

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

T. B. C. : CS – 11/12

Test Booklet Series

Serial No.

227448

TEST BOOKLET

O. C. S. Preliminary Examination
(FISHERIES SCIENCE)

D

Time Allowed : 2 Hours

Maximum Marks : 300

: INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF SAME SERIES ISSUED TO YOU.
2. ENCODE YOUR OPTIONAL SUBJECT CODE AS MENTIONED ON THE BODY OF YOUR ADMISSION CERTIFICATE AND ADVERTISEMENT AT APPROPRIATE PLACES ON THE ANSWER SHEET.
3. ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
4. You have to enter your Roll No. on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
5. This Test Booklet contains 120 items (questions). Each item (question) comprises four responses (answers). You will select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided, by using **BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. There will be negative markings for wrong answers. **25 percent of marks allotted to a particular item (question) will be deducted as negative marking for every wrong response (answer).**
8. Before you proceed to mark (darken) in the Answer Sheet the responses to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions in your **Admission Certificate**.
9. After you have completed filling in all your responses on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the *Answer Sheet* and the *Test Booklet* issued to you. You are allowed to take with you the candidate's copy/second page of the Answer Sheet, after completion of the examination, for your reference.

SEAL

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1. An initial dose of pituitary gland (per kg body weight) extract administered to the female brood fish is :
 - (a) 2-3 mg
 - (b) 5-8 mg
 - (c) 3-5 mg
 - (d) 5-10 mg
2. The first attempt at hypophysation in India was made by :
 - (a) Hussain
 - (b) Gerbiskii
 - (c) Hamid Khan
 - (d) Aschheim
3. "The cooled pellets are ground on corrugated rolls and the output sifted and graded" is :
 - (a) Bagging
 - (b) Pelleting
 - (c) Crumbling
 - (d) Grinding
4. In fish, spastic convulsions, depigmentation and fragmentation of erythrocytes are caused due to the deficiency of :
 - (a) Vit. B₁₂
 - (b) Biotin
 - (c) Niacin
 - (d) Thiamine
5. Formation of liquid-filled boils at the tip of uropods of shrimp is the specific sign of which of the following diseases ?
 - (a) Muscle necrosis
 - (b) Blisters disease
 - (c) Red disease
 - (d) Gregarine disease
6. The algal species that is responsible for fish kills in culture ponds is :
 - (a) Phormidium
 - (b) Oscillatoria
 - (c) Chlorella
 - (d) Ergasilus
7. The number of protozoans in a culture pond can be reduced by treating the pond waters with :
 - (a) Malathion
 - (b) Malachite green
 - (c) Glutaraldehyde
 - (d) Trichlorphon
8. In paddy-cum-carp culture, fish are stocked at the rate of :
 - (a) 4000-5000/ha
 - (b) 4000-6000/ha
 - (c) 6000-7000/ha
 - (d) 3000-4000/ha
9. The role of the binding agents in shrimp pelleted feed is :
 - (a) Disintegration of feed

- (b) Growth of fungi
(c) Prevention of disintegration of feed
(d) Supplementing minerals
10. In shrimp commercial feed, butylated hydroxyanisole is being used as :
(a) Antioxidant
(b) Binder
(c) Digestive enzyme
(d) Mineral
11. Spermatangial clusters are observed in which of these sea weeds ?
(a) *Hyponea musciformis*
(b) *Acanthophora spicifera*
(c) *Enteromorpha flexuosa*
(d) *Gelidiella acerosa*
12. Black lip pearl oyster is the common name for :
(a) *Lamellidens corrianus*
(b) *Lamellidens marginalis*
(c) *Pinctada margaritifera*
(d) *Pinctada fucata*
13. The average production of shrimp under extensive farming normally ranges from :
(a) 1.0 – 1.5 t/ha/crop
(b) 2.0 – 2.5 t/ha/crop
(c) 5.0 – 5.5 t/ha/crop
(d) 1.0 – 2.0 t/ha/crop
14. In sediment, when input of organic matter exceeds the supply of oxygen, anaerobic condition can develop. This reducing condition can be measured as :
(a) Action Potential
(b) Eddy Current
(c) Reduction Potential
(d) Redox Potential
15. Acidity on pond dykes can be controlled by :
(a) Arranging tiles on dykes
(b) Adding cowdung to water
(c) Acid resistant grass species
(d) Spraying H_2SO_4 on dykes
16. Imhoff cone is used to measure the quantity of :
(a) Settleable phospholipids
(b) Settleable solids
(c) Settleable plankton
(d) Settleable copepods
17. Normally the salinity of the sea water ranges from :
(a) 30-35 ppt
(b) 30-40 ppt
(c) 25-35 ppt
(d) 20-35 ppt
18. The food of protozoa larvae is :
(a) Artemia

- (b) Acetes species
(c) Egg custard
(d) Rotifers
19. The main purpose of establishment of a hatchery is :
(a) To improve the percentage of survival of hatchings
(b) To improve the percentage of the hatching of eggs
(c) To reduce the silt deposition in hapas
(d) To reduce the percentage of the hatching of eggs
20. The method adopted to avoid sliding in earthen culture ponds is :
(a) Fencing
(b) Sloping
(c) Turfing
(d) Tilling
21. In a culture pond, the platform like space present between the bund and the area occupied by water is called as :
(a) Core trench
(b) Berm
(c) Crown
(d) Dry slope
22. The ratio of catla, rohu and mrigal proposed by Alikunhi (1957) for composite fish culture is :
(a) 3 : 2 : 1
(b) 5 : 4 : 5
(c) 3 : 3 : 4
(d) 1 : 2 : 4
23. The largest brackish-water lake in India is :
(a) Pulicat Lake
(b) Kolleru Lake
(c) Chilka Lake
(d) Vembanand Lake
24. The scientist who made ecological classification of fishes in 600 B. C. is :
(a) Susreta
(b) Francis Day
(c) Kautilya
(d) Cuvier
25. The primary growth ring in the teleostean bony-ridge scale is called :
(a) Radius
(b) Annulus
(c) Focus
(d) Circulus
26. The fishing zone which has the maximum continental shelf area in the Indian EEZ is :
(a) North – East zone
(b) South – West zone
(c) North – West zone
(d) South – East zone

27. The most productive marine fishing (FAO) area is :
- (a) Western Indian Ocean
(b) North West Pacific
(c) South East Pacific
(d) North East Atlantic
28. Fishes that hide their brood in live bivalves are called :
- (a) Xerophils
(b) Speleophils
(c) Aerophils
(d) Ostracophils
29. The genus *Gazza* comes under the family of :
- (a) Gerreidae
(b) Leiognathidae
(c) Menidae
(d) Sciaenidae
30. The major fishing zone for the lesser sardines is :
- (a) North – East
(b) South – West
(c) North – West
(d) South – East
31. The river system that drains into the Arabian Sea is :
- (a) Mahanadi
(b) Cauvery
(c) Krishna
(d) Indus
32. The state having the longest coast line in India is :
- (a) Tamil Nadu
(b) Gujarat
(c) Andhra Pradesh
(d) Odisha
33. MSY represents :
- (a) An economic equilibrium
(b) Open-access equilibrium
(c) A biological equilibrium
(d) Bio-economic equilibrium
34. Choose the species which is fully marine :
- (a) *Parapenaeopsisstylifera*
(b) *Penaeusmonodon*
(c) *Fenneropenaeusindicus*
(d) *Metapenaeusdobsoni*
35. Which among the following is an introduced fish in India ?
- (a) Tilapia
(b) Catla
(c) Rohu
(d) Mrigal

36. A classic example of semelparity in fishes is :
- (a) Tunas
 - (b) Sardine
 - (c) Mackerel
 - (d) Pacific salmon
37. The accessory reproductive nidamental gland complex is absent in :
- (a) Octopus
 - (b) Cuttlefish
 - (c) Squid
 - (d) None of the above
38. Fish food is rich in :
- (a) Proteins
 - (b) Vitamins
 - (c) Carbohydrates
 - (d) Minerals
39. Which section of the Indian Fisheries Act defines 'Private Water' ?
- (a) Sec. 2
 - (b) Sec. 3 (1)
 - (c) Sec. 3 (3)
 - (d) Sec. 5 (1)
40. The Basel Convention is an International agreement to control the :
- (a) Fishing within the EEZ
 - (b) Movement of hazardous waste across state boundaries
 - (c) Oil exploration within the EEZ
 - (d) Movement of ships
41. One marine league is equivalent to how many nautical miles ?
- (a) 3
 - (b) 12
 - (c) 24
 - (d) 200
42. The notifications relating to the CRZ are issued by :
- (a) The concerned State Government
 - (b) The Ministry of Home Affairs
 - (c) The Ministry of Environment and Forests
 - (d) None of the above
43. Mangroves and wild life habitats within 500 metres of high tide line are listed under which category of the CRZ in India ?
- (a) Category I
 - (b) Category II
 - (c) Category III
 - (d) Category IV
44. The peeler crabs are identified among blue sea crabs by the presence of red colour as a thin line mark in their back fin which suggests that they are ready for moulting within :
- (a) 1 day
 - (b) 3 days

- (c) 5 days
(d) 8 days
45. The major oceanic straddling fish among the following is :
- (a) Sardine
(b) Mackerel
(c) Silver bellies
(d) Tunas
46. In India, trigger fishes are abundant in :
- (a) Gulf of Kutch
(b) Orissa Coast
(c) Tamilnadu Coast
(d) Andhra Pradesh Coast
47. The Head Office of MPEDA is located at :
- (a) Kolkata
(b) Cuttack
(c) Kochi
(d) Mumbai
48. The date on which the Indian Fisheries Act came into force is :
- (a) 24th February, 1897
(b) 4th February, 1897
(c) 24th February, 1980
(d) 1st July, 1987
49. The Coastal Aquaculture Authority Act was passed in India in the year :
- (a) 2005
(b) 2006
(c) 2008
(d) 2010
50. The layer in the ocean where the temperature decreases suddenly with increase in the depth is referred to as :
- (a) Isothermal layer
(b) Troposphere
(c) Deep sea layer
(d) Thermocline
51. Abnormal warming of surface water of Pacific ocean off Peru coast is known as :
- (a) La-Nina
(b) Global warming
(c) El-Nino
(d) None of the above
52. Water stability of diets should be high in the case of :
- (a) Shrimps
(b) Trouts
(c) Carps
(d) Carbs

53. The number of larval stages in *Macrobrachium rosenbergii* is :
- (a) 8
 - (b) 9
 - (c) 10
 - (d) 11
54. A commercial product extracted from brown seaweed is :
- (a) Agar
 - (b) Carrageenan
 - (c) Algin
 - (d) Carotenoids
55. Cat's clay soils have a pH less than :
- (a) 10
 - (b) 7
 - (c) 4
 - (d) 2
56. Which one of the following is Mussel fishery zone of India ?
- (a) Kerala
 - (b) Tamil Nadu
 - (c) Andhra Pradesh
 - (d) Odisha
57. The pearl oyster species abundant in Indian waters is :
- (a) *Pinctada margaritifera*
 - (b) *P. chemnitzii*
 - (c) *P. fucata*
 - (d) *P. atropurpurea*
58. Seasonal shrimp filtration practice in pokkali fields operates during the period from :
- (a) April – October
 - (b) November – April
 - (c) October – December
 - (d) June – October
59. Which of the following is most widely used diatom species in shrimp hatcheries ?
- (a) *Scenedesmus*
 - (b) *Navicula*
 - (c) *Nitzschia*
 - (d) *Chaetoceros*
60. Induced breeding of carps using a synthetic gonadotropin releasing hormone analogue and a dopamine antagonist is called :
- (a) Hypophysation
 - (b) Linpe method
 - (c) Wet stripping
 - (d) None of the above
61. Prions are important Microbial group having essential Macromolecule named as :
- (a) Lipid

- (b) Chitin
(c) Cellulose
(d) Protein
62. Cell wall of Archaeobacteria does not contain :
(a) Cellulose
(b) Peptidoglycan
(c) Pseudonurein
(d) All of the above
63. *Vibrio cholera* is a :
(a) Gram negative, curved rod
(b) Gram positive, bacillus
(c) Gram positive spore forming rod
(d) Gram positive staphylococcus rod
64. *Nitrospira* converts nitrite to nitrate in habitat :
(a) Marine
(b) Freshwater
(c) Soil
(d) All of the above
65. *Nitrosomonas* converts :
(a) Ammonia to Nitrite
(b) Nitrite to Ammonia
(c) Nitrite to Nitrate
(d) Nitrogen to Nitrous oxide
66. The blotted DNA is tightly bound to membrane but can still hybridize to labelled nucleic acid probe in :
(a) Western blotting
(b) Southern blotting
(c) Northern blotting
(d) None of the above
67. Histamine production in Scombrotoxic fish increases with :
(a) Temperature
(b) Oxygen
(c) Water
(d) None of the above
68. Fish flesh starts to spoil visibly when bacterial level rise above :
(a) 10^6 organisms/g
(b) 10^5 organisms/g
(c) 10^7 organisms/g
(d) 10^4 organisms/g
69. The spoilage bacteria are characterized by their ability to produce H_2S and reduce the :
(a) Trimethylamine oxide to trimethylamine
(b) Acetylene oxide to Acetyl-CoA
(c) Total volatile nitrogen
(d) Indole to Tryptophan
70. The PUFA concentration of wild *Oncorhynchus mykiss* is about :
(a) 1.237
(b) 3.942
(c) 0.049
(d) 0.123

71. The full form of HACCP is :
- (a) Hazard Annealing Central Control Point
 - (b) Hazard Analysis Critical Control Point
 - (c) Horizontal Analysis Critical Central Position
 - (d) None of the above
72. ISO 9000 standards nomenclature for India is :
- (a) IST ISO 9000
 - (b) IS/ISO 9000
 - (c) IS 14000
 - (d) Q 9000
73. Migratory fish like Hilsa are caught by a rectangular :
- (a) Purse net
 - (b) Cast net
 - (c) Dip net
 - (d) Hand net
74. An effective method, for preserving the fish is freezing by lowering the temperature below 0°C and :
- (a) Mixing the pure salt with ice
 - (b) Mixing the HCL with ice
 - (c) Using ice
 - (d) None of the above
75. Which of the following is a good preservative ?
- (a) Vinegar
 - (b) Acetic Acid
 - (c) Ascorbic Acid
 - (d) All of the above
76. Food poisoning in man as a result of eating smoked, salted or spiced fish is due to :
- (a) *Clostridium botulinum*
 - (b) *Lactobacillus spp*
 - (c) *Pseudomonas spp*
 - (d) None of the above
77. Masula boats are commonly used along with :
- (a) Karnataka and AP coast
 - (b) Odisha and AP coast
 - (c) UP and MP rivers
 - (d) HP and Punjab
78. Phenolic compounds as disinfectants are seldom used in processing plants because of their :
- (a) High price
 - (b) Strong odour
 - (c) Repellent properties
 - (d) None of the above
79. Result demonstration is :
- (a) Group Approach

- (b) Mass Approach
(c) Individual Approach
(d) None of the above
80. Summative Evaluation of Fisheries Extension Programme is done :
(a) During Project Development
(b) At the end of the program
(c) Any other
(d) None of the above
81. Correlation value ranges from :
(a) + 1 to - 1
(b) 0 to + 1
(c) 0 to - 1
(d) None of the above
82. The first Krishi Vigyan Kendra was established in the year :
(a) 1947
(b) 1978
(c) 1985
(d) 1990
83. The last step in Extension Educational Process is :
(a) Teaching
(b) Evaluation
(c) Reconsideration
(d) Situation
84. Pearson Product-moment Correlation Coefficient is denoted by :
(a) r
(b) r^2
- (c) z^2
(d) m
85. If a distribution is normal, 68% of the populations in the distribution lie :
(a) Within one standard deviation unit of the mean
(b) Within two standard deviation units of the mean
(c) Within three standard deviation units of the mean
(d) None of the above
86. When we attempt to locate participants who are hard to find, we use :
(a) Purposive sampling
(b) Snow ball
(c) Random sampling
(d) None of the above
87. It is more efficient to study a sample instead of conducting a census in :
(a) Small population
(b) Large population
(c) Both (a) and (b)
(d) None of the above
88. Induction training is also known as :
(a) Refresher training
(b) Pre-service training
(c) Portal or vestibule training
(d) None of the above

89. In training cycle, the first phase is :
(a) Training plans development
(b) Training needs assessment
(c) Design of training programme
(d) None of the above
90. NATP stands for :
(a) National Aquaculture Technology Project
(b) National Animal Science Technology Project
(c) National Agriculture Technology Project
(d) None of the above
91. The average fecundity of the Indian Major Carp, *Catla Catla*, is :
(a) 3-5 lakhs
(b) 2-4 lakhs
(c) 1-3 lakhs
(d) 1.5-3.5 lakhs
92. The pituitary hormone that plays an important role in promoting the development of gonads, growth, maturity and spawning in carps is :
(a) FSH
(b) GIH
(c) HCG
(d) MIH
93. During summer which type of bundh retains water containing breeders ?
(a) Dry bundh
(b) Wet bundh
(c) Shallow bundh
(d) Seasonal bundh
94. The term Probiotic was first coined by :
(a) Liley and Stillwell
(b) Fuller
(c) Parket
(d) Havenaar
95. The first scientist who used the technique of eyestalk ablation to get ovarian development in *Leander serratus* is :
(a) Pamouse
(b) Cuvier
(c) Rondelet
(d) Fransis Day
96. The spectrophotometric method used for protein estimation is :
(a) Lowry method
(b) Carrol method
(c) Diacetyl mononime method
(d) Nachlas method
97. The portions of the chromosomes on either side of the centromere are :
(a) Minisatellites

- (b) Chromosome arms
(c) Telomeres
(d) Satellites
98. The entire heredity material in a cell is called as :
(a) Chromatin
(b) Karyoplasm
(c) Genome
(d) Cell organelle
99. The hybridization of nucleic acids on membranes is a widely used technique in :
(a) Gene cloning
(b) Gene mutations
(c) Gene manipulation
(d) Defaunation
100. The small units of monomers of proteins are called :
(a) Enzymes
(b) Amino acids
(c) Hormones
(d) Vitamins
101. The vitamin that acts as a coenzyme for cathepsins and liver esterases is :
(a) Vitamin C
(b) Vitamin A
(c) Vitamin D
(d) Vitamin B₁
102. The disease that occurs due to the absence of glucose-6-phosphatase in cells is :
(a) Pompe's disease
(b) Forbe's disease
(c) Von Gierke's disease
(d) Anderson's disease
103. The plankton which is introduced from other localities are called as :
(a) Autogenetic plankton
(b) Euplankton
(c) Allogenic plankton
(d) Psuedo plankton
104. Which species of sea turtle found nesting on the coast line at Odisha State ?
(a) Leather back
(b) Green turtle
(c) Hawksbill turtle
(d) Olive Ridley turtle
105. Pure water has got maximum density at a temperature of :
(a) 4.00°C
(b) 4.16°C
(c) 3.96°C
(d) 3.90°C
106. The word plankton which means wandering was first used by :
(a) Nelson 1987

- (b) Hensen 1887
(c) Nansen 1897
(d) Haeckel 1878
107. Rooted hydrophytic plants which do not penetrate into the bottom are :
(a) Hydrilla
(b) Marselia
(c) Typha
(d) Lemna
108. The average wavelength of Seismic waves of sea is :
(a) 20-80 kms
(b) 100-200 kms
(c) 400-600 kms
(d) 900-1000 kms
109. The phenomenon by which nutrient rich cool waters from deep layers of sea are brought to the surface under the influence of currents and winds is :
(a) El Nino
(b) Upwelling
(c) Downwelling
(d) Coriolis force
110. The light intensity at which oxygen production by way of photosynthesis and oxygen utilization by way of respiration equals is called :
(a) Compensation depth
(b) Thermocline
(c) Compensation point
(d) Chemocline
111. According to Barnes et al (1971) coral reef zone occurs at a depth in between 6 and 14 mts represents by :
(a) Brain corals
(b) Soft corals
(c) Encrusting corals
(d) Gorgonians
112. An organic compound secreted by some algae and fungi which impart musty odour to water is :
(a) Saxitoxin
(b) Geosmin
(c) Neurotoxin
(d) None of the above
113. Paralytic shell fish poison produced by dinoflagellates are toxic to :
(a) Fishes
(b) Human
(c) Dolphins
(d) All of the above
114. The zone which is the upper most part of the benthic division and territory between high and low water marks of spring tide is called as :
(a) Limnetic zone
(b) Littoral zone
(c) Protundal zone
(d) Intertidal zone

115. Agar-agar is :

- (a) Derivative of coral
- (b) Derivative of marine seaweed
- (c) A glycerol compound
- (d) An antibiotic from fungi

116. Interferon is :

- (a) An antiviral protein
- (b) A synthetic drug
- (c) An antibiotic
- (d) A lipid derivative

117. Immunity arises from activities of T-lymphocytes on or near body of cell is called as :

- (a) Cellular Immunity
- (b) Tissue Immunity
- (c) Cell mediated Immunity
- (d) All of the above

118. Coons (1941) introduced :

- (a) The fluorescent antibody technique
- (b) Fluorescence microscopy
- (c) Electron microscopy
- (d) Nicol prisms

119. In electron microscopy the wavelength can be expressed by the equation :

- (a) $\lambda = 12.3/\sqrt{E} \text{ \AA}$
- (b) $\lambda = 4.2/\sqrt{E} \text{ \AA}$
- (c) $\lambda = 100/\sqrt{E} \text{ \AA}$
- (d) None of the above

120. Stain precipitate, spaces, air bubbles occurring imperfections seen in slide preparations are known as :

- (a) Artifacts
- (b) Aerofacts
- (c) Ghosts points
- (d) None of the above

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SPACE FOR ROUGH WORK

SEAL