

Total No. of Printed Pages—4

**6 SEM TDC ZOOH (CBCS) C 14**

**2 0 2 3**

( May/June )

**ZOOLOGY**

( Core )

Paper : C-14

( **Evolutionary Biology** )

Full Marks : 53

Pass Marks : 21

Time : 3 hours

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

1. Select the correct answer : 1×5=5

(a) What was the source of energy at the  
time of origin of life?

(i) Heat

(ii) Cosmic rays

(iii) Lightning

(iv) All of the above

( Turn Over )

(b) In which era did unicellular organisms originate?

- (i) Paleozoic era
- (ii) Proterozoic era
- (iii) Archeozoic era
- (iv) Mesozoic era

(c) Which of the following ideas was proposed by Lamarck?

- (i) Use and disuse of structures
- (ii) Natural selection
- (iii) Struggle for existence
- (iv) None of the above

(d) A drastic reduction in the size of a population that can change allele frequency is called

- (i) the bottleneck effect
- (ii) the founder effect
- (iii) the gene flow effect
- (iv) mutation

(e) Which of the following organisms are least closely related?

- (i) Organisms that share a domain
- (ii) Organisms that share a family
- (iii) Organisms that share a genus
- (iv) Organisms that share a species

2. Write short notes on any *two* of the following : 4×2=8

- (a) RNA world
- (b) Bottleneck phenomenon
- (c) Allopatric speciation
- (d) Origin of variations

3. Describe the process of chemical origin of life on earth. Which experiment supported this theory? 6+2=8

Or

Explain the process of origin of species as described by Darwin. 8

4. What are transitional forms? Describe one transitional form of fossil. Add a note on evolution of horse. 1+3+4=8

Or

What is a molecular clock? Explain the neutral theory of molecular evolution. 2+6=8

5. Discuss the role of mutation in changing allele frequencies. What are the factors that disrupt Hardy-Weinberg equilibrium? 4+4=8