

**M.Sc.**

**2016**

**2nd Semester Examination**

**FISHERIES SCIENCE**

**PAPER—FSC-204**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand 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 Microbiology)**

1. Write in brief any *two* of the following : 2×2
- (a) State the source of Agar powder. Mention its uses.
  - (b) Mention the names of two nonenveloped and two enveloped RNA virus.

*(Turn Over)*

(c) Write down two names of gram +ve and two gram -ve bacteria available in aquatic environment.

(d) Distinguish between Sterilization and disinfection.

2. Answer any *two* questions from the following : 2×4

(a) State the probiotics in relation to aquaculture.

(b) Write down the Streak plate culture methods of micro organisms.

(c) Discuss the role of microbes applied in food industry.

(d) Classify bacteria on the basis of shape and size with examples.

3. Answer any *one* question of the following : 1×8

(a) (i) Mention the different Safety rules and practices in microbiology Laboratory.

(ii) Discuss different Sterilization techniques used in microbiology Laboratory.

(iii) Add a note on biofilms.  $2\frac{1}{2}+3\frac{1}{2}+2$

(b) (i) What do you mean by biogeochemical cycle in pond ecosystem.

(ii) Discuss different types of culture media.

- (iii) Write the role of microbes in nutrient regeneration with special reference to nitrogen/phosphorous cycle. 2+3+3

**Unit—II**

**(Public Health Fishery)**

4. Write short notes on any *two* of the following : 2×2
- (a) What is thermal pollution ?
  - (b) Why raw sewage is not suitable for fish farming ?
  - (c) Write down the composition of Urban Sewage.
  - (d) Name two ammonia oxidizing bacteria.
5. Answer any *two* questions from the following : 2×4
- (a) What is trickling filter and activated sludge ?
  - (b) State the environmental consequences of discharge sewage without treatment.
  - (c) Discuss different types of aquatic pollution.
  - (d) Write a note on the use of medicines in aquaculture with special reference to antibiotics and its impact on fish trade.

6. Answer any *one* questions of the following : 1×8

(a) Write short note on :

(i) Effects of Water pollution.

(ii) Aquaculture based sewage treatment. 4+4

(b) Answer the following questions :

(i) Briefly describe biological means of Sewage treatment.

(ii) What is an indicator organism ? State the criteria for an indicator organisation. 4+4

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