

**2023/TDC(CBCS)/ODD/SEM/
EESHCC-302T/392**

TDC (CBCS) Odd Semester Exam., 2023

ECOLOGY AND ENVIRONMENTAL SCIENCE

(Honours)

(3rd Semester)

Course No. : EESHCC-302T

(Environmental Biotechnology)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

SECTION—A

**Answer ten questions, selecting any two from
each Unit : 2×10=20**

UNIT—I

- 1. Write a note on aDNA.**
- 2. Briefly cite the biological functions of DNA.**
- 3. Write a note on mRNA.**

(2)

UNIT—II

4. Give two examples each of essential and non-essential amino acids.
5. Write the general properties of proteins.
6. Write two characteristics of a prokaryotic cell.

UNIT—III

7. Write a note on bacteriophage.
8. Write about the origin of recombinant DNA.
9. Write the uses of cDNA library.

UNIT—IV

10. What are the major sources of solid waste pollution?
11. Write a short note on constructed wetland.
12. Differentiate between compost and vermicompost.

(3)

UNIT—V

13. Write about the importance of biofertilizers.
14. Define leaching. What causes metal leaching?
15. List four mining methods.

SECTION—B

Answer *five* questions, selecting *one* from
each Unit : 5×10=50

UNIT—I

16. Explain the structure of tRNA with appropriate diagram. Add a note on functions of RNA. 4+2=6
17. Write about the physical properties of DNA with special emphasis on UV-absorption spectra of DNA. 6

UNIT—II

18. Briefly describe the hierarchical structure of proteins with appropriate diagrams. 6
19. Describe the mechanism of central dogma in biology with necessary steps. 6

UNIT—III

20. Briefly describe about the tools of recombinant DNA technology. 6
21. Cite three differences between genomic library and cDNA library. Add a note on cloning vectors. 3+3=6

UNIT—IV

22. Describe the various steps involved in wastewater treatment. Add a note on sludge. 4+2=6
23. (a) Describe the bioremediation technologies used in wastewater treatment.
- (b) Briefly describe about ecological restoration. 3+3=6

UNIT—V

24. Define Integrated Pest Management (IPM) and describe the parts of an IPM. 4+2=6
25. What are biofuels? Describe the various categories of biofuels. 2+4=6

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