

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

**P23/787**

( Turn Over )



( 2 )

- (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

P23/787

( Continued )

( 3 )

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

P23/787

( Turn Over )



( 4 )

Or

What is kin selection? Discuss the effect of different types of selection on a population.

2+6=8

6. Describe with the help of an example, the K-T extinction event and its role in evolution. 8

Or

What are different modes of speciation? Explain the role of isolating mechanism in speciation.

3+5=8

7. What is a phylogenetic tree? Explain the process of construction and interpretation of phylogenetic trees. 2+3+3=8

Or

Discuss how modern man evolved from primitive primates.

8

★★★