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 22-24°C 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) Protozoea 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 50m × 20m × 1.5m. 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) CuSO4  (b) NaCl2  
   (c) CaSO4  (d) MgCO3

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) Leval 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

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