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

**2 0 2 2**

( June/July )

**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) Mesozoic era is called the age of

(i) Fishes

(ii) Mammals

(iii) Reptiles

(iv) Birds

( 2 )

- (b) The modern view of Natural Selection refers to the
- (i) differential death
  - (ii) differential survival
  - (iii) differential struggle
  - (iv) differential reproductive success
- (c) An isolating mechanism that prevents successful fertilization is called
- (i) zygote mortality
  - (ii) pre-zygote mechanism
  - (iii) post-zygote mechanism
  - (iv) hybrid sterility
- (d) Variation is a phenomenon at
- (i) species level
  - (ii) population level
  - (iii) genetic level
  - (iv) geographic level
- (e) The neutral theory states that
- (i) selection at molecular level is neutral and does not have any effect on individual fitness
  - (ii) the evolutionary theories are all neutral in sense

( 3 )

- (iii) the natural selection force is by and large neutral on all the individuals in the nature
- (iv) None of the above

2. Write short notes on (any two) : 4×2=8

- (a) Neo-Darwinism
- (b) Founder's effect on origin of new species
- (c) Biological species concept
- (d) Density-dependent selection
- (e) Phylogenetic tree

3. What is fossil? Describe the types of fossil and their significance in evolutionary biology.

1+3+4=8

Or

What is geological time scale? Describe about the characteristic of Cenozoic era.

8

4. What is variation and its significance? Describe the different types of variation.

2+6=8

Or

Write a note on heritable variations. Describe the role of heritable variation in evolution.

2+6=8

( 4 )

5. Describe Hardy-Weinberg's law and its application. Write a brief note on gene pool.

3+5=8

*Or*

Discuss how genetic drift and migration affect genetic equilibrium in a population. 8

6. Describe about allopatric and sympatric types of speciation with suitable examples. 8

*Or*

Describe briefly about the mechanism of adaptive radiation with suitable example.

7. Discuss about the effect of mass extinction. Mention unique characteristic of hominins. 8

*Or*

Discuss about the abiogenesis of simple organic molecules on the primitive earth atmosphere.

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