

VI Semester B.Sc. Degree Examination, May/June 2016
ZOOLOGY – VII

Z-6.1 (New) : Genetics, Molecular Biology and Biotechnology (New)

Max Marks 80

Time : 3 Hours

Instructions : 1) Draw diagrams *wherever necessary*
2) Answer *all the Sections*.

SECTION – A

2×5=10

Answer **any five** of the following :

- 1) Define the terms phenotype and genotype with examples
- 2) What is Heterochromatin and Euchromatin ?
- 3) What are complementary factors ? Give example.
- 4) Write about Hypertrichosis.
- 5) Define Genetic RNA. Give example.
- 6) What is Triplet Code ? Mention initiator codon and terminator codons of protein synthesis.

SECTION – B

A. Write short notes on **any four** of the following (4×5=20)

- 7) What are Multiple alleles ? Mention the characters of multiple alleles.
- 8) Sketch and label ultrastructure of chromosome
- 9) What are supplementary factors ? Briefly explain it with respect to comb patterns in fowls
- 10) Write a short notes on Down's Syndrome
- 11) Write a note on color blindness in man
- 12) Give an account on XX-XY type of sex determination in man



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(2×5=10)

- B. Write short notes on **any two** of the following :
- 13) Sketch and label Watson and Crick model of DNA.
 - 14) Mention the attributes of Genetic Code.
 - 15) Explain Eukaryotic mRNA with diagram.

SECTION – C

(3×10=30)

- A. Answer **any three** of the following :
- 16) Describe inheritance of ABO blood group in man with an example
 - 17) Define Recessive Epistasis. Explain it with reference to coat colour in pigs
 - 18) Explain sex-determination :
 - a) XX-XY type in Drosophila
 - b) XX-XO type in squash bug.
 - 19) With a neat labelled diagram explain **polytene chromosome**

(1×10=10)

- B. Answer **any one** of the following
- 20) Explain semiconservative method of DNA replication.
 - 21) Enumerate the application of Genetic engineering in Medicine and Agriculture

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