

MIZORAM PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POSTS OF
FISHERY EXTENSION OFFICER
UNDER FISHERIES DEPARTMENT, DECEMBER, 2017

TECHNICAL PAPER – II

Time Allowed : 2 hours

Full Marks : 200

All questions carry equal marks of 2 each.

Attempt all questions.

1. Zoogeographically, the largest number of fish species occurs in the region of:
(a) Temperate region (b) Arctic region
(c) Tropical region (d) Antarctic region
2. Stocking density of catfish brooder:
(a) 1-2/m² (b) 5-6/m²
(c) 2-3/m² (d) 5-10/m²
3. Name of mechanical time piece:
(a) Chronometers (b) E M log
(c) Compass (d) None of these
4. The most rapid method of surveying is:
(a) Compass surveying (b) Chain surveying
(c) Plane table surveying (d) None of these
5. The important raw material source in fish feed is:
(a) Leaf meal (b) Legume meal
(c) Fish meal (d) Oil cake
6. Maturity of male mahseer is:
(a) 1-3 years (b) 3+ years
(c) 2 years (d) 5+ years
7. Which one is a live bearer?
(a) Gold fish (b) Guppy
(c) Tilapia (d) Pabda fish
8. Mycrocystis bloom in pond is controlled by:
(a) Gammexane (b) Teepol
(c) Simazine (d) BHC
9. In fish culture ponds, the inlets and outlets are constructed in:
(a) Opposite side (b) Right angle to each other
(c) Same side (d) None of these

10. In sewage fed fish culture:
- (a) No oxidation pond is required
 - (b) Serial oxidation ponds are required
 - (c) Sewage water is directly used
 - (d) Single oxidation pond is required
11. Order of Moina (zooplankton) is :
- (a) Cladocera
 - (b) Anostraca
 - (c) Arthropoda
 - (d) Copepoda
12. The first staff reading in any set up of the instrument is called :
- (a) Fore sight
 - (b) Intermediate sight
 - (c) Back sight
 - (d) All of these
13. Cryopreservation of fish eggs is difficult because of its:
- (a) Large size
 - (b) High fat content
 - (c) High water content
 - (d) High Yolk content
14. Hatching time of Mahseer eggs at 22-24oC temperature:
- (a) 16 Hrs
 - (b) 72 Hrs
 - (c) 180 Hrs
 - (d) 80-90Hrs
15. Which of the following fish species are comes under Live fishes?
- (a) Guppy
 - (b) Magur
 - (c) Sword tail
 - (d) All of these
16. First attempt to transplant trout in India is made at:
- (a) Himachal Pradesh
 - (b) Nainital
 - (c) Jamu & Kashmir
 - (d) Nilgiris
17. The larvae of f/w prawns require one of the following salinity ranges for metamorphosis:
- (a) 0 ppt
 - (b) 10-20 ppt
 - (c) 20-30 ppt
 - (d) 30-35 ppt
18. The outer integument of crustacean is made up of how many layers?
- (a) Two
 - (b) Five
 - (c) Three
 - (d) Seven
19. In most fish, the chemical digestion begins in:
- (a) Mouth
 - (b) Oesophagus
 - (c) Stomach
 - (d) Intestine
20. Fertilization is the fusion of male and female gametes followed by the joining of:
- (a) Cells
 - (b) Cytoplasm
 - (c) Nucleus
 - (d) Mitochondria
21. Dr.Chaudhuri and Dr.Alikunni succeeded in induced breeding of carps by injecting carp pituitary extract in the year:
- (a) 1937
 - (b) 1967
 - (c) 1957
 - (d) 1947
22. In integrated farming, construction of animal houses need.....% of the total farm land
- (a) 10
 - (b) 25
 - (c) 20
 - (d) 30

23. Feed Conversion ratio of Fish meal:
- (a) 1.5- 3 (b) 3.5-4
(c) 2.5-4 (d) 4.5-5
24. In larval rearing of shrimp, freshly hatched artemia nauplii are fed from:
- (a) Nauplius stage (b) Mysis I stage
(c) Protozoa I stage (d) Mysis III stage
25. The number of individuals an environment can support without significant negative impacts to the given organism and its environment:
- (a) Carrying capacity (b) Standing crop
(c) Ecosystem (d) Ecological habitats
26. Hypophysation refers to:
- (a) Moulting (b) Eyestalk ablation
(c) Hybridization (d) Induced breeding with pituitary extracts
27. Fish meal is mainly used as a feed ingredient in:
- (a) Baby feed (b) Both (a) and (b)
(c) Live-stock feed (d) None of these
28. The most common practice fish pond in Mizoram is:
- (a) Watershed pond (b) RAS pond
(c) Levee pond (d) RAD pond
29. The maximum time for filling a pond is:
- (a) 1 week (b) 3 weeks
(c) 2 weeks (d) 4 weeks
30. The organic soils having more than:
- (a) 10% organic constituents (b) 20% organic constituents
(c) 15% organic constituents (d) 25% organic constituents
31. Phytoplankton contain C:N:P in the ratio of:
- (a) 106:17:1 (b) 75:16:2.4
(c) 100:16:2.4 (d) 75:17:2.4
32. Is considered to be one of the most important limiting factors in the development of phytoplankton:
- (a) Magnesium (b) Calcium
(c) Nitrogen (d) Potassium
33. The area of pond is $50\text{m} \times 20\text{m} \times 1.5\text{m}$. The volume of the pond(in gallon):
- (a) 11250 (b) 12500
(c) 1500 (d) 10000
34. Find the perimeter of rectangular fish pond having 60m lengths and 40m widths?
- (a) 4800m (b) 200m
(c) 480m (d) 3600m
35. 1 hectare fish pond equal:
- (a) 7.5 bigha (b) 4.2 bigha
(c) 6.17 bigha (d) 5.6 bigha

36. Starving the fishes before packing for transportation is known as:
(a) Acclimatization (b) Conditioning
(c) Sedation (d) Quarantining
37. For air transport, the gross weight of the pack should not exceed.....kg as per airline requirement
(a) 30 kg (b) 20 kg
(c) 10 kg (d) 40 kg
38. Which of the following ornamental fish has been reported for transgenesis?
(a) Esomus (b) Angel fish
(c) Zebra fish (d) Fighter fish
39. Present Per capita per annum availability in India :
(a) 6.5 kg (b) 7.9 kg
(c) 9.6 kg (d) 11 kg
40. Density of the fish is :
(a) 0.92 g/cm³ (b) 0.98 g/cm³
(c) 0.94 g/cm³ (d) 1.0 g/cm³
41. Stage of PL stocked for grow-out prawn culture is :
(a) PL 10 (b) PL 20
(c) PL 12 (d) Both (b) and (c)
42. Hypophysis is related to :
(a) Pituitary gland (b) Pineal gland
(c) Adrenal gland (d) Corpus of stannius
43. Order of Artemia is :
(a) *Notostraca* (b) *Copepoda*
(c) *Anostraca* (d) *Arthropoda*
44. Find the purine base :
(a) Uracil (b) Thymine
(c) Guanine (d) None of these
45. Bighead carp :
(a) Zooplankton feeder (b) Omnivorous
(c) Phytoplankton feeder (d) Macrophytes feeder
46. Stocking density of fry rearing@nos/ha :
(a) 6000-12000 (b) 3-5 lakh
(c) 60000-120000 (d) 3-5 million
47. Relative neutralizing value is 100
(a) CaO (b) CaCO₃
(c) Ca(OH)₂ (d) MgCO₃
48. Percentage of protein content in fish :
(a) 16 -22 % (b) 35-40%
(c) 66-80 % (d) 30-35%

49. Health of heart and circulatory system are maintained by :
- (a) EPA (b) Amino Acid
(c) DHA (d) None of these
50. Gypsum is :
- (a) CuSO_4 (b) NaCl_2
(c) CaSO_4 (d) MgCO_3
51. Generally raw sewage contains:
- (a) 99 % (b) 90 %
(c) 99.9 % (d) 80 %
52. In integrated aquaculture, number of poultry bird needed/ ha:
- (a) 100-200 (b) 50-100
(c) 200-300 (d) 500-600
53. Feed Conversion ratio of Rice bran:
- (a) 5.08 (b) 8.08
(c) 7.08 (d) 10.08
54. Gill in fish mainly used for:
- (a) Filtering of water (b) Excretion
(c) Respiration (d) Both (b) and (c)
55. The largest freshwater fish in the world is:
- (a) *Huso huso* (b) *Mola mola*
(c) *Wallago attu* (d) Oarfish
56. Nitrogen content of Urea is :
- (a) 12-16% (b) 20-25 %
(c) 16-30% (d) 44-46%
57. Thelycum is the reproductive organ of:
- (a) Male f/w prawn (b) Female shrimp
(c) Male shrimp (d) Female f/w prawn
58. The development of embryos without genetic contribution from the male parent is:
- (a) Androgenesis (b) Haploidy
(c) Gynogenesis (d) Polyploidy
59. Fish species successfully bred first in India is:
- (a) *Puntius* (b) *Cyprinus*
(c) *Esomus* (d) Zebra fish
60. Which of the following aquatic plant is not a Floating weeds?
- (a) *Eichhornia* (b) *Hydrilla*
(c) *Azolla* (d) *Pistia*
61. 1 gm dry weight of organic matter :
- (a) 4.5 K cal (b) 3.5 K cal
(c) 5 K cal (d) 5.5 K cal

62. Duration of quarantine period is:
(a) 2- 3 weeks (b) 1 month
(c) 1 week (d) 30 min -1 hr
63. Plankton sediment in cloth/ glass tube indicates good production of plankton:
(a) 1-2 cc (b) 5 cc
(c) 3-4 cc (d) 6-10 cc
64. Biofertilizers can replace% chemical fertilizers
(a) 25-30% (b) 60 %
(c) 35-40% (d) 44-46%
65. National freshwater fish is known as:
(a) Freshwater shark (b) Stream trout
(c) Mahseer (d) Indian major carp(IMC)
66. Which one is not air breather?
(a) Fighter fish (b) Tilapia fish
(c) Channa fish (d) Clarius fish
67. The line joining points of equal elevation is known as :
(a) Horizontal line (b) Level line
(c) Contour line (d) All of these
68. In cryopreservation of fish gametes, which one of the following is NOT:
(a) Dimethyl sulphoxide (b) Methanol
(c) Ethylene glycol (d) MS -222
69. Hypocalcin is secreted by :
(a) Urohypophysis (b) Pineal gland
(c) Adrenal gland (d) Corpus of stannius
70. Which of the following chlorine agent is widely used in the fish processing plant/prawn hatchery of India?
(a) Calcium hypochlorite (b) Chloramines
(c) Sodium hypochlorite (d) Chlorine dioxide
71. DNA and RNA are differ in:
(a) Sugar only (b) Sugar and pyrimidines
(c) Sugar and purine (d) Sugar and phosphate
72.of the total farm area are reserved for pond
(a) 50% (b) 75%
(c) 60% (d) 80%
73. What is the main purpose of constructing berm?
(a) Soil erosion (b) Strengthening of pond
(c) Netting (d) Feeding
74. Father of Blue Revolution in India:
(a) V.G Jhingran (b) Francis Day
(c) Hiralal Chaudhuri (d) M.S Swaminathan

75. In prismatic compass, the zero marked on the :
(a) North (b) West
(c) South (d) East
76. Which type of area measures give the most accurate result?
(a) Mid-ordinate rule (b) Simpson's rule
(c) Trapezoidal rule (d) None of these
77. Production of semi-intensive farming(kg/ha/year):
(a) 1,200-2,000 (b) 5,000-12,000
(c) 3,000-5,000 (d) > 12,000
78. Which type outlet is most suitable for draining bottom water?
(a) Monk type (b) Pipe made structure
(c) Open type (d) All of these
79. According to the USDA, the minimum size of the fish pond should be :
(a) 0.1 ha (b) 0.5 ha
(c) 0.2 ha (d) 0.25 ha
80. Aeration is doing in the pond water when DO becomes less than :
(a) 70% of the saturation level (b) 50% of the saturation level
(c) 60% of the saturation level (d) 90% of the saturation level
81. Stocking density of brooder prawn:
(a) 1-2/m² (b) 5-6/m²
(c) 2-3/m² (d) 5-10/m²
82. Indian major carp eggs are:
(a) Pelagic and sticky (b) Pelagic and non-sticky
(c) Demersal and sticky (d) Demersal and non-sticky
83. Size of Female rotifer is :
(a) Larger than male (b) Same with male
(c) Smaller than male (d) None of these
84. Which of the following band is a light band?
(a) A-Band (b) M-Band
(c) Z-Band (d) H-Band
85. Myocommata is a :
(a) Connective tissue (b) Membrane
(c) Muscle fibre (d) Muscle bundle
86. Stocking density of Mahua Oil Cake in a hectare pond is :
(a) 1000 kg (b) 2000 kg
(c) 1500 kg (d) 2500 kg
87. True short food chain carp :
(a) Grass carp (b) Rohu
(c) Silver carp (d) Catla

88. Functioning of brain, nerves, etc are maintained by :
- (a) EPA (b) Amino Acid
(c) DHA (d) None of these
89. Fish is superior to cereals in regard to higher content of :
- (a) Proline (b) Lysine
(c) Glycine (d) Histidine
90. The process of lost gillnets continuing to gill fishes leading to unwanted mortality is called:
- (a) Trap fishing (b) Ghost fishing
(c) Deep sea fishing (d) Drag fishing
91. In prawns, eggs hatches into
- (a) Protozoa (b) Zoea
(c) Mysis (d) Nauplius
92. Brine shrimp is related to:
- (a) Artemia (b) Rotifers
(c) Daphnia (d) Lerneae
93. The connective tissue which covers the muscle fibres are called :
- (a) Perimysium (b) Epimysium
(c) Endomysium (d) None of these
94. Fish protein is rich and low in..... and Amino Acid respectively compared to cereal protein :
- (a) Cysteine and arginine (b) Phenylalanine and tyrosine
(c) Lysine and cysteine (d) Lysine and tryptophan
95. Fish body or flesh is softer comparative to mammals' because of:
- (a) Less sarcoplasmic protein (b) Low stroma protein
(c) High myofibrillar protein (d) All of these
96. Ideal stocking density for shrimp in nursery is :
- (a) 40 PL/m³ (b) 100 PL/m³
(c) 60 PL/m³ (d) 150 PL/m³
97. Wheel animals is related to :
- (a) Artemia (b) Moina
(c) Rotifers (d) Daphnia
98. The farmers who has land holding between 1-2 hectares is known as :
- (a) Optimal farmers (b) Small farmers
(c) Marginal farmers (d) None of these above
99. Base on the duration of life cycle, zooplankton are classified into:
- (a) Mero plankton and holoplankton (b) Micro plankton and macro plankton
(c) Mero plankton and macro plankton (d) All of these
100. A decrease in temperature, increases the.....of a fatty acid
- (a) Saturation (b) Both
(c) Unsaturation (d) None of these