2020/TDC(CBCS)/ODD/SEM/
EESHCC-502T/397

TDC (CBCS) Odd Semester Exam., 2020
held in March, 2021

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

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

(a) What is geological timescale?

(b) Define the term 'era'.

(c) What are the different periods on evolutionary timescale?

(d) Name the oldest era.

(e) What is adaptation?

(f) What do you mean by genetic variation?

(g) How is gene mutation involved in evolution?

(h) What is natural selection?

(i) What are aerobic and anaerobic metabolisms?

(j) Define monomer and polymer.

(k) How does anaerobic metabolism work?

(l) What are present-day prokaryotes? Give two examples.

(m) Write the name of two major mechanisms that lead to evolution.

(n) What is genetic drift?

(o) What do you mean by molecular clocks?

(p) Define gene duplication.

(q) What is gene pool?

(r) What is the significance of population genetics?

(s) What is gene frequency?

(t) Name the major variants of speciation.

(Continued)

SECTION—B

Answer *any* **five** questions

2. Describe different aspects of evolutionary timescale. 6

3. Explain the origin of unicellular and multicellular organisms. 6

4. Describe evolution of organisms with special reference to Lamark's concept. 6

5. Explain Darwin's theory of evolution with example. 6

6. Write briefly the Oparin-Haldane hypothesis on the evolution of cell. 6

7. Write the evolution of unicellular eukaryotes and explain its stages involved in evolution. 6

8. What is phylogeny? How are protein and nucleotide sequences analyzed? 1+5=6

9. Describe the natural evolution of molecules. 6

10. What is genotype frequency? Describe Hardy-Weinberg law and its principles. 2+4=6

11. Define migration and genetic drift. Describe the phenomena involved in both and the similarities between the two. 2+4=6

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