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6 SEM TDC ZOOH (CBCS) C 14

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(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

- (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) : $4 \times 2 = 8$

- (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.
