



বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY
Question Paper

B.Sc. Major Examinations 2022

(Under CBCS Pattern)

Semester - IV

Subject : INDUSTRIAL FISH AND FISHERIES

Paper : C 8-T

Fish Immunology and Microbiology

Full Marks : 40

Time : 2 Hours

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Answer any **four** of the following questions : 5×4=20
- (a) Briefly describe first line defence of fish. 5
- (b) Give an account on causes of fish spoilage. 5
- (c) What is microbial biofilm? Write on importance of microbial biofilms. 2+3
- (d) What are the factors determining immunogenicity of a molecule ? 5
- (e) Classify different types of bacteria culture media with proper example. 5
- (f) Write down the process of Phagocytosis. 5
2. Answer any **two** of the following questions : 10×2=20
- (a) What is biogeochemical cycle ? Elucidate the process of N₂ cycle with proper diagram. 2+8=10

P.T.O.

(b) Write short note on :

4×2½=10

(i) Haematopoiesis

(ii) Immunoglobulins

(iii) Pinocytosis

(iv) NK cell

(c) What is bioremediation ? Write down the different phases of bacterial growth. State the different factors that affect bacterial growth. 2+4+4=10

(d) What is sewage ? Write down the physico-chemical characteristics of sewage. Briefly discuss the biological sewage treatment process. 2+4+4=10

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