WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 5th Semester Examination, 2020, held in 2021

IFFACOR11T-INDUSTRIAL FISH AND FISHERIES (CC11)

FISHERY MICROBIOLOGY AND FISH PATHOLOGY

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate marks of question.
Candidates should answer in their own words and adhere to the word limit as practicable.

1.   Answer any *seven* questions from the following: 2×7 = 14

   (a) Define fimbriae and specify their function.

   (b) What do you mean by coenocyte? Give example.

   (c) Defiene innate and acquired immunity.

   (d) What is adjuvant? Give example.

   (e) What is Pleomorphism in bacteria? Give example.

   (f) What is Eclipse period in Phage virus?

   (g) Specify the importance of using selective media in bacterial culture.

   (h) Differentiate between Gram positive and Gram negative bacteria.

   (i) Define immunogenicity and pathogenicity.

2.   Write short notes on any *two* of the following: 3×2 = 6

   (a) Capsomere

   (b) Ichthyophthiriasis

   (c) Plasmid

   (d) Criteria of healthy fish seed.

3.   Answer any *four* questions from the following: 5×4 = 20

   (a) Describe the ultrastructure of flagella of bacteria with labelled diagram. Which   4+1
       structure helps bacteria to tolerate environmental conditions?

   (b) Describe bacterial growth curve considering the different phases with a labelled   3+2
       graph. Classify bacteria on the basis of number and arrangement of flagella.

   (c) What do you mean by abiotic phase of Biogeochemical cycle? Write an account   2+3
       of biotic nitrogen fixation.

(d) What is the objective of pure culture? Describe commonly used methods of pure culture of microorganisms. 1+4

(e) Define probiotics and mention their roles in fish immunity. Describe the different factors affecting the microbial fish spoilage. 3+2

(f) Describe the structural components of phage virus used for transferring genetic material into host bacteria. Differentiate between *Gyrodactylus* and *Dactylogyrus*. 4+1

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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