

MIZORAM PUBLIC SERVICE COMMISSION
AGRICULTURE & ALLIED SERVICES (COMBINED TECHNICAL)
EXAMINATION, 2024 FOR RECRUITMENT OF
FISHERIES EXTENSION OFFICER UNDER FISHERIES DEPARTMENT,
GOVERNMENT OF MIZORAM, DECEMBER-2024

FISHERIES PAPER-I

Time Allowed : 3 hours

FM : 200

SECTION - A (Multiple Choice questions) (100 Marks)

All questions carry equal mark of 2 each. Attempt all questions.

This Section should be answered only on the OMR Response Sheet provided.

1. Father of Blue Revolution in India.
 - (a) Modadugu Gupta
 - (b) Vishwa Gopal Jhingran
 - (c) Dr. Hiralal Chaudhuri
 - (d) K. H. Alikunhi
2. Which system involves raising fish in floating enclosures?
 - (a) Pen culture
 - (b) Cage culture
 - (c) Pond culture
 - (d) Raceway culture
3. The maximum number of organisms that can live in an pond ecosystem without permanently damaging its productive capacity.
 - (a) Carrying capacity
 - (b) Biotic Potential
 - (c) Standing crop
 - (d) Biomass
4. What is 'lentic' water?
 - (a) Flowing water
 - (b) Static water
 - (c) Ocean water
 - (d) Groundwater
5. The largest brackish water lake in Asia is-
 - (a) Wular Lake
 - (b) Chilka Lake
 - (c) Dal Lake
 - (d) Madhuri Lake
6. Which group of organisms lives at the bottom of water bodies?
 - (a) Plankton
 - (b) Nekton
 - (c) Benthos
 - (d) Zooplankton
7. What is the pH range suitable for fish culture?
 - (a) 2-4
 - (b) 6-8
 - (c) 8-10
 - (d) 10-12
8. Which soil type has the highest water holding capacity?
 - (a) Sand
 - (b) Silt
 - (c) Clay
 - (d) Gravel

9. State having the highest number of small reservoirs?
- (a) Karnataka (b) Tamil Nadu
(c) Maharashtra (d) Gujarat
10. Primary Productivity in a reservoir is estimated through-
- (a) FTIR (b) Potentiometric
(c) Spectrophotometric (d) Light and Dark Bottle
11. In India, which reservoir is well-known as “Catla Reservoir”?
- (a) Bhakra Nangal (b) Sathanur
(c) Tehri (d) Sardar Sarovar
12. What type of relationship is ‘commensalism’?
- (a) Both benefit (b) One benefits, the other unaffected
(c) Both are harmed (d) Only one is harmed
13. Which convention focuses on global biodiversity conservation?
- (a) CITES (b) CBD
(c) GATT (d) WTO
14. Which method is not an extension approach?
- (a) Individual contact (b) Social media outreach
(c) Group contact (d) Mass contact
15. The first KVK in India was established in the year-
- (a) 1974 (b) 1985
(c) 1967 (d) 1988
16. Which classification level directly precedes ‘species’?
- (a) Order (b) Class
(c) Genus (d) Family
17. Which is a measure of central tendency?
- (a) Variance (b) Standard deviation
(c) Mean (d) Range
18. The normal distribution curve is also called the-
- (a) Linear curve (b) Bell curve
(c) Gaussian curve (d) Frequency curve
19. Elasticity measures the relationship between-
- (a) Income and quantity (b) Price and demand
(c) Weight and price (d) Quantity and income
20. IPR stands for:
- (a) International Patent Rights (b) Intellectual Property Rights
(c) Integrated Property Regulations (d) Industrial Product Regulations

21. What does GDP stand for?
- (a) General Domestic Product (b) Gross Domestic Product
(c) Gross Development Potential (d) Government Development Program
22. Which of these is a live feed?
- (a) Pellets (b) Flakes
(c) Tubifex worms (d) Dry shrimp
23. Hypophysation is the-
- (a) Artificial induction of spawning (b) Egg fertilization technique
(c) Water pH measurement (d) Filter cleaning method
24. Hormone used in induced breeding is-
- (a) Melatonin (b) Cortisol
(c) Gonadotropin (d) Thyroxine
25. Which hatchery type uses high water flow for egg hatching?
- (a) Chinese hatchery (b) Glass jar hatchery
(c) Traditional hatchery (d) Semi-intensive hatchery
26. Improve catla developed by CIFA is known as-
- (a) Amar catla (b) Vijaycatla
(c) Amrit catla (d) Swadeshi catla
27. An anesthetic used in fish handling is-
- (a) Ammonium sulfate (b) Clove oil
(c) Sodium chloride (d) Ethanol
28. Integrated Multi-Trophic Aquaculture was standardized by which Institute of India?
- (a) CMFRI (b) CIFA
(c) CIFRI (d) CIFE
29. In which year for the 1st time in history Global Aquaculture production surpassed capture fisheries?
- (a) 2018 (b) 2024
(c) 2022 (d) 2020
30. Zero water exchange systems are primarily used for-
- (a) Freshwater aquaculture (b) Marine aquaculture
(c) Recirculating aquaculture (d) Cage culture
31. What is the primary criterion for selecting a candidate species for aquaculture?
- (a) High aesthetic value (b) Fast growth rate
(c) Easy availability in the wild (d) Low economic value
32. Which family does the Burmese kingfish belong to?
- (a) Siluridae (b) Cyprinidae
(c) Cichlidae (d) Clariidae

33. Which is a commercially important crustacean species in India?
- (a) *Penaeus monodon* (b) *Panulirus homarus*
(c) *Macrobrachium malcolmsoni* (d) *Pinctada fucata*
34. A lake with high nutrient levels is termed as-
- (a) Oligotrophic (b) Mesotrophic
(c) Eutrophic (d) Dystrophic
35. Which of the following is an example of nekton?
- (a) Phytoplankton (b) Zooplankton
(c) Fish (d) Benthos
36. Which soil texture is crucial for aquaculture?
- (a) Clay sand (b) Clay silt
(c) Clay loam (d) Sandy loam
37. Which chemical is used for pond disinfection?
- (a) Potassium permanganate (b) Sodium chloride
(c) Ammonium sulfate (d) Methanol
38. Which factor does not affect fish production in reservoirs?
- (a) Nutrient levels (b) Fish species
(c) Water flow rate (d) Color of the reservoir
39. Cage culture is most effective in-
- (a) Stagnant ponds (b) Flowing rivers
(c) Reservoirs (d) Rain-fed tanks
40. Which is an example of ex situ conservation?
- (a) Marine parks (b) Fish hatcheries
(c) Fish sanctuaries (d) Mangroves
41. The morpho-edaphic index is a measure of-
- (a) Aquatic species diversity (b) Reservoir depth
(c) Productivity potential (d) Fish growth rate
42. State having the longest coastline in India is-
- (a) Tamil Nadu (b) Andhra pradesh
(c) Karnataka (d) Gujarat
43. Chinese hatchery system were first developed in the year-
- (a) 1960 (b) 1987
(c) 1975 (d) 1949
44. Which is a natural method of fish breeding?
- (a) Hypophysation (b) Bundh breeding
(c) Hormone injection (d) Induced breeding

45. Which fish is known as the “King of Aquariums”?
- (a) Guppy (b) Goldfish
(c) Discus (d) Betta
46. Green certificate for ornamental fish in India is provided by-
- (a) FISHCOFED (b) CMFRI
(c) NSDC (d) MPEDA
47. Global Hub of ornamental fish trade.
- (a) India (b) Singapore
(c) US (d) China
48. Quarantine in ornamental fish farms is used to-
- (a) Prevent diseases (b) Reduce feeding
(c) Enhance coloration (d) Improve breeding rates
49. Which test is used for hypothesis testing in small samples?
- (a) Chi-square test (b) Z-test
(c) t-test (d) F-test
50. Diffusion of innovations is studied in-
- (a) Technology management (b) Extension education
(c) Fisheries economics (d) Statistical analysis

SECTION - B (Conventional Type) (100 Marks)

This Section should be answered only on the Answer Sheet provided.

Marks for each question is indicated against it.

Attempt all questions.

1. Discuss the differences between extensive, semi-intensive, intensive, and super-intensive aquaculture systems with suitable examples. (10)
2. Explain in detail the role of soil and water quality parameters in aquaculture. Discuss the methods of soil and water quality assessment and their implications for fish production. (10+5=15)
3. Evaluate the potential of reservoir fisheries in India. Discuss the role of cage and pen culture in enhancing fish production, including the challenges and strategies for effective management. (5+5=10)
4. Critically examine the role of fisheries extension methods in technology transfer and community development. (10)
5. Describe the process of induced breeding in carps, including the hormones used, methods of broodstock management, and hatchery systems employed. (10)
6. Discuss the types and characteristics of inland water bodies, focusing on lentic (ponds, lakes) and lotic (rivers, streams) systems. (10)
7. Describe the biological productivity and the factors influencing primary productivity in freshwater systems, including the roles of plankton, nekton, and benthos. (10)

8. Analyze the economic contribution of the fisheries sector to national development. Discuss microeconomic concepts such as demand, supply, elasticity, and cost-return analysis in fisheries production. (10)
9. Explain the impact of globalization, including WTO regulations and trade agreements, on fisheries trade, environmental concerns, and intellectual property rights in the Indian fisheries sector. (10)
10. Discuss the major threats to aquatic biodiversity and the conservation strategies implemented at national and international levels. (5)

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