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Reg. No. : .....

**Code No. : 20581 E      Sub. Code : CMZO 41**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Zoology – Core

**GENETICS**

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

**PART A — (10 × 1 = 10 marks)**

Answer ALL questions.

Choose the correct answer :

1. Identify the expression of one gene is prevented by the another non allelic gene

- (a) Supplementary gene
- (b) Complementary gene
- (c) Epistasis
- (d) Incomplete dominance

2. Match the skin colour of Man with the following

- (a) Multiple alleles
- (b) Multiple genes
- (c) Complementary genes
- (d) None

3. Show who proposed the linkage theory

- (a) T.H.Morgan      (b) GJ Mendel
- (c) G.muller      (d) Lamark

4. Show the occurrence of Crossing over during \_\_\_\_\_.

- (a) mitosis
- (b) meiosis
- (c) linkage
- (d) meiosis and gametogenesis

5. Write the name of the Royal disease

- (a) colour blindness      (b) haemophilia
- (c) hypertrichosis      (d) TB

6. Relate the Mangoloid idiocy with the following

- (a) down syndrom
- (b) klinefelter's syndrom
- (c) turner's syndrome
- (d) patuas syndrome





7. Select the person with the black colour urine is due to the accumulation of \_\_\_\_\_.

- (a) acetic acid
- (b) homogentisic acid
- (c) recombinant genes
- (d) protogenes

8. The science which deals with improving existing Human race is \_\_\_\_\_.

- (a) Euthenics                      (b) Eugenics
- (c) Euphenics                    (d) Progenes

9. Transfer of genetic materials from one bacteria to another through plasmid is \_\_\_\_\_.

- (a) conjugation                  (b) sex duction
- (c) transduction                (d) transformation

10. Select a region of DNA which is involved in the initiation of transcription

- (a) promoter                      (b) template
- (c) enzyme                        (d) primer

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PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Recall an incomplete dominance.

Or

(b) State the law of independent assortment.

12. (a) Summarize the gene mutation.

Or

(b) Explain the different types of linkage.

13. (a) Write down the symptoms of Klinefelter's syndrome.

Or

(b) Write short note on Euploidy.

14. (a) Explain the merits and demerits of Inbreeding.

Or

(b) Explain the need for Genetic Counselling.

15. (a) Summarize the repetitive DNA.

Or

(b) Summarize the conjugation with neat sketch.

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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) Enumerate the Complementary genes with examples.

Or

- (b) Reproduce the multiple alleles with ABO blood group.

17. (a) Explain in detail about the chromosomal aberration.

Or

- (b) Illustrate the construction of chromosomal map.

18. (a) Explain the sex determination in Man.

Or

- (b) Explain the following: (i) Hypertrichosis  
(ii) Turner's syndrome.

19. (a) Illustrate the Hardy Weinberg law and its application.

Or

- (b) Explain the Eugenics and its types.

20. (a) Summarize the lytic cycle of bacteriophage with neat sketch.

Or

- (b) Orderly explain the Griffith experiment.

