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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.
