

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Fourth Semester

Zoology — Core

GENETICS

(For those who joined in July 2021-2022)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Germplasm theory was proposed by _____
(a) Wolff (b) Darwin
(c) Weismann (d) Leeuwenhock
2. Epistasis means _____
(a) Interoction (b) Inhibition
(c) Duplication (d) Expression

7. In a pedigree chart off springs are represented by
(a) Circle (b) Square
(c) Triangles (d) Black circle
8. Positive eugenics deals with
(a) regulation on marriages
(b) sterilizing the defective
(c) birth control
(d) selective fusion of gametes
9. The cytoplasmic genes are called _____
(a) plasmid
(b) plasmagenes
(c) plastid
(d) mutagens
10. T_4 bacteriophage is a _____ virus.
(a) Animal (b) Bacterial
(c) Plant (d) All the three

3. The interchange of chromosomal segments between the homologous chromosomes occurs in _____
(a) Crossing over
(b) Chromosomal map
(c) Multiple gene
(d) Sex determination
4. Sudden change occurred in the genetic code is due to
(a) Chromosomes
(b) Monohybrid
(c) Dihybrid
(d) Mutagens
5. Which one of the following is known as Royal disease?
(a) Haemophilia
(b) Colour blindness
(c) Down syndrome
(d) Sickle cell anaemia
6. The y-linked gene are also called
(a) Lethal gene
(b) Holandric gene
(c) Sex linked gene
(d) All the above

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) What is incomplete dominance? Explain with examples.

Or

(b) Write short notes on :
(i) Test cross
(ii) Back cross.
12. (a) What is linkage? Explain the types of linkages?

Or

(b) Briefly describe about coupling and repulsion.
13. (a) Give a brief notes on Haemophilia.

Or

(b) Write a short note on sex limited genes.

14. (a) Discuss phenylketonuria is a inborn errors of metabolism.

Or

(b) Give an account on Eugenics.

15. (a) Explain the factors affecting gene frequency.

Or

(b) Give an account of Hardy-Weinberg equilibrium.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Describe Dihybrid cross to prove Mendel's law of independent assortment.

Or

(b) Give an account on Rh factor in man and its importance.

17. (a) Give an account on types of mutation.

Or

(b) What is DNA repair? Explain the mechanisms of DNA repair seen in living cells.

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18. (a) Give an account of colour Blindness in man.

Or

(b) Write any two syndrome caused by chromosome non-disjunction.

19. (a) Describe the inborn errors of metabolism in man

Or

(b) Write an essay on genetic counselling.

20. (a) Explain the life history of T_4 phages.

Or

(b) Give an account on operon hypothesis.

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