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Reg. No. :

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Sub. Code : ZZOM 23

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2022

Second Semester

Zoology — Core

GENETICS

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The physical expression of a gene is called
(a) Genotype (b) Genome
(c) Phenotype (d) Punnett square
2. The genetic make up of a gene is called
(a) Genotype (b) Genome
(c) Phenotype (d) Punnett square

3. Alleles of different genes that are on the same chromosome can occasionally be separated by a phenomenon called
(a) crossing over
(b) continuous variation
(c) epistasis
(d) pleiotropy
4. Haemophilia is caused by
(a) bacteria (b) virus
(c) genetic mutation (d) cause unknown
5. Down syndrome is caused due to
(a) bacterial infection
(b) a chromosomal abnormality
(c) viral infection
(d) lack of oxygen supply to the brain during birth
6. Aneuploidy represents
(a) increase or decrease number of chromosome
(b) increase in multiple sets of chromosome
(c) deletion of some parts of chromosome
(d) addition of some parts of chromosome

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7. The set of all genes in any population is termed as
(a) population pool (b) gene pool
(c) species pool (d) genetic drift
8. Hardy – Weinberg equilibrium operates in the absence of
(a) Gene flow (b) Mutation
(c) Natural selection (d) All of these
9. The factor or an agent that causes mutation is called
(a) mutagens (b) mutation
(c) mutants (d) gene mutation
10. When the mutation occurs on the basis of direction and when it occurs from normal type of allele to mutant type of allele are known as
(a) spontaneous mutation
(b) reverse mutation
(c) induced mutation
(d) forward mutation

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss the law of independent assortment.

Or

- (b) Write short notes on incomplete dominance.

12. (a) Briefly discuss about haemophilia.

Or

- (b) Give a brief account on three point test cross in drosophila.

13. (a) Explain in detail about eugenics.

Or

- (b) Write short notes on Turner's syndrome.

14. (a) Give a brief account of Fisher's theorem.

Or

- (b) Write short notes on migration.



15. (a) Elucidate about frame shift mutation.

Or

- (b) Discuss in detail about point mutation.

PART C — (5 × 8 = 40 marks)

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

16. (a) Write an essay on cytoplasmic inheritance.

Or

- (b) Briefly describe about the polygenic inheritance

17. (a) Discuss in detail about the sex determination in drosophila.

Or

- (b) Elaborate the sex determination in human.

18. (a) Elucidate the critical evaluation of pedigree.

Or

- (b) Write a detailed account of Karyotyping.

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19. (a) Describe the various factors influencing hardy Weinberg law.

Or

- (b) Illustrate in detail about inbreeding depressions.

20. (a) Give a detailed account on various types of transposable elements.

Or

- (b) Discuss in detail about inborn errors of metabolism.

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