

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

**TECHNICAL PAPER – I**

Time Allowed : 2 hours

Full Marks : 200

*All questions carry equal marks of 2 each.*

*Attempt all questions.*

1. Colour pattern of ornamental fish comes under:
  - (a) Qualitative variations
  - (b) Both (a) & (c)
  - (c) Quantitative variations
  - (d) None of these
2. The science dealing with the various systems of inland waters, usually freshwater is called:
  - (a) Limnology
  - (b) Hydrology
  - (c) Hypology
  - (d) Inland geography
3. In soil profile, zone of eluviation is:
  - (a) O-zone
  - (b) B-zone
  - (c) A-zone
  - (d) C-zone
4. The gap between what is and what ought to be is termed as :
  - (a) Necessity
  - (b) Comfort
  - (c) Demand
  - (d) Need
5. The degree to which an innovation is perceived as better than the idea it supersedes :
  - (a) Economic advantage
  - (b) Relativity
  - (c) Relative advantage
  - (d) Cost benefit production
6. Which of the following compounds will react with sulphuric acid to form a salt and water :
  - (a) Na<sub>2</sub>SO<sub>4</sub>
  - (b) NaOH
  - (c) HCL
  - (d) CaCl<sub>2</sub>
7. Scientific name of killi fish :
  - (a) Osphronemus spp
  - (b) Aplocheilus spp.
  - (c) Betta splendens
  - (d) Xiphophorus spp.
8. Gold fish eggs are:
  - (a) Pelagic and sticky
  - (b) Pelagic and non-sticky
  - (c) Demersal and sticky
  - (d) Demersal and non-sticky
9. The amount of living tissue per unit area/ volume at a given point in time:
  - (a) Standing crop
  - (b) Both (a) & (c)
  - (c) Total biomass
  - (d) None of these

10. Organism attaché or clinging to water plants:  
(a) Nekton (b) Periphyton  
(c) Neuston (d) All of these
11. The production of small reservoir is:  
(a) 50kg/ha/yr (b) 11.5kg/ha/yr  
(c) 12.3kg/ha/yr (d) 40kg/ha/yr
12. The organisms surviving at the air –water interface :  
(a) Nekton (b) Pleuston  
(c) Neuston (d) None of these
13. It is an animal association where no partner is harmed. One or both the partners are benefited is called :  
(a) Symbiosis (b) Commensalism  
(c) Mutualism (d) None of these
14. National innovation foundation is an autonomous society established in the year :  
(a) 2000 (b) 2002  
(c) 2001 (d) 2004
15. Production function is the mathematic relationship between:  
(a) Input and input (b) Output and output  
(c) Input and output (d) Production and product
16. The Extension Education section of ICAR was established in the year:  
(a) 1971 (b) 1975  
(c) 1980 (d) 2005
17. One of the ex-situ conservation method for endangered species is:  
(a) Wildlife sanctuaries (b) Cryopreservation  
(c) Biosphere reserve (d) National park
18. Number of ecological hotspots in India is:  
(a) 01 (b) 03  
(c) 02 (d) 04
19. Functional status of an organism in its community:  
(a) Niche (b) Ecosystem  
(c) Ecotone (d) Biome
20. The average production of Indian reservoir:  
(a) 20kg/ha/yr (b) 50kg/ha/yr  
(c) 30kg/ha/yr (d) 100kg/ha/yr
21. In tropical fishes, age could be calculated from:  
(a) Vertebra (b) Scales  
(c) Otolith (d) Length frequency analysis
22. The example of colour changing ornamental fish:  
(a) Channa blecheri (b) Badis badis  
(c) Chaca chaca (d) Botia Dario

23. The ornamental fish capital in the world is:  
(a) USA (b) THAILAND  
(c) JAPAN (d) SINGAPORE
24. A life table represents:  
(a) Feeding schedule (b) Reproductive and mortality schedule  
(c) Breeding schedule (d) All of these
25. The first step in freshwater aquarium setting after fabrication:  
(a) Planting (b) Pouring Water  
(c) Fixing Plants (d) Adding Gravels
26. For keeping 1 cm of fish, the surface area of aquarium should be:  
(a) 10 cm<sup>2</sup> (b) 20 cm<sup>2</sup>  
(c) 30 cm<sup>2</sup> (d) 40 cm<sup>2</sup>
27. Spawning mops are used for breeding of:  
(a) Fighter fish (b) Gold fish  
(c) Angel fish (d) None of these
28. Profitability of a farm not dependent on :  
(a) Productivity (b) Farm price  
(c) Cost of production (d) Farm area
29. Monopoly market is characterized by :  
(a) Single buyer (b) Single seller  
(c) Large number of sellers (d) Few buyers
30. The first 'Cooperative Society Act' was passed in India :  
(a) 1897 (b) 1947  
(c) 1904 (d) 1986
31. Coral belongs to the class :  
(a) Anthozoa (b) Metazoan  
(c) Cnidarian (d) Hydrozoa
32. Organic decomposition is very slow in :  
(a) Oxygen deficient medium (b) CO<sub>2</sub> deficient medium  
(c) Oxygen high medium (d) Hydrogen high medium
33. The rate of breakdown of organic matter is rapid in :  
(a) Aerobic media (b) Both aerobic and anaerobic media  
(c) Anaerobic media (d) Nothing related to the above
34. Scientific name of yellowtail catfish:  
(a) *Heteropneustes fossilis* (b) *Pangasius hypophthalmus*  
(c) *Pangasius pangasius* (d) *Ictalurus punctatus*
35. Scientific name of Indian salmon:  
(a) *Salmo trutta* (b) *Salmo gairdneri*  
(c) *Acrossocheilus hexagonolepis* (d) *Eleutheronema tetradactylum*

36. World Fisheries Day:
- (a) 16 June
  - (b) 2 December
  - (c) 20 February
  - (d) 21 November
37. Blue Revolution in Mizoram was started in:
- (a) 2009
  - (b) 2014
  - (c) 2016
  - (d) 2012
38. Scientific name of Pacu fish:
- (a) P.sophore
  - (b) P.brachypomus
  - (c) P.pogu
  - (d) O.balangerii
39. Depreciation is the :
- (a) Reduction in total income
  - (b) Reduction in total cost
  - (c) Decline in value of asset
  - (d) None of these
40. Product differentiation is characteristics of :
- (a) Monopoly market
  - (b) Monopolistic competitive market
  - (c) Perfect competitive market
  - (d) Oligopoly market
41. Which one is not a basic principles of the production economics :
- (a) What to produce
  - (b) How to produce
  - (c) How much to produce
  - (d) Where to produce
42. Cross elasticity for complementary goods :
- (a) Positive
  - (b) Zero
  - (c) Negative
  - (d) None of these
43. The minimum mesh size permitted for fishing in most of the Indian reservoirs is:
- (a) 50 mm
  - (b) 30mm
  - (c) 15 mm
  - (d) 20 mm
44. What is the meaning of 'End' and 'Means' in the definition of economics :
- (a) Wants and resource
  - (b) Producer and consumer
  - (c) Money and goods
  - (d) Buyers and seller
45. The word Economics is derived from :
- (a) Latin word
  - (b) Greek word
  - (c) French word
  - (d) Arabic word
46. Which bacterium is used in bioremediation process :
- (a) Rhizobium sp
  - (b) Bacillus licheniformis
  - (c) Pseudomonas pudita
  - (d) Streptococcus sp
47. 'Red Data Book' provides data on :
- (a) Biota of red sea
  - (b) Threatened species
  - (c) Effect of red light
  - (d) Red pigment plant
48. The termed 'Niche' was given by :
- (a) Odum
  - (b) Tansley
  - (c) Grinnel
  - (d) R .Misra

49. Want satisfying power of commodity is called :
- (a) Desire (b) Utility  
(c) Demand (d) Wants
50. A symbiotic inter-specific relationship where one partner is benefited and other partner is not harmed
- (a) Symbiosis (b) Commensalism  
(c) Mutualism (d) Neutralism
51. The termed 'Ecology' derived from :
- (a) Arabic word (b) Greek word  
(c) Latin word (d) French word
52. Hard water contains :
- (a) Bicarbonates of Ca and Mg ions (b) Both (a) & (c)  
(c) Soluble chlorides (d) None of these
53. Scientific name of nghazawngek:
- (a) *G. khopai* (b) *G. mizoramensis*  
(c) *G. dampensis* (d) *G. anandalei*
54. Scientific name of nghalungrem:
- (a) *Hemimyzon* sp (b) *Hemiadon* sp  
(c) *G. dampensis* (d) *G. mizoramensis*
55. The efficient scale of production is the quantity of output that minimizes :
- (a) Average variable cost (b) Average fixed cost  
(c) Average total cost (d) Marginal cost
56. Change in demand of the commodity does not take place :
- (a) Change in price (b) Change in consumer income  
(c) Change taste (d) Change in price of substitute
57. Pelagic organisms are broadly classified in to:
- (a) Neuston and nekton (b) Plueuston and nueuston  
(c) Pleuston and nekton (d) Plankton and nekton
58. The name 'Plankton' is coined by :
- (a) Rirtcher (b) Hensen  
(c) Hynes (d) Tansley
59. Scientific name of lengphar:
- (a) *P.sarana* (b) *B.profundus*  
(c) *P.ticto* (d) *G.dampensis*
60. It is the analysis of intra-specific variations and evolutionary studies as speciation :
- (a) Alpha taxonomy (b) Beta taxonomy  
(c) Gamma taxonomy (d) None of these
61. Fish belongs to the phylum :
- (a) Chordata (b) Gnathostomata  
(c) Vertebrata (d) Teleostei

62. Indian lizard fish (*Saurida tumbil*) belongs to the family :
- (a) *Synodontidae* (b) *Psilorhynchidae*  
(c) *Tumbilidae* (d) *Clupeidae*
63. The proportion of sand, silt and clay in a soil is defines as:
- (a) Structure (b) Texture  
(c) Bulk density (d) Particle density
64. If the pH of pond soil is 6.6-7.5. The required lime (agriculture lime) dose kg/ha
- (a) 2000 (b) 500  
(c) 300 (d) 1000
65. The art and science of teaching adults is known as :
- (a) Pedagogy (b) Adulttology  
(c) Andragogy (d) Agogology
66. The plan of work which has been arranged chronologically is :
- (a) Evaluation (b) Annual plan of work  
(c) Programme (d) Calendar of work
67. The pH measurement is based on a scale from:
- (a) 0 to 14 (b) 0 to 12  
(c) 1 to 14 (d) 1 to 12
68. Which of the following is the correct percentage of mineral matter present in the soil:
- (a) 55 % (b) 45 %  
(c) 50 % (d) 35 %
69. Which of the following is a dibasic acid :
- (a)  $\text{HNO}_3$  (b)  $\text{H}_3\text{PO}_4$   
(c)  $\text{HCl}$  (d)  $\text{H}_2\text{SO}_4$
70. In case of two supplementary enterprises, marginal rate of product substitution is :
- (a) Positive (b) Zero  
(c) Negative (d) None of these
71. Which stage of production is called rational stage :
- (a) Stage –I (b) Stage –III  
(c) Stage -II (d) None of these
72. Which one is not a type of relationship in between input and output :
- (a) Farm –Product (b) Product – Product  
(c) Factor – Product (d) Factor –Factor
73. Largest freshwater lake in India:
- (a) Pulicat lake (b) Chilka lake  
(c) Kolleru lake (d) Loktak lake
74. Scientific name of black carp :
- (a) *Cirrhinus molitorella* (b) *Mylopharyngodon piceus*  
(c) *Molitorella molitorella* (d) *Ctenopharyngodon idella*

75. Scientific name of oriental river prawn :
- (a) *M.dobsonii* (b) *M.nipponens*  
(c) *M.malcolmsonii* (d) *M.rude*
76. Loss of individuals from one population and the addition of individuals to another population is :
- (a) Immigration (b) Catadromous migration  
(c) Emigration (d) Anadromous migration
77. In the ecosystem, the biomass of the producers are less and consumers are more :
- (a) Upright pyramid (b) Inverted pyramid  
(c) Horizontal pyramid (d) None of these
78. Scientific name of channel catfish:
- (a) *Salmo truttafario* (b) *Eleutheronema tetradactylum*  
(c) *Heteropneustes fossilis* (d) *Ictalurus punctatus*
79. Width of the rings (scales/otolith) gives an estimation of:
- (a) Health of fish (b) Age  
(c) Growth (d) Ecology of fish
80. A large regional unit characterized by a specific flora and fauna is called :
- (a) Biome (b) Ecosystem  
(c) Biosphere (d) Landscape
81. In meromictic lake, number of turnover of water per year is :
- (a) 1 (b) Zero  
(c) 2 (d) >2
82. Identify the correct order in which the lentic series evolved :
- (a) Pond, bogs, swamps, lakes (b) Swamps, lakes, ponds, bogs  
(c) Lakes, ponds, bogs, swamps (d) Lakes, swamps, ponds, bogs
83. Craft mostly used in reservoir :
- (a) Dug- out canoe (b) Lampani  
(c) Coracle (d) Dingi
84. Scientific name of Indian white shrimp:
- (a) *F.indicus* (b) *F.merguensis*  
(c) *P.monodon* (d) *L.indicus*
85. Scientific name of freshwater crayfish:
- (a) *Astacopsis gouldi* (b) *Euastacus armatus*  
(c) *Homarus armatus* (d) *Homarus gammarus*
86. Exclusive Economic Zone of Indian fisheries :
- (a) 2.02 million sq.km (b) 2.2 million sq.km  
(c) 2.35 millionsq .km (d) 3.14 million sq.km
87. Mizoram total fish production during 2016- 2017 (in M.T):
- (a) 5387 (b) 6828  
(c) 8670 (d) 7630

88. Scientific name of pig mouthed carp:  
(a) Labeo kontius (b) Labeo gonius  
(c) Labeo dyocheilus (d) Labeo pangusia
89. Government of India classified as medium reservoir ranging from :  
(a) 1000-5000 ha (b) <1000 ha  
(c) 5000-10000 ha (d) >10000 ha
90. The concept of Panchayat Raj was introduced in India on the basis of the recommendation of :  
(a) Krishnamachari committee (b) Sardar Patel  
(c) Balwant Raj Mehta committee (d) M.S Mehta
91. Proportion of early adopters in adoption in farming community is:  
(a) 2.5 % (b) 12.5 %  
(c) 34 % (d) 16.5 %
92. Number of adopters categories are :  
(a) Five (b) Six  
(c) Eight (d) Four
93. The revised CRZ notification under the environment protection act 1986 was passed in :  
(a) February, 2011 (b) February, 1991  
(c) January, 2011 (d) January, 2010
94. The greater BOD of waste water relates:  
(a) Decrease CO<sub>2</sub> content of water (b) Increase temperature content of water  
(c) Decrease O<sub>2</sub> content of water (d) All of these
95. Solar constant is.....cal/cm<sup>2</sup> min<sup>2</sup>  
(a) 2 (b) 6  
(c) 4 (d) 8
96. Chilka lake is:  
(a) Lagoon (b) Backwater  
(c) Bheri (d) Mangrove
97. Scientific name of Rainbow trout:  
(a) Salmo truttafario (b) Salmo gairdneri  
(c) Salmo solar (d) Ictalurus punctatus
98. The opaque zone in otolith is formed during:  
(a) Passive growth (b) Recruitment period  
(c) Active growth (d) None of these
99. An innovation has relatively high degree of complexity, its adoption will be :  
(a) Quick (b) Slow  
(c) Fast (d) Can't be said anything
100. The concept of Extension Education Process is given by :  
(a) J.Paul Leagans (b) Sigmund  
(c) Wilson and Gally (d) Edgar