

**FOURTH SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION
MARCH 2021**

(CBCSS)

Aquaculture and Fishery Microbiology

AFM 4E 12—AQUATIC POLLUTION AND TOXICOLOGY

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend all questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Part A

- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :

- 1 Eutrophication.
- 2 Metallothionein.
- 3 Domestic sewage.
- 4 P450 enzymes.
- 5 Biosensor.
- 6 Nitrate.
- 7 Acidification.

(4 × 2 = 8 weightage)

Part B

- II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

- 8 Write short note on Bioaccumulation, Bioconcentration and Biomagnification.
- 9 Write a note on toxicity evaluation methods at cellular level.

Turn over

- 10 Explain assessment of level of pollution based on BOD, COD and nitrogen.
- 11 Explain the toxicity of radioactive minerals and heavy metals.
- 12 Briefly explain the toxicity of fluorides and chemical fertilizers.
- 13 Briefly explain assessment and control of industrial effluent discharge.
- 14 Write a note on multilevel non-trophic interactions of toxicity.

(4 × 3 = 12 weightage)

Part C

III. Write long essay to the following. Answer any *two* questions. Each question carries 5 weightage :

- 15 Give an account on types and sources of water pollution.
- 16 Give an account on toxicants in the communities in ecosystem.
- 17 Explain assessment and pollution control due to solid waste dumping and leachate infiltration.
- 18 Write a note on surface water pollution.

(2 × 5 = 10 weightage)

**FOURTH SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION
MARCH 2021**

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Aquaculture and Fishery Microbiology

AFM 4E 08—ORNAMENTAL FISH BREEDING AND REARING

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

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Part A

- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :

- 1 Expand MPEDA and state its role.
- 2 Larvophiles.
- 3 Decapsulation.
- 4 Lymphocystis.
- 5 Name two anesthetic drugs used for transport of live fish.
- 6 Live bearers.
- 7 Infusoria.

(4 × 2 = 8 weightage)

Part B

- II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

- 8 Write short note on fungal diseases of ornamental fishes.
- 9 Maintenance of marine aquarium.
- 10 Prophylactic measures against fish diseases.

Turn over

- 11 Explain the brood stock management.
- 12 Explain the culture and maintenance of corals.
- 13 Write a short note on crustaceans in aquarium.
- 14 Comment on sponges and opisthobranchs in aquariums.

(4 × 3 = 12 weightage)

Part C

III. Write short essay to the following. Answer any *two* questions. Each question carries 5 weightage :

- 15 Give an account on common aquarium plants and their maintenance.
- 16 Briefly explain breeding of Anemone fish and damsels.
- 17 Explain Common exotic ornamental fishes in India.
- 18 Explain different agencies involved in popularization and extension of ornamental fish culture in India.

(2 × 5 = 10 weightage)

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Aquaculture and Fishery Microbiology

AFM 4C 12—DISEASE DIAGNOSIS AND AQUATIC HEALTH MANAGEMENT

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

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Part A

- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :

- 1 Oxytetracycline.
- 2 Antimicrobials.
- 3 Name two disinfectants commonly used in hatcheries.
- 4 Vertical transmission.
- 5 OIE.
- 6 Methylene blue.
- 7 BLAST.

(4 × 2 = 8 weightage)

Part B

- II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

- 8 Write short note on immunostimulants.
- 9 Briefly explain mycotic diseases.

Turn over

- 10 Write short note on Monodon Baculovirus (MBV).
- 11 Briefly explain pathenogenesis, epidemiology, treatment and control of IHN.
- 12 Briefly explain acquired immunity in finfishes.
- 13 Explain quarantine system in aquaculture.
- 14 Write a short note on disease surveillance and reporting.

(4 × 3 = 12 weightage)

Part C

III. Write long essay to the following. Answer any *two* questions. Each question carries 5 weightage :

- 15 Give detailed account of major infectious viral diseases.
- 16 Explain defense system in shellfishes.
- 17 Explain haematological and histopathological techniques in health management.
- 18 Briefly explain antibody and cell mediated immunity in finfishes.

(2 × 5 = 10 weightage)

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(CBCSS)

Aquaculture and Fishery Microbiology

AFM 4C 11—BIOTECHNOLOGY AND MOLECULAR BIOLOGY

(2019 Admissions)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

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Part A

- I. Write short answers to the following. Answer any *four* questions. Each question carries 2 weightage :

- 1 Polyribosomes.
- 2 Restriction endonuclease.
- 3 cAMP.
- 4 Centrosome.
- 5 Bioremediation.
- 6 tRNA.
- 7 Biofouling.

(4 × 2 = 8 weightage)

Part B

- II. Write short essay to the following. Answer any *four* questions. Each question carries 3 weightage :

- 8 Describe the role played by microfilament and microtubules in Cytoskeleton.
- 9 Cot Curve and its significance.
- 10 Give an account on transgenic fish.

Turn over

- 11 Write a note on Programmed Cell Death.
- 12 Describe the process of translation.
- 13 Comment on biosensors and their applications.
- 14 What is the function of each of the following enzymes in DNA replication ?
 - (a) DNA polymerase ; (b) DNA helicase ; and (c) DNA ligase.

(4 × 3 = 12 weightage)

Part C

III. Write short essay to the following. Answer any *two* questions. Each question carries 5 weightage :

- 15 Describe the process of gene cloning with its merits and demerits.
- 16 Define Mutation. Write in detail about the types of mutation.
- 17 Describe in detail spliceosome mediated splicing mechanism in eukaryotic cell.
- 18 Explain the different mechanisms of transport of components across cell membrane ?

(2 × 5 = 10 weightage)