



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 4th Semester Examination, 2022

CC9-MICROBIOLOGY

ENVIRONMENTAL 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 COD?
 - (b) What are Xenobiotics?
 - (c) Define Commensalism.
 - (d) Name one phosphate solubilizing bacteria.
 - (e) What are oligotrophs?
 - (f) What is Vesicular-arbuscular mycorrhizae?
 - (g) What is trickling filter system?
 - (h) What is biogeochemical cycling?
2. Answer any **three** questions from the following: 5×3 = 15
- (a) Describe the adaptive features of hyperthermophiles. 5
 - (b) Elucidate the Carbon cycle giving special emphasis on the role of microorganisms involved. 5
 - (c) Write short notes on: 2½+2½
 - (i) Functions of biosurfactants
 - (ii) Phosphate immobilization.
 - (d) What are the two patterns of benzene ring degradation? 2½+2½
 - (e) What is an indicator organism? Why are coliforms used as indicator organisms? 2+3
3. Answer any **two** questions from the following: 10×2 = 20
- (a) Write short notes on: 5×2 = 10
 - (i) Aquatic microflora
 - (ii) Structural features and characteristics of Xenobiotic compounds.
 - (b) Describe about the various types of positive and negative microbial interactions. 5+5
 - (c) What is most probable number (MPN)? Why is the plate count procedure highly criticized for use in environmental studies? Why is it still employed? 2+6+2
 - (d) State about the sources and types of solid waste. Discuss about the various types of secondary treatment of sewage water. 4+6

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