U.G. 5th Semester Examination-2021

ENVIRONMENTAL SCIENCE

[HONOURS]

Course Code : ENVS-H-CC-L-11

(Environmental Biotechnology)

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

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

1. Answer any **five** of the following: 2×5=10

   a) Define mobile DNA.

   b) Write down the role of tRNA in translation.

   c) Define start codon and stop codon.

   d) Define phytoremediation.

   e) Write down the functions of ligase.

   f) What is artificial chromosome?

   g) Define bioventing.

   h) Define biofuel.

2. Answer any **two** of the following: 5×2=10

   a) How wastewater is treated in constructed wetland?

   b) Illustrate the application potential of biopesticide.

   c) Write a short note on Okazaki fragment.

   d) Explain the hierarchical structure of amino acids.

3. Answer any **two** of the following: 10×2=20

   a) Define recombinant DNA technology and restriction endonuclease enzyme. How recombinant DNA technology can be used as a tool in strain development? Write down the functions of DNA and RNA polymerases. 3+3+4=10

   b) What are the different forms of RNA? Explain with the help of a neat sketch the mechanism of transcription in RNA. Write down the biological significance of reverse transcriptase. 3+5+2=10

   c) Define bioremediation. Explain in brief the significance of bioremediation in environmental management. Write down the mechanism of degradation of xenobiotic compounds in environment. 2+3+5=10

   d) Define biofertilizer. Emphasize the significance of PGPR as biofertilizer. Write a note on microbial extraction of copper. 2+3+5=10

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