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ROLL No.

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TEST BOOKLET No.

107

TEST FOR POST GRADUATE PROGRAMMES

FISHERIES

Time: 2 Hours

Maximum Marks: 450

INSTRUCTIONS TO CANDIDATES

1. You are provided with a Test Booklet and an Optical Mark Reader (OMR) Answer Sheet to mark your responses. Do not soil the Answer Sheet. Read carefully all the instructions given on the Answer Sheet.
 2. Write your Roll Number in the space provided on the top of this page.
 3. Also write your Roll Number, Test Code, and Test Subject in the columns provided for the same on the Answer Sheet. Darken the appropriate bubbles with a Ball Point Pen.
 4. The paper consists of 150 objective type questions. All questions carry equal marks.
 5. Each question has four alternative responses marked A, B, C and D and you have to darken the bubble fully by a Ball Point Pen corresponding to the correct response as indicated in the example shown on the Answer Sheet.
 6. Each correct answer carries 3 marks and each wrong answer carries 1 minus mark.
 7. Space for rough work is provided at the end of this Test Booklet.
 8. You should return the Answer Sheet to the Invigilator before you leave the examination hall. However, you can retain the Test Booklet.
 9. Every precaution has been taken to avoid errors in the Test Booklet. In the event of any such unforeseen happenings, the same may be brought to the notice of the Observer/Chief Superintendent in writing. Suitable remedial measures will be taken at the time of evaluation, if necessary.
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1. Giant prawn is
 - (A) *Penaeus indicus*
 - (B) *Palaemon stylifera*
 - (C) *Macrobrachium malcomsoni*
 - (D) *Macrobrachium rosenbergii*

2. In which country pearl culture originated?
 - (A) India
 - (B) China
 - (C) Japan
 - (D) Malaysia

3. Aeration is done in the aquarium
 - (A) to reduce the temperature
 - (B) to increase the amount of dissolved oxygen
 - (C) for both the purposes
 - (D) None of the above

4. Which of the following is a phytoplankton?
 - (A) *Noctiluca*
 - (B) Nauplius
 - (C) *Microcystis*
 - (D) *Daphnia*

5. Common carp lives at
 - (A) the surface of pond
 - (B) moderate depth
 - (C) the bottom of pond
 - (D) anywhere in pond

6. The fish helpful in controlling mosquitoes is
 - (A) *Gambusia*
 - (B) *Arius*
 - (C) *Ophiocephalus*
 - (D) All of the above



7. Corals are most closely related to
- (A) Barnacles (B) Sea anemones
(C) Clams (D) Sea urchins
8. A 'pycnocline' is a significant change in
- (A) Salinity (B) Density
(C) Light intensity (D) Turbidity
9. The sea fans belong to the
- (A) Order Gorgonacea (B) Phylum Porifera
(C) Class Hydrozoa (D) Kingdom Protista
10. In temperate zones, the thermocline will be most pronounced during
- (A) Spring (B) Fall
(C) Summer (D) Winter
11. The group of marine animals with largest number of species identified as threatened or endangered is
- (A) Fishes (B) Mollusks
(C) Echinoderms (D) Mammals
12. The effect of ebb currents on tides is
- (A) to make the height to fluctuate in a regular pattern
(B) to increase the height
(C) to decrease the height
(D) to make the height to fluctuate in an irregular pattern
13. Kelp lacks
- (A) A stipe (B) A holdfast
(C) Roots (D) Blades



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14. Each time a tidal current changes directions, there is a period of no current known as
- (A) A flood current (B) An ebb current
(C) A reversed current (D) A slack current
15. Which of the following occurs along a seashore as a result of a rise in sea level?
- (A) Marine terraces (B) Wave-cut beaches
(C) Beach ridges (D) Sand bars
16. The primary process by which nutrients are returned to the surface waters is
- (A) heating of subsurface waters
(B) upwelling along coastlines
(C) subsidence where ocean currents meet
(D) deep dwelling organisms surfacing when they die
17. The gas normally used to fill the SCUBA dive cylinders is?
- (A) Oxygen (B) Carbon di oxide
(C) Liquefied ammonia (D) Atmospheric air
18. The coral symbiont zooxanthellae is a
- (A) Dinoflagellate (B) Diatom
(C) Bacteria (D) Fungi
19. Which of the algae is responsible for the red colour of the Red Sea?
- (A) *Chlamydomonas braunii* (B) *Trichodesmium erythrium*
(C) *Ulothrix zonata* (D) *Aspergillus niger*
20. In chilled shrimp is chiefly responsible for spoilage.
- (A) *Achromobacter* (B) *Pseudomonas*
(C) *Micrococcus* (D) *Molds or yeasts*



21. At which stage oysters or other shellfishes settling down and becoming attached to a hard object?
- (A) Spat (B) Fry
(C) Larva (D) Juvenile
22. Number of larval stages in *P. monodon* is
- (A) 13 (B) 15
(C) 9 (D) 12
23. The national fish of India is
- (A) Seer fish (B) Indian oil sardine
(C) Indian Mackerel (D) Indian Gobia
24. Hooks and lines are used to catch
- (A) Prawn (B) Mackerel
(C) Anchovies (D) Tuna
25. The most widely used cryoprotectant in fish gamete preservations is
- (A) DMSO (B) Methanol
(C) 40 Acetic acid (D) Ethyl alcohol
26. A large rectal light gland filled with luminous bacterial flora, is found in
- (A) Vinciguerra (B) Opisthoproctus
(C) Cyclothone (D) Barracudina
27. Lodhia boat is used in
- (A) Gujarat (B) Tamil Nadu
(C) Karnataka (D) Andhra Pradesh



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28. PCR method for the detection of *Vibrio cholera* was standardized by
- (A) CIFE (B) CIFT
(C) CCMB (D) CMFRI
29. Who is known as Father of Indian Fisheries?
- (A) Frederick Nicholson (B) S. Jones
(C) Francis Day (D) James Hornell
30. Feeding rate is estimated by
- (A) Multiplying the weight by conversion rate of feed used
(B) Estimating the approximate number of larvae to be fed
(C) Calculating the biomass
(D) Estimating the mortality rate
31. The head quarters of the Central Inland Fisheries Research Institute is at
- (A) Mumbai (B) Kolkata
(C) Kochi (D) Barrackpore
32. Primary productivity is measured by using
- (A) Radioactive tracers like C^{14}
(B) Radioactive K^{40}
(C) Radioactive iodine
(D) 45 Radioactive Cs^{137}
33. Ammonia concentration is toxic to fish beyond
- (A) 0.05 mg/lit (B) 0.5 mg/lit
(C) 0.75 mg/lit (D) 10 mg/lit
34. Hypophysation technique was first used in
- (A) China (B) USA
(C) Brazil (D) India



35. The rate of ammonia excretion increases 10 times when the temperature in fish fry transport containers raises to
- (A) 1°C (B) 2°C
(C) 8°C to 15°C (D) 15°C to 20°C
36. The ornamental fish which is banned in India is
- (A) Discus (B) Oscar
(C) Piranah (D) Peacock cichlid
37. The first Indian Fisheries Act was passed in the year
- (A) 1920 (B) 1897
(C) 1950 (D) 1900
38. The classic example of surrounding net is
- (A) Purse seine (B) Beach seine
(C) Ring line (D) Bracket
39. India has major fishing harbours
- (A) Four (B) Three
(C) Two (D) Six
40. Common antifouling paint contains
- (A) Mercury (B) Manganese
(C) Magnesium (D) Copper
41. Which of the following states does not have Maritime Fishing Regulation Act in practice?
- (A) Tamil Nadu (B) Maharashtra
(C) Odisha (D) Gujarat



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42. Dolnet is used for catching
- (A) Tuna (B) Cat fish
(C) Anchovies (D) Bombay duck
43. A strip of flesh cut from the fish parallel to the line of the back bone is called as
- (A) Steak (B) Fillet
(C) Minced meat (D) None of the above
44. Species caught by pole and line fishing is
- (A) Tuna (B) Squid
(C) Shrimp (D) Mackerel
45. Anabas has which type of respiratory organ?
- (A) Arborescent (B) Air bladder
(C) Labrinthine (D) Tubular sacs
46. 'Trepang' is
- (A) Processed sea cucumber (B) Processed sea cretin
(C) Processed sea anemone (D) Processed jelly fish
47. Blackening of crab meat is caused by
- (A) H_2S (B) Sulfites
(C) Tartaric acid (D) Citric acid
48. At present, which product ranks first in export from India to other countries?
- (A) Frozen fish (B) Frozen shrimp
(C) Frozen cuttle fish (D) Frozen lobster



49. Adipose tissue of fish is formed of
- (A) Protein (B) Amino acid
(C) Fat (D) Carbohydrate
50. The fish that contains higher moisture content is
- (A) Sardine (B) Tuna
(C) Bombay duck (D) Cat fish
51. Elasmobranchii includes
- (A) Bony fishes (B) Cartilaginous fishes
(C) Jawless fish (D) Rays and Skates
52. Micro flora of marine fish is dominated by
- (A) Gram ⁺ve bacteria (B) Gram ⁻ve bacteria
(C) Both (A) and (B) (D) None of the above
53. Pearl essence is prepared from
- (A) Crustacean shell waste (B) Fish scale
(C) Fish liver (D) Shark fin
54. Ambergris is obtained from
- (A) Sperm whale (B) Shark
(C) Fish scale (D) Oil sardine
55. Form of food poisoning caused by histamine
- (A) Ciguatera poisoning (B) Amnesic poisoning
(C) Scombroid poisoning (D) None of the above
56. Among the following which is not a post mortem changes in fish?
- (A) Autolysis (B) Bacterial spoilage
(C) Nitrification (D) Rigor mortis



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57. Exploitation of a fish stock at right age is called as
- (A) Under fishing (B) Over fishing
(C) Eumetric fishing (D) None of the above
58. L_m/L_∞ is an index to
- (A) Reproduction (B) Reproductive stress
(C) Reproductive capacity (D) None of the above
59. The following hormone induces maturation and ovulation
- (A) LH and HCG (B) GIH
(C) Crustecdysone (D) Thyroxine
60. Ablation of eyestalk in crustaceans
- (A) Accelerate vitellogenesis (B) Retrad maturation
(C) Increase fecundity (D) Promote mortality
61. In tropical countries, the fish mature
- (A) late (B) seasonally
(C) at the given time (D) early
62. Fishes are usually
- (A) Ureotelic and uricotelic (B) Ureotelic
(C) Amminotelic and ureotelic (D) Uricotelic
63. Scales of elasombranch are
- (A) Ctenoid (B) Ganoid
(C) Cycloid (D) Placoid



64. Peculiarity of fish heart is that it has
- (A) no blood at all
 - (B) all venous blood
 - (C) all arterial blood
 - (D) partly arterial blood and partly venous blood
65. Climbing fish is
- (A) *Anguilla*
 - (B) *Labeo*
 - (C) *Scoliodon*
 - (D) *Anabas*
66. Golden age of fishes is
- (A) Silurian period
 - (B) Devonian period
 - (C) Ordovician period
 - (D) Jurassic period
67. Among the following which is the true fish?
- (A) Cuttle fish
 - (B) Flying fish
 - (C) Devil fish
 - (D) Cray fish
68. Number of branchial arches present in *Scoliodon* is
- (A) 5 pairs
 - (B) 8 pairs
 - (C) 6 pairs
 - (D) 7 pairs
69. Which is the largest fish in the world?
- (A) Grey shark (*Carcharhinus plumbeus*)
 - (B) Japanese Horn shark (*Heterodontus japonicus*)
 - (C) Whale shark (*Rhincodon typus*)
 - (D) Basking shark (*Cetorhinus maximus*)
70. Fishes have kidney of
- (A) Metanephric type
 - (B) Mesonephric type
 - (C) Protonephric type
 - (D) None of the above



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71. Respiratory pigment in fishes is
- (A) Haemoglobin (B) Haemocyanin
(C) Erythrocyanin (D) None of the above
72. The process of female fish mating with several males is
- (A) Monogamy (B) Polygamy
(C) Polyandry (D) None of the above
73. Scaleless fish
- (A) Cat fish (B) Torpedo
(C) Both (A) and (B) (D) None of the above
74. Agnatha are the animals without
- (A) Heart (B) Teeth
(C) Kidney (D) Jaws
75. A catadromous fish migrates from
- (A) River to sea (B) Sea to rivers
(C) River to estuary (D) None of the above
76. Placenta in shark is
- (A) Absent (B) Chorionic
(C) Yolk sac (D) Allantoic
77. Young one of a fish is called
- (A) Nymph (B) Larva
(C) Fry (D) None of the above
78. Cartilaginous fishes do not have
- (A) Operculum (B) Pelvic fins
(C) Scales (D) Gill slits



79. Hypophysation technique is followed in the case of
- (A) Prawns (B) Fin fishes
(C) Clams (D) Mussels
80. Sting rays carry a poison sting on their
- (A) mouth (B) tail
(C) head (D) fin
81. The generic name of the 'flying fish' is
- (A) Remora (B) Exocoetus
(C) Hippocampus (D) Echeneis
82. Sound producing fish is
- (A) Zygaena (B) Balistes
(C) Scoliodon (D) None of the above
83. Which of the following fish is famous for migration?
- (A) Salmon (B) Ribbon fish
(C) Shark (D) Carp
84. Craft employed in Kerala for oil sardine fishery is
- (A) Dugout canoes (B) Bigger 'odam'
(C) Smaller 'vanchi' (D) All of the above
85. Rampani net is used to catch
- (A) Mackerals (B) Sardines
(C) Indian salmon (D) None of the above
86. Intestine is long and coiled in
- (A) Carnivorous (B) Herbivorous
(C) Omnivorous (D) None of the above



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87. Deepest lake in the world is
- (A) Baikal Lake (B) Chilka Lake
(C) Superior Lake (D) Pulicat Lake
88. Abundant blooms of *Fragillaria oceanica* indicates the presence of a particular fish
- (A) Sardine (B) Mackerel
(C) Bombay duck (D) Tuna
89. Which fish can produce electricity?
- (A) Narcine (B) Sardine
(C) *Mugil* (D) Milk fish
90. International year of Ocean
- (A) 1997 (B) 1998
(C) 1996 (D) 2015
91. Transparency of water is measured by
- (A) Hydrometer (B) Ecco sounder
(C) Naphlometer (D) Secchi disc
92. Animal with both stenohaline and euryhaline adaptation is
- (A) Carp (B) Tilapia
(C) *Anguilla* (D) None of the above
93. Functional status of an organism in its community is
- (A) Niche (B) Ooze
(C) Habitat (D) Holdfast
94. Respiratory root found in mangrove is called
- (A) Tube feet (B) Pedaldise
(C) Pneumatophores (D) Osculum



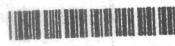
95. Ring shaped or horse-shoe shaped coral reefs are called
- (A) Fjords (B) Fringing reef
(C) Atolls (D) Barrier reef
96. Pesticides which are non-biodegradable accumulate in the marine organisms
- (A) Organo phosphate pesticides
(B) Organo chlorine pesticides
(C) Both (A) and (B)
(D) None of the above
97. Neritic zone extends up to depth of
- (A) 100 to 200m (B) 50 to 200m
(C) 101 to 200m (D) 0 to 200m
98. The amount of water exchanged in a given area during the tidal cycle is
- (A) Tidal prism (B) Tidal inlet
(C) Tidal flat (D) None of the above
99. The appropriate form of production function in marine capture fisheries is
- (A) Linear form (B) Quadratic form
(C) Parabolic form (D) Exponential form
100. Brine shrimp larvae is one of the live feeds for
- (A) Shrimp (B) Mullet
(C) Etroplus (D) *Gambusia*
101. Which is the deemed university for fishery education in India?
- (A) CIFRI (B) CIFE
(C) CIBA (D) CMFRI



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102. Adayar and Vellar are the estuaries found in the
- (A) East coast (B) West coast
(C) North coast (D) South coast
103. Mugger-Mukh is a lagoon associated with
- (A) Kerala backwater (B) Narmada estuary
(C) Chilka Lake (D) Godavary estuary
104. 'Pokkali' is the term used for
- (A) Village pond (B) Kind of cages
(C) Paddy field (D) Bhasabadha
105. Internationally accepted mode of determination of maturity stages in the fishes was given by
- (A) Hora (B) Das
(C) Wood (D) Jhingaran
106. Mesh size of phytoplankton sampling net is
- (A) 50 micron (B) 100 micron
(C) 20 micron (D) 75 micron
107. Diets are expected to provide the culture organism with
- (A) Energy requirements (B) Gross major nutrients
(C) Micronutrients (D) All of the above
108. Carboxymethyl cellulose is used in fish diets as a
- (A) Carbohydrate source (B) Vitamin
(C) Binder (D) Biofloc
109. Bioencapsulation of *Artemia* is done mainly to enrich it with
- (A) Fat (B) Protein
(C) Fatty acids (D) Vitamins and Minerals

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110. Time interval between ingestion and first appearance of faeces is known as
- (A) Gut transit time (B) Gut evacuation time
(C) Gastric transit time (D) Gastric evacuation time
111. Shrimp diets need to be water stable for at least
- (A) 1 hr (B) 2 hr
(C) 3 hr (D) 4 hr
112. Ethoxyquin is included in fish diets as a
- (A) fatty acid source (B) antioxidant
(C) energy source (D) mineral
113. During nursery phase of carp seed rearing, manure is applied in
- (A) single dose (B) monthly dose
(C) multiple doses (D) bimonthly dose
114. Liver lipid disease (LLD) occurs in fish fed excess with
- (A) Energy (B) Fat
(C) Vitamins (D) Carbohydrate
115. A fish that exhibits protandry is
- (A) Etroplus (B) Mullet
(C) Milkfish (D) Seabass
116. Vitamins affect fish
- (A) growth (B) health
(C) function (D) All of the above
117. Modified stomach that secretes hydrochloric acid is found in
- (A) Rohu (B) Common carp
(C) Tilapia (D) Salmon



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118. Hepatopancreas of crustaceans serves the function of
- (A) Pancreas (B) Kidney
(C) Liver (D) Liver and pancreas
119. 'Gizzard' that performs grinding function is found in
- (A) Tilapia (B) Mullet
(C) Catfish (D) Trout
120. Vitellogenin, a lipoprotein, found in mature female fish is synthesized in the
- (A) Ovary (B) Intestine
(C) Liver (D) Pancreas
121. Energy retention in fish varies in relation to
- (A) Body size (B) Ration size
(C) Diet composition (D) All of the above
122. Most of the protein synthesized in fish is retained in the
- (A) Red muscle (B) White muscle
(C) Liver (D) Digestive tract
123. Iodine is a component of
- (A) Adrenalene (B) Prolactin
(C) Thyroxine (D) Melatonin
124. Coating of feed pellets is done to incorporate
- (A) Essential fatty acids (B) Liposoluble vitamins
(C) Hydrosoluble vitamins (D) All of the above

125. Organisms capable of synthesising their own food from non-living components in the environment are
- (A) Heterotrophs (B) Autotrophs
(C) Saprophytes (D) Oligotrophs
126. Zeolite is used in aquaculture to absorb
- (A) Carbon dioxide (B) Sulphur dioxide
(C) Ammonia (D) Nitrate
127. The method of vaccination that is quick and effective in fish is
- (A) Intraperitoneal (B) Immersion
(C) Dip treatment (D) Oral feeding
128. A commonly used disinfectant in aquaculture is
- (A) Chlorine (B) Lime
(C) Neem cake (D) KMnO_4
129. The sperm storing organ in female shrimp is
- (A) Petasma (B) Thelycum
(C) Gonopodium (D) Gonophore
130. One of the following is an indigenous catfish of India
- (A) *Silurus* (B) *Ictalurus*
(C) *Clarias* (D) *Anabas*
131. Prawns are
- (A) Herbivorous (B) Detritivorous
(C) Omnivorous (D) Carnivorous



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132. Following the second dose of pituitary extract injection, spawning of Indian major carps takes place after
- (A) 8-12 hr (B) 4-6 hr
(C) 1-2 hr (D) 6-8 hr
133. Waxes and sterols are
- (A) Lipids (B) Proteins
(C) Carbohydrates (D) Spingomyelins
134. The most popular species of oyster cultured in India is
- (A) *Tridanca gigas* (B) *Crassostrea tulipa*
(C) *Crassostrea madrasensis* (D) *Skeketonemac ostaticum*
135. A series of islands is known as
- (A) Atoll (B) Archipelago
(C) Bilge (D) Fringe
136. In herbivores, amylase occurs in the
- (A) stomach (B) intestine
(C) entire digestive tract (D) None of the above
137. Milkfish cultured in brackish water ponds feed mainly on
- (A) Benthic green algae (B) Benthic blue green algae
(C) Zooplankton (D) Periphyton
138. Mid water trawls are mainly used for catching
- (A) Column dwelling fishes and squids
(B) Cephalopods
(C) Pelagic fishes
(D) Demersal fishes



139. Inbreeding leads to
- (A) Homozygosity (B) Heterozygosity
(C) Depression (D) Drift
140. Incorporation of yolk into developing oocytes is known as
- (A) Oogenesis (B) Gametogenesis
(C) Vitellogenesis (D) None of the above
141. Ecologically sensitive areas such as coral reefs and fish spawning grounds are categorised under
- (A) CRZ-I (B) CRZ-II
(C) CRZ-III (D) CRZ-IV
142. Metabolism in fish is influenced by
- (A) Water temperature (B) Age
(C) Feeding (D) All of the above
143. Exclusive Economic Zone of India is limited to
- (A) 200 nautical miles (B) 300 nautical miles
(C) 150 nautical miles (D) 250 nautical miles
144. An example for nest building ornamental fish is
- (A) Gourami (B) Betta
(C) Angel fish (D) All of the above
145. When pituitary gland of the same fish species is used for hypophysation, it is known as
- (A) Hemiplastic (B) Heteroplactic
(C) Homoplactic (D) None of the above



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146. Stock enhancement in natural waters is effected through
- (A) Selective breeding (B) Hybridization
(C) Ranching (D) All of the above
147. The seaweed resources of the country are mainly confined to the coasts of
- (A) Tamil Nadu and Gujarat
(B) Karnataka and Maharashtra
(C) Kerala and Andhra Pradesh
(D) Odisha and West Bengal
148. Among the Indian States, the one which tops in estuarine water resources is
- (A) Odisha (B) Kerala
(C) Gujarat (D) West Bengal
149. The State Fish of Kerala adapted for the purpose of conservation is
- (A) *Labeo calbasu* (B) *Chitala chitala*
(C) *Channa striatus* (D) *Etroplus suratensis*
150. Phytoplankton that is suitable as shrimp larval food is
- (A) *Chaetoceros* (B) *Coscinodiscus*
(C) *Noctiluca* (D) *Dinophysis*

SPACE FOR ROUGH WORK



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