

3 (Sem-6) ZOO M 2

2014

ZOOLOGY

(Major)

Paper : 6.2

Full Marks : 60

Time : 3 hours

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

Answer **all** questions

1. Choose the correct answer : 1×7=7

(a) The Urey-Miller experiment recreated chemical reactions in a

- (i) neutral atmosphere
- (ii) reducing atmosphere
- (iii) deep-sea vent
- (iv) carbonaceous chondrite

(b) The correct sequence of forms in the phylogeny of horse is

- (i) Hyracotherium → Miohippus
→ Mesohippus → Parahippus
- (ii) Hyracotherium → Mesohippus
→ Parahippus → Miohippus
- (iii) Hyracotherium → Parahippus
→ Mesohippus → Miohippus
- (iv) Hyracotherium → Mesohippus
→ Miohippus → Parahippus

(2)

(c) The evolutionary theory in which new species are believed to arise by a single mutational event was proposed by

(i) Lamarck

(ii) Darwin

(iii) De Vries

(iv) Dobzhansky

(d) Petrification is the process of fossilization which involves

(i) gradual replacement of organic material in dead tissues by minerals dissolved in water

(ii) entrapment of animals in amber

(iii) burial of animals in tar

(iv) formation of casts of animal forms

(e) The use of bright colours and patterns by noxious animals to avoid predation is

(i) crypsis

(ii) aposematism

(iii) Batesian mimicry

(iv) Mullerian mimicry

(3)

(f) In prebiotic chemistry, formaldehyde is a precursor for the synthesis of

(i) amino acids

(ii) sugars

(iii) purines

(iv) pyrimidines

(g) Which of the following is not prezygotic isolation?

(i) Ecological isolation

(ii) Gametic isolation

(iii) Mechanical isolation

(iv) Hybrid sterility

2. Answer briefly : 2×4=8

(a) What are the two essential functions of RNA in the 'RNA world' scenario?

(b) What is disruptive selection?

(c) What is Wallace's line?

(d) What is the Germplasm theory?

3. Write short notes on (any three) : 5×3=15

(a) Embryological evidences of evolution

(b) Microevolutionary processes

(c) Australopithecines

(d) Dating of fossils

(e) Batesian mimicry and Mullerian mimicry

4. Discuss the essential features of the synthetic theory of evolution. 10

Or

Discuss the basic principles of Darwin's theory of evolution.

5. Give an account of the origin of birds and comment on the evolution of avian flight. 8+2=10

Or

What are the basic geographic modes of speciation? Discuss speciation occurring in geographically isolated populations. 2+8=10

6. What is adaptive radiation? Give an account of adaptive radiation in mammals. 2+8=10

Or

Distinguish between primary and secondary aquatic adaptations. Describe the adaptive modifications of animals in an aquatic environment. 2+8=10

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