Total Pages : 3   Roll No. ....

ENSE-653/EVS-507

ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY

M.Sc. Environmental Science (MSCES)

Examination, June 2025

Time : 2:00 Hrs.   Max. Marks : 70

Note :– This paper is of Seventy (70) marks divided into two (02) Sections 'A' and 'B'. Attempt the questions contained in these sections according to the detailed instructions given therein. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.***

Section–A

Long Answer Type Questions   2×19=38

Note :– Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. What is toxicants and toxicity? Discuss in details the factors influencing toxicity.

2. What are biological wastewater treatment. Discuss the process in detail.

3. Give a detail account of Biodegradation of solid wastes.

4. What do you understand by Gene transfer? Describe various important tools and steps involved in gene transfer.

5. What do you mean by the term Xenobiotic. Discuss the sources and classification of xenobiotic.

Section–B

Short Answer Type Questions   4×8=32

Note :– Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Describe the cell structure and characteristics of prokaryotes and eukaryotes.

2. What is solid waste? What is the role of composting in solid waste treatment?

3. Describe the structure of Chromosome with the help of suitable diagram.

4. Write a difference between batch and continuous culture.

5. What is recombinant DNA? Write the processes involved in construction of recombinant DNA.

6. What are the ethical issues of safety of GEOS.

7. Write down the Advantages and Disadvantages of GMOs

8. Write short note on (any two) of the following:

   (a) MPN index

   (b) Gene and Plasmids

   (c) Recalcitrant compounds

   (d) Indicator microorganism

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