

**2018**

**CBCS**

**3rd Semester**

**AQUACULTURE MANAGEMENT**

**PAPER—C7T**

**(Honours)**

*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.*

***Aquatic Microbiology, Fishery Biotechnology  
and Bioinformatics***

1. Answer any five questions :

5×2

(a) Write the methods for the quantitative study of aquatic microorganisms.

*(Turn Over)*

- (b) Write a short note on microbial biofilm.
- (c) Mention the name of four freshwater fungus.
- (d) Write a short note on Taq polymerase.
- (e) Explain the central dogma of molecular biology.
- (f) Write the name of one initiation and one termination codon within DNA.
- (g) What is 'VNTR'?
- (h) Write down the importance of 'ORF'-finder in bioinformatics.

2. Answer any *four* questions : 4×5

- (a) Briefly describe the factors affecting the growth of microorganisms in water.

- (b) (i) What is Gratuitous inducer ?
- (ii) What are Lac I<sup>-d</sup> and Lac I<sup>s</sup> mutation.
- (iii) Explain positive regulation of Lac operon in *E. Coli*. 1+1+3
- (c) Write notes on :
- (i) Nitrogen cycle ;
- (ii) Recombinant DNA technology.  $2\frac{1}{2}+2\frac{1}{2}$
- (d) Discuss the role of microbes in the production and breakdown of organic matter.
- (e) Briefly discuss the procedure of sewage treatment and its use in aquaculture.
- (f) (i) Write down the key features of a cloning vector that necessary for their functions.
- (ii) State the contrast and compare Type I, Type II and Type III restriction endonuclease. 2+3

3. Answer any *one* question : 1×10

(a) (i) Write a note on Hybridoma technology and its use.

(ii) Briefly describe the steps of PCR and its application in fisheries. 5+5

(b) Short Notes :

(i) Bio-remediation

(ii) NCBI

(iii) Western blotting

(iv) Biosensors

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