Which of the following statement is incorrect about RSW system ?
- more fishes can be stored per unit volume
  - no pressure is exerted on fishes
  - temperature cannot be reduced below 0 degree C
  - penetration of salt occur during preservation





45. Packing of processed cans in hot condition causes  
 A) Stack burning B) Hydrogen swell  
 C) Under exhausting D) None of these
46. The middle layer in a retort pouch is  
 A) PP B) PE C) Aluminium D) PES
47. The precipitated protein found in canned fish is termed as  
 A) Softening B) Curd C) Honeycombing D) None of these
48. The slope of TDT curve  
 A) Z value B) D value  
 C) K value D) All of the above
49. Overfilling of can with solid could  
 A) No change in heat penetration B) Enhance heat penetration  
 C) Retard heat penetration D) None of the above
50. Covering the inside of the tin container with an inert material to prevent contact of food material with the metal  
 A) Lacquering B) Polishing C) Setting D) Coating
51. The faster the freezing process  
 A) Smaller the size of ice crystals B) Bigger the size of ice crystals  
 C) Greater nucleation rate D) Both A and C
52. Cold storage temperature  
 A)  $-20^{\circ}\text{C}$  B)  $20^{\circ}\text{C}$  C)  $10^{\circ}\text{C}$  D)  $-10^{\circ}\text{C}$
53. Application of thin layer of ice to the surface of frozen product  
 A) Chilling B) Blanching C) Glazing D) Poaching
54. The most commonly used freezer for bulk freezing on board  
 A) Vertical plate freezer B) Horizontal plate freezer  
 C) Spiral belt freezer D) Cryogenic freezer
55. Operating temperature of IQF freezer  
 A)  $-10^{\circ}\text{C}$  B)  $-18^{\circ}\text{C}$  C)  $-20^{\circ}\text{C}$  D)  $-40^{\circ}\text{C}$

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56. Choose a refrigerant used in immersion freezers from the following.  
A) Brine                      B) Ammonia                      C) Freon                      D) All the above
57. Tough texture in frozen stored products is due to  
A) Fat oxidation                      B) Protein denaturation  
C) Discolouration                      D) None of the above
58. The point within the product which has the warmest temperature at the end of freezing process  
A) Thermal centre    B) Centre point    C) Core                      D) None of these
59. The difference between the initial and final temperature of frozen product divided by the time taken for freezing  
A) Freezing time                      B) Freezing zone  
C) Freezing rate                      D) Freezing stage
60. The freezing time depends on  
A) Initial and final temperature                      B) Quantity of heat to be removed  
C) Shape of the product                      D) All of the above
61. Which among the following is a wrong statement regarding fish packaging ?  
A) Protect the product against contamination  
B) Protect the product against damage  
C) Packaging material should not be necessarily an inert material  
D) Packaging is an external means of preservation of the product
62. A package for canned fish  
A) Should be hermetically sealable  
B) Thermally non-conductive  
C) Cannot withstand high pressure processing  
D) Cannot withstand high temperature processing
63. HDPE stands for  
A) High Density Poly Ester  
B) Highly Durable Plastic Ethylene  
C) High Density Poly Ethylene  
D) Highly Durable Poly Ethylene

A

64. Which among the following packaging material is heat resistant ?  
A) HDPE                      B) LDPE                      C) Polystyrene                      D) Craft Paper
65. A primary packaging material for frozen fish should  
A) Become brittle at cold temperature  
B) Deteriorate in cold temperature  
C) Prevent moisture loss  
D) Not be impervious to oxygen and gases
66. \_\_\_\_\_ is not a biodegradable packaging material.  
A) Grease proof paper                      B) LDPE  
C) Parchment paper                      D) Duplex cartons
67. Vacuum packaging is most suited for  
A) Products with high fat content  
B) Products with high moisture content  
C) Products with high protein content  
D) Products with high fibre content
68. Master carton is generally  
A) Secondary or Tertiary packaging material  
B) Non biodegradable  
C) Primary packaging material  
D) A type of plastic
69. MAP is  
A) Micro Aerated Packaging                      B) Micro Atmosphere Packaging  
C) Modified Aerated Packaging                      D) Modified Atmosphere Packaging
70. Identify the wrong statement.  
A) A label in a packaging helps in providing information about the product inside  
B) Label displays Manufacturer's address  
C) Label contains net weight of the product  
D) Label helps in preventing product contamination

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71. The method used for production of fishmeal from fishes with high fat content
- A) Wet rendering  
B) Canadian process  
C) Viobin process  
D) Dry rendering
72. A by-product obtained in the process of wet rendering
- A) Fish body oil  
B) Fish protein concentrate  
C) Fish amino acid  
D) Fish silage
73. FPC stands for
- A) Food grade Protein Concentrate  
B) Fish Protein Concentrate  
C) Fish Protein Concoction  
D) Food Protein Capsule
74. While making fish silage with formic acid, the pH of the solution is maintained nearly at
- A) 6  
B) 7  
C) 4  
D) 11
75. Isinglass is made from
- A) Scale of fish  
B) Swim bladder of fish  
C) Skin of fish  
D) Bones of fish
76. Surimi is a
- A) Minced meat product  
B) Acidified meat product  
C) Fermented meat product  
D) Breaded and battered product
77. Identify the correct statement.
- A) Sodium alginate is used as an impression making material in dentistry  
B) Algin is a protein supplement  
C) Algin is found in the cell walls of red algae  
D) Algin is used for the preparation of culture media, in bacteriology
78. \_\_\_\_\_ is a breaded and battered product.
- A) Fish momos  
B) Fish finger  
C) Fish soup powder  
D) Fish pickle
79. Choose the right ingredient for preparation of fish pickle from the following.
- A)  $\text{CH}_3\text{COOH}$   
B)  $\text{H}_2\text{SO}_4$   
C)  $\text{HNO}_3$   
D)  $\text{KMnO}_4$

A

80. Dumping of shrimp shell waste into open waters cause serious ecological issues. Production of which byproduct is a solution to this issue ?  
A) Pickle                      B) Chitosan                      C) Isinglass                      D) Ambergris
81. The method of quality assessment of seafood through human senses is called  
A) Bio-chemical evaluation                      B) Microbial evaluation  
C) Chemical evaluation                      D) Sensory evaluation
82. Which among the following bacteria is/are non-pathogenic ?  
i. Vibrio cholera  
ii. Salmonella  
iii. Lactobacillus  
iv. Shigella  
A) Only iv                      B) All of the above i, ii, iii and iv  
C) Only iii                      D) Only i, ii and iii
83. Which of the following statement is/are true about the Escherichia coli bacteria ?  
i. Gram negative  
ii. Rod shaped  
iii. Primary habitat is intestinal tract of humans  
iv. Indicator of faecal contamination  
A) Only iv                      B) All of the above i, ii, iii and iv  
C) Only i and iii                      D) Only i, ii and iii
84. Which of the following statement is not correct about Salmonella bacteria ?  
A) Causes enteric fever                      B) Can survive freezing temperature  
C) Gram negative                      D) Spore forming
85. The bacteria which is a most useful indicator of personal hygiene for fish handlers is  
A) Staphylococcus                      B) Escherichia coli  
C) Clostridium                      D) Faecal streptococci
86. Which growth media is used for the bacteriological analysis of Escherichia coli ?  
A) Nutrient agar                      B) Baird-parker agar  
C) Tergitol 7 agar                      D) Lactose broth

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87. Which of the following statement is/are correct about the Shigella bacteria ?
- i. Man is the only natural host of Shigella
  - ii. Associated with bacillus dysentery
  - iii. Can survive temperature above 60 degrees Celsius
  - iv. Multiply in gut and produce ulceration
- A) Only iv    B) All of the above i, ii, iii and iv  
C) Only i and iii                                      D) Only i, ii and iv
88. Which among the following statement is/are correct about Vibrio parahaemolyticus bacteria ?
- i. Can grow beyond 44 degree Celsius
  - ii. Cause diarrhoea
  - iii. Facultatively anaerobic
  - iv. Halophilic
- A) Only ii    B) All of the above i, ii, iii and iv  
C) Only ii, iii and iv                                D) Only i, ii and iv
89. Which among the following procedures can prevent adulteration of seafoods with lubricants and chemicals ?
- i. Labelling
  - ii. Separate chamber for storage room
  - iii. Separate entrance for storage room
- A) Only i     B) All of the above i, ii and iii  
C) Only ii and iii                                     D) Only i and ii
90. Find the odd one out.
- A) USFDA    B) FSSAI  
C) Codex Alimentarius                            D) ISO 9000
91. The chlorination level of water used for the manufacture of ice in seafood plants is
- A) Below 2 ppm                                      B) 100 ppm  
C) 50 ppm    D) Above 20 ppm
92. The chlorination level of water used for foot dip in seafood plants is
- A) Below 2 ppm                                      B) 100 ppm  
C) 50 ppm    D) Above 20 ppm

A

93. The ideal core temperature of frozen sea food is  
A) –2 Degree Celsius                              B) – 18 Degree Celsius  
C) – 4 Degree Celsius                             D) 4 Degree Celsius
94. Evisceration, removal of gills and bleeding usually practised on board is for  
A) Small fish              B) Shrimp              C) Big fish              D) Crab
95. Which among the following is not a chemical hazard in HACCP ?  
A) Histamine              B) Ciguatoxin              C) Pesticides              D) Insects
96. Export Inspection Agency (EIA) was established under which Act ?  
A) Export (Quality Control and Inspection) Act, 1962  
B) Export (Quality Control and Inspection) Act, 1963  
C) Export (Quality Control and Inspection) Act, 1965  
D) Export (Quality Control and Inspection) Act, 1966
97. Food Safety and Standards Authority of India (FSSAI) was established under which Act ?  
A) Food Safety and Standards Act, 2006  
B) Food Safety and Standards Act, 2008  
C) Food Safety and Standards Act, 2007  
D) Food Safety and Standards Act, 2005
98. Hazard Analysis and Critical Control Points (HACCP) was proposed by  
A) EU                      B) CIFT                      C) USFDA                      D) CMFRI
99. The full form of SSOPs is  
A) Sanitation Standard Operating Procedures  
B) Sampling Standard Operating Procedures  
C) State Standard Operating Procedures  
D) Standard Sanitation Operating Procedures
100. Air curtains are installed at all entry points in seafood plants to exclude  
A) Rat                      B) Fly                      C) Squirrel                      D) Lizard

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Space for Rough Work



A