

2009

**AQUACULTURE MANAGEMENT AND  
TECHNOLOGY**

*(Microbiology and Public Health Fishery)*

PAPER—AMT - 3002

*Full Marks : 40*

*Time : 2 hours*

Answer **all** questions

*The figures in the right-hand margin indicate marks*

1. Answer any *four* of the following : 2 x 4
- (a) Write the importance of Prion.
- (b) What is aquatic fungi ? Give an example.
- (c) Mention the name of SSDNA containing virus.

(Turn Over)

- (d) What are the specialities of bacterial flagella?
- (e) Differentiate between capsule and slime layer.
- (f) Write the functions of mordant.
- (g) How many types of biological factors are involved in water-self purification?
- (h) Enlist the name of microbes which are exclusively involved in conversion of nitrogen.

2. Answer any *four* of the following : 4 × 4

(a) What do you mean by BOD value? Compare rural and urban sewage.

$$1\frac{1}{2} + 2\frac{1}{2}$$

(b) Differentiate Gram positive bacteria from Gram negative one. Write the nature and role of capsid as well as envelope of the virus.

$$2 + 2$$

- (c) How many types of macrophytes are found in West Bengal? Enlist the macrophytes based on their ecological importance.  $1\frac{1}{2} + 2\frac{1}{2}$
- (d) Define pollution. Write the cause of thermal and marine pollution.  $1 + 1\frac{1}{2} + 1\frac{1}{2}$
- (e) What is eutrophication? Discuss the impact of eutrophication on aquatic biota.  $1 + 3$
- (f) What is biodegradation? Give a diagrammatic explanation of biomagnification.  $1 + 3$
- (g) Define nutrient cycle. Discuss the various steps of carbon conversion in natural habitat.  $1 + 3$
- (h) What do you mean by membrane filter? Add a note on sex pili and attachment pili.  $1 + 3$
3. Answer any *two* of the following :  $8 \times 2$
- (a) Briefly describe the steps that are adopted by the farmers for culturing fish in sewage water. Mention the prospects of sewage-fed fishery in West Bengal.  $4 + 4$

- (b) Describe the tertiary treatment process of Industrial sewage. Enumerate the plate culture /technique of a microbe. 5 + 3
- (c) Illustrate the health impact of water pollution. Add a note on C.O.D. 6 + 2
- (d) Write the process and significance of lytic cycle of viral replication. Add a note on importance of aquatic fungi in freshwater aquatic ecosystem. 5 + 3
-