

087/21

Question Booklet Alpha Code

A

	Question Booklet Sl. No.
--	--------------------------

A

Total Number of Questions : 100	Time : 75 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.



087/21

A

-2-

1. North west coast of India accounts for almost 90% of the total _____ landings in India.
A) Demersal finfish
B) Elasmobranch
C) Non-penaeid prawn
D) Lobster
2. "Choodavalai" with cod mesh size of 8 mm operated from plank built boats fitted with outboard engines along Kerala and Karnataka coasts since 1985, is a type of
A) Gill net
B) Ring seine
C) Mini trawl
D) Cast net
3. Articles _____ of the UNCLOS prescribe the area extending up to 200 nautical miles (_____ kms) off the coast as Exclusive Economic Zone.
A) 50-65; 325
B) 55-65; 350
C) 55-75; 370
D) 65-75; 360
4. Fishery of _____ are characterised by high interannual fluctuations due to fishing or natural factors.
A) Small pelagics
B) Large pelagics
C) Demersal fishes
D) Crustaceans
5. Which one of the following is a carrageenan yielding seaweed ?
A) *Gracilaria corticata*
B) *Caulerpa racemosa*
C) *Gelidiella acerosa*
D) *Kappaphycus alvarezii*
6. _____ is obtained at a level of fishing effort that is lower than that required to maximize yield in weight.
A) Maximum Economic Yield
B) Maximum Sustainable Yield
C) Economic Break-even Point
D) Maximum Fishing Employment
7. Fishery of _____ is a role model for ecosystem based fisheries management and is considered as the world's best managed fishery.
A) *Thunnus albacares*
B) *Thunnus maccoyii*
C) *Clupea harengus of north east Atlantic*
D) *Gadus chalcogrammus*
8. Advantages of implementation of minimum legal size include
A) Prevention of growth overfishing
B) Promotion of ethical and responsible fisheries
C) Both (A) and (B)
D) None of the above

087/21

9. Which of the following scheme of the Government of India has the target of increasing fish production to 22 million metric tons by 2024-25 ?
- A) Fisheries and Aquaculture Infrastructure Development Fund
 - B) Matsya Samridhi
 - C) Pradhan Mantri Matsya Sampada Yojana
 - D) Blue Revolution
10. _____ is an oceanographic payload carried by IRS P4 capable of retrieving chlorophyll intensity, used for the identification of Potential Fishing Zones.
- A) OCM
 - B) MSMR
 - C) LISS
 - D) WiFS
11. Which among the following is Froude's number ?
- A) Ratio between the aft perpendicular and forward perpendicular of a fishing vessel
 - B) Ratio between the water line and load water line of a fishing vessel
 - C) Ratio between the speed in knots and the square root of the length of water line in feet of a fishing vessel
 - D) Ratio between the displacement tonnage and dead weight tonnage of a fishing vessel
12. Which among the following groups are correct with regard to the traditional use of 'Catamaran' as an indigenous fishing vessel ?
- A) Kerala, Tamil Nadu, Andhra Pradesh, Orissa
 - B) Karnataka, Kerala, Tamil Nadu, Andhra Pradesh
 - C) Maharashtra, Kerala, Andhra Pradesh, Orissa
 - D) Maharashtra, Karnataka, Kerala, Tamil Nadu
13. During the first stage of the mechanization of fishing boats in India, a few indigenous fishing boats were found to be suitable for mechanization with a little modification. They were successfully mechanized under the guidance of FAO experts. Which among the following was found not suitable for mechanization ?
- A) Kakinada Navas of Andhra Pradesh
 - B) Rampani Boats of Karnataka
 - C) Tuticorin Boats of Tamil Nadu
 - D) Batchari Boats of West Bengal

A

14. The lines representing the sections of ships or the boundaries of waterplanes are in general fair curves which cannot be represented by a single mathematical equation. To apply various arithmetical methods, it is assumed that the curved boundaries consist of a series of parabolic curves. Which among the following methods is mainly used for specific calculations such as stability ?
- A) Trapezoidal rule
B) Simpson's rule
C) Tchebycheff's rule
D) Midpoint rule
15. The power available in the crank shaft of an engine after deducting the frictional loss in the working of an engine is known as
- A) Shaft horse power
B) Effective horse power
C) Indicated horse power
D) Brake horse power
16. The form is used to describe the shape of ship's hull. Comparison of one ship's form with another is made using a number of coefficients. The ratio between the actual volume of the underwater form to the volume of a block with length equal to the length between perpendiculars, breadth equal to the breadth of the vessel and depth equal to the draft of the vessel is known as
- A) Mid ship section area coefficient
B) Block coefficient
C) Prismatic coefficient
D) Waterplane area coefficient
17. Choose the odd one among the following otter boards
- A) Suberkrub
B) Rectangular flat
C) Rectangular curved
D) V-form
18. If 9000 m of a single yarn weigh 10g, which among the following is the correct designation of this yarn ?
- A) 10 Tex
B) 10 Td
C) 10 Nm
D) 10 Ne
19. The triangular piece of webbing used in a trawl to give a smooth catenary curve to the head rope of the trawl is known as
- A) Overhang
B) Quarter
C) Flapper
D) Jib

A

087/21

20. What is the correct cutting rate to make webbing with 100 meshes on the top and 40 meshes at the bottom and with 90 meshes depth, if the tailoring is done only on one side ?
- A) 1 N or P cut : 4 Bar cut
B) 2 N or P cut : 4 Bar cut
C) 1 T or M cut : 4 Bar cut
D) 2 T or M cut : 4 Bar cut
21. In the Redditch scale of hook numbering system the number designating the finest hook is
- A) 15
B) 17
C) 18
D) 16
22. In Navigation, fixing present position or anticipated future position from a previous position, using known directions and distances is known as
- A) Piloting
B) Celestial Navigation
C) Radio Navigation
D) Dead Reckoning
23. If a vessel engaged in day fishing hoist the signal flag 'P', what is the message conveyed ?
- A) My net has come fast upon an obstruction
B) I am hauling net
C) Keep clear of me I am engaged in pair trawling
D) I am shooting net
24. Which among the following is the International Code signal of distress ?
- A) Alfa Romeo (AR)
B) November Charlie (NC)
C) Alfa Sierra (AS)
D) Charlie Quebec (CQ)
25. The length of warp released in bottom otter trawling depends on the depth of the fishing ground and the nature of the sea bottom. The ratio of depth of the fishing ground and the warp released is known as
- A) Aspect ratio
B) Scope ratio
C) Slip ratio
D) None of the above
26. Fresh water fishes contain a high level of _____ than that of in the marine fishes.
- A) Omega 3 fatty acids
B) Myosin
C) Tropomyosin
D) Omega 6 fatty acids

A

27. The canning process in which the release of gases from fish tissue and inhibit enzymatic reactions is achieved by the process called
- A) Double seaming B) Sodium sulphate
C) Blanching D) Pressure steaming
28. The preservative value of smoking is characterized by the _____ content present in the woods.
- A) Phenolic B) Resinous C) Carbon dioxide D) Acidic
29. The transportation of frozen fish by air Cargo is done by using
- A) Liquid nitrogen B) Air blast freezing
C) Solid carbon dioxide D) Brine freezing
30. Sorbic acid is used as a preservative to protect the fish from
- A) Bacterial spoilage B) Glazing
C) Rancidity D) Fungal spoilage
31. The compound responsible for the foul odour due to spoilage of marine fish
- A) Trimethylamine B) Trimethylamine oxide
C) Ammonia D) Pyridine
32. Onset of rigor mortis the changes of the muscle texture is due to
- A) ATP hydrolysis B) Trimethylamine
C) Creatine phosphate D) Autolysis
33. Which amino acid is responsible for meaty flavour in scombroid fishes ?
- A) Tryptophan B) Histidine C) Lysine D) Leucine
34. Isinglass has been prepared as a byproduct from
- A) Fish scale B) Fish skin C) Air bladder D) Fish Roe
35. What is the 'pit curing' of fish ?
- A) Wet salting B) Steam drying C) Freeze drying D) Hot smoking
36. Which of the following is not a descriptive test for quality assessment of raw fishes ?
- A) Market test B) Ranking method
C) Triangle test D) Quality index method

A

087/21

37. In TVB analysis, one of the following substance is considered as an excellent indicator for quality assessment of squids is
A) Trimethylamine B) Ammonia C) Dimethylamine D) NADH
38. The preventive measure is needed to be followed to reduce the effect of biotoxins and pathogens in live fish under HACCP
A) Avoid fishing in contaminated area
B) Ensure accuracy scale
C) Maintenance low-temperature
D) Candling
39. The autolysis in *post mortem* changes can reduce by _____ which helps in the quality and storage life of fatty fishes.
A) Evisceration B) Ice chilling C) Filleting D) Salting
40. Among the following fishes, the maximum shelf life is showed while it is stored in ice from temperate conditions
A) Sardine B) Mackerel C) Tilapia D) Pacu
41. Lakes that is rich in humic and organic substance are called
A) Eutrophic B) Mesotrophic
C) Dystrophic D) Oligotrophic
42. Miscellaneous assemblage of organisms growing upon free surfaces of object, submerged in water is called as
A) Seston B) Nekton C) Neuston D) Periphyton
43. Frustules made of silica are characteristic of
A) Euglenoids B) Diatoms
C) Desmids D) Coccolithophores
44. The phenomenon with High Nutrient and Low Chlorophyll (HNLC) is also known as
A) Edge effect B) Water Paradox
C) Cascade effect D) Antarctic Paradox
45. The Redfield ratio, the C : N : P ratio in Indian ocean is
A) 120 : 30 : 1 B) 106 : 16 : 1 C) 100 : 12 : 1 D) 132 : 22 : 1

A

46. As per the latest FAO data (FAO 2020) India's contribution on World aquaculture fish production is about
 A) 8.5% B) 15% C) 2.5% D) 25%
47. Which among the following statement is true ?
 Increase of temperature in the aquaculture pond causes
 i. Low oxygen solubility
 ii. High metabolic rate of cultured species
 iii. High oxygen solubility
 iv. High ammonia toxicity
 A) ii B) i and ii C) i, ii and iii D) i, ii and iv
48. Ideal C/N ratio used in biofloc technology
 A) 1 : 5 B) 15 : 1 C) 5 : 1 D) 1 : 15
49. Which among the following is an inorganic extractive cultured in IMTA ?
 A) Salmon B) Blue mussels
 C) Kelp D) Sea cucumber
50. Dolomite used for adjusting the pH/alkalinity in aquaculture pond is
 A) CaCO_3 B) MgCO_3 C) $\text{CaMg}(\text{CO}_3)_2$ D) Na_2CO_3
51. Water flow through the RAS in a hatchery is in the order of
 A) Culture tank – UV chamber – Biofilter – Mechanical filter
 B) Culture tank – Mechanical filter – UV chamber – Biofilter
 C) Culture tank – Biofilter – UV chamber – Mechanical filter
 D) Culture tank – Biofilter – Mechanical filter – UV chamber
52. Predominant mineral present in the acid sulfate soils
 A) Pyrite B) Calcite C) Magnetite D) Hematite
53. Black-lipped pearl oyster farming in India is at
 A) Vizhinjam B) Bengal
 C) Andaman and Nicobar Islands D) Lakshadweep Islands
54. How many distinct zoeal stages are there in the larval development of *Macrobrachium rosenbergii* ?
 A) 11 B) 32 C) 30 D) 5

A

087/21

55. Deficiency of which amino acid causes scoliosis/lordosis in fishes ?
A) Methionine B) Valine C) Tryptophan D) Tyrosine
56. Foam fractionator is used in the aquarium for the removal of
A) Organic compounds B) Inorganic compounds
C) Ammonia D) Dissolved inorganic compounds
57. Which of the following ornamental fishes produces non-sticky eggs ?
A) Melon barbs B) Banded gourami
C) Zebra fish D) All
58. Marine ornamental fish hatchery production developed in India for
A) *Amphiprionpercula* B) *Amphiprionsebae*
C) *Pomacentruspavo* D) All
59. Which among the following is not belongs to Chlorophyceae ?
i. Chlorella
ii. Chaetoceros
iii. Isochrysis
iv. Dunaliella
A) i and ii B) i and iv
C) ii and iii D) None of the above
60. Name the marine rotifer.
A) *Brachionusplicatilis* B) *Brachionuscalyciflorus*
C) *Brachionusrubens* D) *Daphnia magna*
61. Which among the following is the mode of action of probiotic in fishes ?
A) Competitive exclusion B) Production of inhibitory substances
C) Competition for nutrients D) All
62. Fresh water white spot disease in fishes is caused by
A) WSSV B) *Ichthyophthiriusmultifilis*
C) Oodinium D) *Ichthyobodonecator*
63. Tilapia Lake Virus (TiLV) belongs to the family
A) *Orthomyxoviridae* B) *Rhabdoviridae*
C) *Togaviridae* D) *Alloherpesviridae*

A

64. The concept of human health and animal health are interdependent and bound to the health of the ecosystem in which they exist is known as
- A) Disease triad B) Eco health
C) One health D) Sustainable health
65. Which among the following statement is true about the monoclonal antibody ?
- i. Batch to batch variability
ii. Expensive to produce
iii. Recognize only one epitope of an antigen
iv. Recognize multiple epitope of an antigen
- A) i and iii B) ii and iii C) i and ii D) All
66. Which among the following is an antifungal compound used in aquaculture ?
- A) Trifuralin B) Crystal violet
C) Malachite green D) All
67. Most promising fish and shrimp immunostimulant isolated from the yeast cell wall
- A) Chitin B) Peptidoglycan C) Laminaran D) Glucans
68. Preferred order of electron acceptors in bioremediation
- A) Iron, Nitrate, Sulfate, Oxygen, Carbon dioxide
B) Oxygen, Nitrate, Iron, Sulfate, Carbon dioxide
C) Carbon dioxide, Sulfate, Iron, Oxygen, Nitrate
D) Oxygen, Carbon dioxide, Nitrate, Iron, Sulfate
69. Which among the following is not true about SPF animal ?
- A) SPF status doesn't refer their susceptibility to infection or disease
B) Developed through a rigorous quarantine and disease screening process
C) Result from a specific breeding programme designed to increase resistance
D) All
70. Concentration of nitrite above 2 ppm in the culture tank can cause
- A) New tank syndrome
B) Air bubble disease
C) Brown blood disease
D) Acidosis

A

087/21

71. Two coins are tossed simultaneously. What is the probability of getting exactly one head ?
A) 0.25 B) 0.5 C) 0.75 D) 0
72. In which approach to probability the outcomes are equally likely to occur ?
A) Classical approach B) Subjective approach
C) Relative frequency approach D) Axiomatic approach
73. The chance that a ship safely reach a port is 0.20. What is the probability that out of 3 ships expected, no ship would arrive safely ?
A) 0.80 B) 0.512 C) 0 D) 0.488
74. Which among the following is true for a Poisson distribution ?
A) Mean = Variance B) Mean > Variance
C) Mean < Variance D) Mean = Standard deviation
75. If the points in a scatter diagram show a downward trend from the left top to the right bottom, the correlation is
A) Positive B) Negative
C) Zero D) None of the above
76. If correlation coefficient = 0.8, coefficient of determination is
A) 80% B) 8% C) 0.8% D) 64%
77. Sampling error is present in
A) Census survey
B) Sample survey
C) Both Census and Sample survey
D) Neither Sample nor Census survey
78. What is the critical value for a two-tailed hypothesis test on a population mean when level of significance is 5% and the population standard deviation is known ?
A) 2.58 B) 2.33 C) 1.96 D) 1.645
79. Large sample theory is applicable when the sample size is
A) More than 30 B) Less than 30 C) Equal to 30 D) Atleast 100

A

80. The Analysis of Variance (ANOVA) utilizes
A) Z test
B) t-test
C) Chi-square test
D) F-test
81. Fisheries extension is _____ type of education.
A) Informal
B) Formal
C) Non-formal
D) Unorganized
82. Fisheries extension is working in harmony with the _____ of people.
A) Culture
B) Customs
C) Habits
D) Rituals
83. The central element in learning situation is
A) Instructor
B) Teaching equipment
C) Learner
D) Subject matter
84. A scientific representation of the original with model, specimen and painting is known as
A) Objects
B) Mock-ups
C) Translide
D) Diorama
85. Which of the following statements is/are true about Audio Visual Aids ?
i. AV aids clarify the idea being presented.
ii. AV aids vitalize and make teaching more real.
iii. AV aids will not change the attitude or point of view of the farmers.
A) Only i and ii
B) Only i and iii
C) Only ii and iii
D) All of the above (i, ii, iii)
86. Among the extension teaching methods, to develop skill among the farmers _____ method is used.
A) Observation plots
B) Result demonstrations
C) Method demonstrations
D) National demonstrations
87. An outline of activities arranged for the efficient execution of the entire programme is
A) Project
B) Calendar of work
C) Plan of work
D) Action plan
88. In programme planning process the objectives of the programme are determined by
A) Villagers alone
B) Local leader alone
C) Villagers and local leaders
D) Villagers and extension staff

A

087/21

89. _____ is a quick appraisal method.
- A) Observation
B) Interview method
C) Questionnaire method
D) Participatory rural appraisal
90. _____ is viewed as a holistic approach to move beyond traditional crop production emphasis to include all land based activities.
- A) Farmer-First (FF) Model
B) Broad Based Agricultural Extension
C) Farming Systems Research and Extension (FSRE)
D) Circular Model Transfer of Technology
91. Which country stood at first in terms of fishery production ?
- A) India
B) China
C) Japan
D) US
92. When will people search harder to find substitutes for fish ?
- A) When the price of fish is high
B) When the taste of fish is too bad
C) When the price of chicken is less
D) When the supply of fish is high
93. Write the term to describe a practice in which indigenous knowledge of nature, originating with indigenous peoples, is used by others for profit, without authorization or compensation to the indigenous people themselves.
- A) PSM
B) Embargo
C) Bio Piracy
D) Patents
94. The agreement on the application of _____ sets out the basic rules for food safety and animal and plant health standards.
- A) Fishing subsidies
B) Sanitary and Phytosanitary measures
C) Bio Piracy
D) Production and Conservation
95. Name the term that indicates the maximum catch that can be extracted from a fish or other population in the long term.
- A) Maximum Production
B) Sustainable Production
C) Maximum Sustainable Yield
D) Blue Economy

A

96. What is Pier ?
- A) A raised structure in a body of water, typically supported by piles or pillars
 - B) A long, narrow structure that protects a coastline from the currents and tides
 - C) A platform to which ships are docked for loading and unloading
 - D) An enclosed area of water used for loading, unloading, building or repairing ships
97. What is the subject matter discussed in Section 22 of the Coastal Aquaculture Authority Act, 2005 ?
- A) Penalty
 - B) Power to remove difficulties
 - C) Protection of action taken in good faith
 - D) Power of Central Government to make rules
98. What is the name of the project implemented by the Government of Kerala with a view to increase inland fish production, create new employment opportunities through development of inland and brackish water aquaculture and value addition of aquaculture products ?
- A) Haritha Keralam
 - B) Matsya Samrudhi
 - C) Sea Ranching
 - D) Theeramythri
99. What is a Small Scale Industrial Unit as per the definition revised in July 2020 in India ?
- A) An enterprise having investment up to Rupees 25 lakhs
 - B) An enterprise having investment up to Rupees 5 crores
 - C) An enterprise having investment in plant and machinery or equipment which does not exceed Rs. 1 crore and turnover which does not exceed Rs. 10 crores
 - D) An enterprise having investment in plant and machinery or equipment which does not exceed Rs. 10 crores and turnover which does not exceed Rs. 50 crores
100. What is the coastal length of Kerala ?
- A) 551.5 Kms
 - B) 589.5 Kms
 - C) 700 Kms
 - D) 710 Kms
-

087/21

Space for Rough Work



A