

2018

ZOOLOGY

( Major )

Paper : 6.2

( **Evolution and Adaptation** )

*Full Marks : 60*

*Time : 3 hours*

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

1. Choose the correct answer : 1×7=7

(a) Which of the following helps a prey species advertise to predators that it is unpalatable?

- (i) Primary compounds
- (ii) Aposematic colouration
- (iii) Cryptic colouration
- (iv) All of the above



(b) For a Batesian mimicry system to work, which of the following statements are true?

- (i) The predator must be able to recognize the model
- (ii) The model must outnumber the mimic
- (iii) Both (i) and (ii)
- (iv) None of the above

(c) A non-toxic organism whose colouration resembles a poisonous organism is an example of

- (i) Batesian mimicry
- (ii) Müllerian mimicry
- (iii) cryptic colouration
- (iv) None of the above

(d) The first forms of life were

- (i) chemoautotrophs
- (ii) autotrophs
- (iii) eukaryotes
- (iv) chemoheterotrophs

(e) Two zoogeographical regions separated by high mountain ranges are

- (i) Oriental and Australian
- (ii) Nearctic and Palearctic
- (iii) Palearctic and Oriental
- (iv) Neotropical and Ethiopian

(f) The ancestral man in the Pleistocene was

- (i) Australopithecus
- (ii) Neanderthal
- (iii) Dryopithecus
- (iv) Pliopithecus

(g) In primitive earth, energy was predominated by

- (i) lightning
- (ii) volcanic eruptions
- (iii) UV light
- (iv) All of the above

2. Write briefly on the following :

2×4=8

- (a) Allopatric speciation
- (b) Cro-Magnon
- (c) Adaptive radiation
- (d) Industrial melanism

3. Write short notes on any three of the following :

5×3=15

- (a) Biochemical evidences of organic evolution
- (b) Volant adaptation



- (c) Cryptic colouration
- (d) Biogeographical realms
- (e) Miller-Urey experiment

4. Highlight the main principles of Neo-Darwinism and Neo-Lamarckism. 10

Or

Discuss the concept of modern synthetic theory of evolution. 10

5. What were the main drawbacks of Hugo de Vries' mutation theory? Add a note on the concept of germplasm theory. 5+5=10

Or

Trace the evolutionary history of horse based on the available fossil records by providing necessary illustrations. 8+2=10

6. Define microevolution. Provide examples to support this concept. How does it differ from megaevolution? 2+3+5=10

Or

Explain with examples the genetic and geographical modes of speciation. 5+5=10

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