

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

Fifth Semester

Zoology — Core

GENETICS

(For those who joined in July 2020 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which term represents a pair of contrasting characters?
 - (a) Heterozygous
 - (b) Homozygous
 - (c) Codominant gene
 - (d) Allelomorphs

2. How many phenotype occur in the human blood group ABO with alleles IAIBi?
 - (a) 1
 - (b) 2
 - (c) 4
 - (d) 3
3. Complete linkage has been reported in ———
 - (a) Maize
 - (b) Human female
 - (c) Male drosophila
 - (d) Female drosophila
4. Crossing over occurs during ———
 - (a) Pachytene
 - (b) Diplotene
 - (c) Diakinesis
 - (d) Both (a) and (b)
5. Which of the following is not the characteristics of the person suffering from turner's syndrome?
 - (a) short stature
 - (b) poor breast development
 - (c) well developed ovaries
 - (d) non menstruation
6. Missing of one chromosome is known as ———
 - (a) monosomy
 - (b) nullisomy
 - (c) trisomy
 - (d) tetrasomy

7. Albinism is a congenital disorder resulting from the lack of which enzyme?
 - (a) Tyrosinase
 - (b) Xanthine oxidase
 - (c) Catalase
 - (d) Fructokinase
8. The most striking example of point mutation is found in a disease called ———
 - (a) Down's syndrome
 - (b) Sickle cell anaemia
 - (c) Thalassaemia
 - (d) Night blindness
9. The transfer of naked DNA from one cell to another is referred to as ———
 - (a) Transduction
 - (b) Lysogeny
 - (c) Transformation
 - (d) Conjugation
10. Transfer of genetic material in bacteria through virus is termed as ———
 - (a) transduction
 - (b) recombination
 - (c) conjugation
 - (d) transfromation

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write notes on lethal genes.
Or
(b) Describe codominance.
12. (a) Explain colourblindness in man.
Or
(b) Give an account on sex linked genes.
13. (a) Describe Down's syndrome.
Or
(b) Write short note on albinism.
14. (a) Give a brief account on mutagens.
Or
(b) List out simple Mendalian traits in man.
15. (a) Explain transduction in brief.
Or
(b) Write down 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 dihybrid cross.

Or

(b) Explain skin colour in man.

17. (a) What is crossing over? Explain mechanism of crossing over.

Or

(b) Describe Haemophilia a sex linked inheritance in man.

18. (a) Write an essay on mutation.

Or

(b) Explain the following:

(i) Klinefelter's syndrome

(ii) Turner's syndrome.

19. (a) Give an account on genetic counselling.

Or

(b) Explain pedigree analysis.

20. (a) Explain the life history of bacteriophage.

Or

(b) Write an essay on bacterial transformation.
