

2017**M.Sc. 2nd Semester Examination****FISHERIES SCIENCE****PAPER—FSC-203***Full Marks : 40**Time : 2 Hours**The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.**Illustrate the answers wherever necessary.***Unit—I***(Aquatic Pollution and Ecotoxicology)*

1. Write in brief any *two* questions of the following : 2×2
- (a) Define EIA.
 - (b) What is COD ? Mention the BOD level of an ideal fish pond.
 - (c) Define pollution indicator monitoring species with example.
 - (d) State about MATC and LC₅₀.

(Turn Over)

2. Answer any *two* questions of the following : 2×4
- (a) Discuss about Eutrophication and its impact on aquatic environment.
 - (b) Give an idea about point and non-point source of aquatic pollution.
 - (c) State the role of Pollution Control Board in India.
 - (d) Write down the toxicity bioassay technique.
3. Answer any *one* question from the following : 1×8
- (a) (i) Discuss the primary and secondary treatment of Sewage.
 - (ii) Give an idea about the biomagnification.
 - (iii) Add a note on the biotransformation process of a biomolecule. 3+2+3
 - (b) (i) Give an idea about Arsenic toxicity in aquatic environment.
 - (ii) Mention the characteristics of a good Chelating agent.
 - (iii) State the Chelation therapy of heavy metal. 3+2+3

Unit—II*(Hatchery Design and Management)*

4. Write in brief any *two* questions of the following : 2×2
- (a) Write down the characteristics of psychrophilic bacteria with example.
 - (b) State the ultra structure of bacterial flagella.
 - (c) Classify bacteria on the basis of their morphology.
 - (d) What is chemotaxis ?
5. Answer any *two* questions from the following : 2×4
- (a) Write short note on :
 - (i) Magnetosome,
 - (ii) Endospore.
 - (b) Discuss physical and biological factors impacts on aquatic microorganism growth.
 - (c) Enumerate the role of microbes in sewage-fed fisheries.
 - (d) Briefly explain the impact of antibiotics on human health.

6. Answer any one question from the following : 1×8
- (a) (i) Differentiate the Gram +ve bacteria from Gram -ve bacteria on the basis of cell wall structure.
- (ii) Write the role of microbes in regeneration of phosphorous.
- (iii) Add a note on bacterial growth curve. 2+4+2
- (b) (i) Mention the name of two water and two soil inhabiting microbes in aquaculture pond.
- (ii) Discuss the role of probiotics in enhancing aquaculture productivity.
- (iii) Add a note on Trickling filter. 2+4+2
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