समानो मन्त्रः समितिः समानी

UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 1st Semester Examination, 2021

CC2-MICROBIOLOGY

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any *five* questions from the following: 1×5 = 5
   (a) What is Jaccard's Coefficient?
   (b) Name the reagents required for acid fast staining.
   (c) What do you mean by spheroplast?
   (d) What do you mean by ribotyping?
   (e) Define disinfectant.
   (f) Give one example of Complex media and Selective media.
   (g) What is signature sequence?
   (h) Define chromophore.

2. Answer any *three* questions from the following: 5×3 = 15
   (a) Discuss the working principle and application of phase contrast microscope.   5
   (b) Describe two different methods of isolation of pure culture. Write the mode of   3+2
       action of phenol to control microbial growth.
   (c) Explain the structure of endospore.   5
   (d) Calculate the final population of bacteria after six generation having initial   3+2
       population count 2×10^4 CFu/ml. Define generation time.
   (e) What component constitute the LPS layer of Gram (−) ve bacteria? Explain with   5
       proper diagram.

3. Answer any *two* questions from the following: 10×2 = 20
   (a) Describe the Fluid mosaic model of Plasma membrane. How does Plasma   6+4
       membrane of bacteria differ from those of archaea?
   (b) Write the principle of electron microscopy. State the differences between SEM   5+5
       and bright field microscopy.
   (c) Write about the general characteristics of Archae. Add a note on economic   6+4
       importance of low G+C Firmicutes.
   (d) Explain how, classification of bacteria on the basis of 16S rRNA sequencing and   5+5
       FAME analysis are done.

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