TDC (CBCS) Odd Semester Exam., 2021
held in March, 2022

ECOLOGY AND ENVIRONMENTAL SCIENCE

(5th Semester)

Course No. : EESHCC-501T

(Biodiversity and Conservation)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. Mention one latitudinal trend observed in biodiversity patterns.

2. Give an example of seasonal fluctuation in biodiversity patterns.

3. Give one importance of conservation of biodiversity.

4. Define species density. Give its units.

5. Define gamma diversity.

6. Mention one qualitative method of biodiversity estimation.

7. Mention one economic value and one aesthetic value of biodiversity.

8. Define biogeochemical cycle. Give one example.

9. Define primary productivity.

10. What is the difference between natural and anthropogenic disturbance? Give one example of each. 1+1=2

11. Define invasive species. Give one example. 1+1=2

12. What is deforestation?

13. Define biosphere reserves. Give one example of a biosphere reserve in North-East India. 1+1=2

14. Define a biodiversity hotspot. How many biodiversity hotspots are there in India?

15. What is joint forest management?

SECTION—B

Answer any *five* of the following questions : 6×5=30

16. Discuss with examples and diagrams the elevational trends in biodiversity patterns.

17. Discuss with examples the temporal patterns of biodiversity and its significance.

18. What is the full form of NCBI? Discuss the role of NCBI database. 1+5=6

19. Discuss the sampling strategies for floristic survey.

20. What are the ecosystem services of biodiversity? Discuss their importance.

21. What is the hydrological cycle? Discuss its importance. 1+5=6

22. Discuss man-wildlife conflicts with examples.

23. What are the causes of habitat fragmentation? Discuss the effects of habitat fragmentation. 3+3=6

24. Discuss the role of local communities and traditional knowledge in biodiversity conservation.

25. Discuss the various *ex-situ* conservation techniques.

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held in March, 2022

ECOLOGY AND ENVIRONMENTAL SCIENCE

(5th Semester)

Course No. : EESHCC-502T

(Organizational 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 any *ten* of the following questions : 2×10=20

1. What is an epoch?

2. Name the different 'era' on evolutionary time scale.

3. During which epoch was the primate first evolved?

4. What is evolution?

5. Write Darwin's theory on evolution.

6. What is 'survival of the fittest'?

7. What is aerobic metabolism?

8. Write Oparin-Haldane hypothesis.

9. Define eukaryotic cell.

10. What are molecular clocks?

11. Write the consequences of genetic drift.

12. Name the molecular tools in phylogeny.

13. What is the concept of gene pool?

14. Define adaptive radiation.

15. Define peripatric and parapatric speciation.

SECTION—B

Answer any *five* of the following questions : 6×5=30

16. Describe the origin of major group of plants and animals.

17. Explain the stages of primate evolution including *Homo*.

18. Describe the evolutionary synthesis.

19. Explain the concept of Lamarckism with examples.

20. Write briefly on photosynthesis and anaerobic metabolism.

21. Describe the experiment conducted by Miller.

22. Explain the molecular tools in phylogenetic classification and identification.

23. What is gene duplication? How are protein and nucleotide sequences analysed?

24. Describe the concepts and rate of change in gene frequency through natural selection.

25. Describe the isolating mechanisms in population genetics.

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