

Total number of printed pages-7

3 (Sem-6) ZOO M 2

2020

ZOOLOGY

(Major)

Paper : 6·2

(Evolution and Adaptation)

Full Marks : 60

Time : Three hours

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

1. Multiple choice questions : $1 \times 7 = 7$

(a) Homology does not refer to

(i) divergent evolution

(ii) common descent

(iii) convergent evolution

(iv) adaptive radiation

Contd.

(b) Peripatus is connecting link between

(i) Annelida and Mollusca

(ii) Annelida and Helminth

(iii) Annelida and Arthropoda

(iv) All of the above

(c) The modern synthetic theory of evolution is based on

(i) genetic and chromosomal mutation

(ii) genetic recombination and natural selection

(iii) reproductive isolation

(iv) All of the above

(d) Diversity in the beaks of finches adapted to different feeding habit on Galapagos islands as observed by Darwin, provides evidence for

(i) interspecific variation

(ii) intraspecific competition

(iii) origin of species by natural selection

(iv) intraspecific variation

(e) The non-directional force that alters Hardy-Weinberg equilibrium is

(i) gene flow

(ii) mutation

(iii) genetic drift

(iv) gene recombination

(f) Adaptation is a type of

- (i) speciation
- (ii) adaptive radiation
- (iii) convergent evolution
- (iv) divergent evolution

(g) Match and select the correct set :

Set-I

- A. Mesozoic
- B. Devonian
- C. Palaeocene
- D. Permian

Set-II

- 1. First land vertebrates
- 2. Proliferation of reptiles
- 3. Raise of modern mammals
- 4. Radiation of primitive mammals
- 5. 160 million years

(i) A = 5, B = 4, C = 3, D = 2

(ii) A = 5, B = 1, C = 4, D = 2

(iii) A = 5, B = 1, C = 2, D = 5

(iv) A = 5, B = 1, C = 4, D = 3

2. Write short notes on the following: $2 \times 4 = 8$

- (a) Recapitulation theory
- (b) Lateral line system in fish
- (c) Mimicry and protective colouration
- (d) Characteristics feature of Mesozoic era

3. Answer the following in brief: $5 \times 3 = 15$

(any three)

- (a) What are the 'zoogeographical barriers'? How do these barriers affect the distribution of animals?
- (b) Describe significance of Ramapithecus and Siwalika Hills with reference to human evolution.
- (c) Write on the role of mimicry in evolution.
- (d) Write evolutionary history in the origin of birds.

(e) Write on bottleneck effect and founder effect of genetic drift.

4. (a) Give an account of Darwin's theory of evolution. Discuss the theory in the light of modern researches. 5+5=10

Or

(b) Describe the Stanley Miller's experiment and explain how it proves the biochemical origin of life. 5+5=10

5. (a) Write an essay on the evidences in support of the theory of evolution as illustrated by embryology and comparative anatomy. 5+5=10

Or

(b) What is species? Explain the mechanism of speciation through isolation. 2+8=10

6. (a) Give an account of ancestry of horse incorporating the paleontological history of the modern horse. 5+5=10

Or

- (b) Give an account of geological periods and indicate the groups of animals characteristic of those periods. 10
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