

1044

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6. (a) What conditions are necessary for maintaining Hardy-Weinberg equilibrium in a population?
- (b) What evidence is required before concluding that an allele pair is in Hardy-Weinberg equilibrium?
7. What do you mean by indirect evidence of organic evolution? Describe various evidences from comparative morphology and anatomy or from physiology, biochemistry, embryology, vestigial organs, and connecting links.
8. (a) Define fossils and describe the methods to determine the age of fossils.
- (b) How are fossils formed? Describe the significance of fossils in organic evolution.

(200)

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[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1044

C

Unique Paper Code : 32181502

Name of the Paper : Organismal and Evolutionary Biology

Name of the Course : B.Sc. Hons. Environmental Sciences – Core

Semester : V

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

1. Answer the following questions :

(a) Fill in the blanks :

- (i) According to _____ theory, evolution is descent with modification.

P.T.O.

(ii) Germplasm theory was proposed by _____ .

(iii) _____ is the era of primitive life.

(iv) _____ is an example of a vestigial structure.

(v) The preserved remains of organisms that lived in the past are called _____ .

(b) Define the following (**any five**) :

(i) Evolution

(ii) Gene pool

(iii) Point mutation

(iv) Variation

(v) Paleontology

(vi) Speciation

(vii) Genetic drift

2. Write short notes on **any three** :

(a) Urey and Miller's Experiment

(b) Hypothesis of Punctuated Equilibrium

(c) Founder Effect

(d) Weismann's Germ Plasm Theory

(e) Natural Selection

3. Differentiate between the following (**any three**) :

(a) Unicellular and Multicellular organisms

(b) Lamarck's theory and Darwin's theory of evolution

(c) Peripatric speciation and Parapatric speciation

(d) Microevolution and Macroevolution

(e) Homology and Analogy

4. (a) What is adaptive radiation? Explain the phenomenon by citing suitable examples.

(b) Describe the physical and geographical barriers to adaptive radiation.

5. Describe different theories for the origin of life on earth. Discuss the Oparin-Haldane theory of the origin of life in detail.