TDC (CBCS) Odd Semester Exam., 2023

ECOLOGY AND ENVIRONMENTAL SCIENCE

(Honours)

(5th Semester)

Course No. : EESHCC-502T

(Organismal and Evolutionary Biology)

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 Era.

2. What do you mean by periods?

3. Point out the major events in the evolutionary time scale.

UNIT—II

4. Write a note on variation.

5. Write about natural selection.

6. Briefly explain struggle for existence.

UNIT—III

7. Write about the 'first cell'.

8. Write a brief note on anaerobic metabolism.

9. Write a note on abiotic synthesis of organic polymer.

UNIT—IV

10. Write a note on molecular clocks.

11. Write a note on nucleotide sequence analysis.

12. Give a short account of gene duplication.

UNIT—V

13. What is co-evolution?

14. Define gene pool.

15. Write a note on gene frequency.

SECTION—B

Answer *five* questions, selecting *one* from each Unit : 6×5=30

UNIT—I

16. Give a detailed account of origin of multicellular organisms.

17. Describe stages in primate evolution with suitable examples.

UNIT—II

18. Who was Mendel? Describe dihybrid cross of Mendel. 1+5=6

19. Give a detailed account of evolutionary synthesis.

UNIT—III

20. Give a detailed account of evolution of unicellular eukaryotes.

21. Describe Oparin-Haldane hypothesis of chemical origin of life. Add a note on Miller's experiment. 4+2=6

UNIT—IV

22. Give an illustrated account of molecular tools in phylogeny.

23. Describe origin of new genes in detail.

UNIT—V

24. Write notes on the following : 3×2=6

(a) Migration

(b) Genetic drift

25. Describe Hardy-Weinberg law of equilibrium. Mention its significance. 4+2=6

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