

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

Fifth Semester
Zoology — Core
GENETICS

(For those who joined in July 2020 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

1. Who is the father of genetics?
 - (a) Morgan
 - (b) Mendel
 - (c) Watson
 - (d) Bateson
2. An exception of Mendel's law is
 - (a) Independent assortment
 - (b) Linkage
 - (c) Dominance
 - (d) Purity of gametes

3. Linkage prevents
 - (a) Homozygous condition
 - (b) Hybrid formation
 - (c) Segregation of alleles
 - (d) Heterozygous condition
4. Mendel did not observe linkage due to
 - (a) Mutation
 - (b) Synapsis
 - (c) Crossing over
 - (d) Independent assortment
5. Which of the following is not a characteristic feature of Down's syndrome
 - (a) Very tall
 - (b) Small round head
 - (c) Furrowed tongue
 - (d) Partially open mouth
6. What is the genotype of the person suffering from Klinefelter's syndrome

(a) 44 + XXX	(b) 42 + XXX
(c) 44 + XXY	(d) 42 + XXY

7. Sickle cell anaemia induce to
 - (a) Change of aminoacid in a chain of haemoglobin
 - (b) Change of aminoacid in b-chain of haemoglobin
 - (c) Change of aminoacid in both (a) and (b) chain of haemoglobin
 - (d) None of these
8. Which of the following enzyme is deficient in phenylketonuria
 - (a) Homogentisate oxidase
 - (b) Tyrosinase
 - (c) Phenylalanine hydroxylase
 - (d) None
9. Which of the following things was identified as the transforming principle

(a) DNA	(b) RNA
(c) Proteins	(d) Carbohydrates

10. How many DNA molecules are transferred after each transformations

(a) 2	(b) 1
(c) 50	(d) Infinite

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain monohybrid experiment.
Or
(b) Write notes on Epistasis.
12. (a) Describe the mechanism of crossing over.
Or
(b) Explain non-disjunction in man.
13. (a) Give a note on Down's syndrome.
Or
(b) Give a brief account on chemical Mutagens and their action.
14. (a) List out simple mendelian traits in man.
Or
(b) Write an essay on sickle-cell anaemia.

15. (a) Explain bacterial conjugation.

Or

(b) Summarize the genetic applications of virus.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain polygenic inheritance with suitable example of skin colour in man.

Or

(b) Write an essay on multiple alleles with an example.

17. (a) Explain colour blindness in man.

Or

(b) Describe sex determination in drosophila.

18. (a) Write an essay on mutation.

Or

(b) Explain Klinefelter's and Turner's syndrome.

Page 5 Code No. : 30391 E

19. (a) Write down the genetic applications of bacteria.

Or

(b) Explain transduction in bacteria.

20. (a) Write an essay on genetic counselling.

Or

(b) Explain alkaptonuria and Albinism.

Page 6 Code No. : 30391 E

