

(6 pages)

Reg. No. :

Code No. : 10359 E Sub. Code : EMZO 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2025

Fourth Semester

Zoology – Core

Major – GENETICS AND EVOLUTION

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Skin colour in man is controlled by
(a) Lethal genes (b) Multiple gene
(c) Recessive gene (d) Multiple allele
2. Choose the self duplicating cytoplasmic particle in paramecium
(a) Plasmid (b) Nucleoid
(c) Cosmid (d) Kappa particle

3. Which one of the following is called bleeders disease.
(a) Anemia (b) Colour blindness
(c) Haemophilia (d) Alkaptonuria
4. The Y-linked genes are also called
(a) Lethal gene
(b) Holandric gene
(c) Sex linked gene
(d) Complementary gene
5. Transfer of genetic material in bacteria through virus is called
(a) Transduction (b) Recombination
(c) Conjugation (d) Transformation
6. Bacterial transformation was studied by
(a) Morgan (b) Griffith
(c) Mendel (d) Avery
7. Structures which are different in morphology and similar in function are called
(a) Homologous organs
(b) Analogous organs
(c) Vestigial organs
(d) Atavism

8. A living connecting link between Annelida and Arthropoda
(a) Peripatus (b) Limulus
(c) Seymouria (d) Archaeopteryx
9. The change in gene frequency in small population is called.
(a) Mutation
(b) Adaptation
(c) Genetic drift
(d) Hardy Weinberg equilibrium
10. The modern horse is called
(a) Mesohippus (b) Miohippus
(c) Pliohippus (d) Equus

PART B — (5 × 5 = 25 marks)

Answer ALL questions, by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Give an account of lethal genes in man.
Or
(b) Enumerate cytoplasmic inheritance with reference to kappa particles.

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12. (a) Write an account on Down syndrome.
Or
(b) Explain colour blindness in man.
13. (a) Discuss the concepts of Eugenics and Euthenics.
Or
(b) Describe Griffith's experiment to prove DNA as the genetic material.
14. (a) With evidences discuss the principles of Lamarck.

Or

- (b) Describe Paleontological evidences of evolution.
15. (a) Describe Protective mimicry with evidence.
Or
(b) Evaluate Hardy - Weinberg equilibrium.

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PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe polygenic inheritance with example.

Or

- (b) Explain dihybrid cross.

17. (a) Describe Morgan's experiment on linkage.

Or

- (b) Write a brief account on Haemophilia.

18. (a) Explain Lac Operon concept.

Or

- (b) Write an account on inborn errors of metabolism.

19. (a) Explain the evolutionary principles of Darwin.

Or

- (b) Write an account on living fossils.

20. (a) Explain the role of isolation in speciation.

Or

- (b) Discuss the evolution of horse as seen in fossil records.
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