

VI Semester B.Sc. Degree Examination, May 2017

ZOOLOGY – VII

Paper – Z.6.1 : Genetics, Molecular Biology and Biotechnology

Time : 3 Hours

Max. Marks : 80

- Instructions:** 1) Answer **all** questions.
2) Draw labelled diagrams **wherever** necessary.

SECTION – A

Answer **any five** of the following.

(5×2=10)

1. Define the term homozygous and heterozygous.
2. What is karyotype and Idiogram ?
3. Define recessive epistasis. Give example.
4. What is parthenogenesis ?
5. Mention the purine and pyrimidine bases of DNA and RNA.
6. What are Non-sense codons ? Mention them.

SECTION – B

A. Answer **any four** of the following.

(4×5=20)

7. Explain the classification of chromosomes based on the position of centromere.
8. What is dominant epistasis ? Explain it with reference to plumage colour pattern in Leghorn Wyondotte.
9. Mention the branches of genetics and briefly explain the practical application of genetics.
10. Write a short note on Turner's and Down's syndrome.
11. What is Criss cross inheritance. Briefly explain Haemophilia in man with an example.
12. Give an account of XX-XY type of sex determination in man.

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B. Answer **any two** of the following.

(2×5=10)

13. With a neat labeled diagram explain Clover leaf model of t-RNA.
14. Describe the Duplex model of DNA with labeled diagram.
15. Enumerate the properties of Genetic code.

SECTION – C

A. Answer **any three** of the following.

(3×10=30)

16. What is Dihybrid cross ? Explain it by taking Guinea pig as an example.
17. Describe inheritance of ABO blood groups in human beings with an example.
18. What are supplementary factors ? Explain its inheritance with reference to comb pattern in fowls.
19. With a neat labeled diagram explain the structure of Polytene chromosome.

B. Answer **any one** of the following.

(1×10=10)

20. Enumerate the applications of Genetic Engineering in basic research, Industry, Medicine and Agriculture.
21. Explain the Griffith's experiment to prove DNA as the genetic material.
