

B.Sc. ZOOLOGY FIFTH SEMESTER SESSIONAL EXAMINATION, 2023
PRINCIPLES OF GENETICS
PAPER CODE: ZOO-HC-5026

Marks=30

Time=1 hour

Q1. Answer the following:

1x5=5

- a) Define heredity and variation.
- b) Name the three laws of inheritance.
- c) State two examples of sex-limited characters.
- d) When the distance between two genes is more, the chance of crossing over is _____ (more/less) and the chance of linkage is _____ (more/less).
- e) Give two examples of trisomy in human.

Q2. Answer the following (any five):

2x5=10

- a) Differentiate between linkage and crossing over.
- b) What is somatic hybridization? Write its application.
- c) Define Chiasmata? State the relation between number of chiasmata and length of the chromosome.
- d) Define the terms- allele, dominant allele and recessive allele.
- e) Distinguish between paracentric inversion and pericentric inversion.
- f) Distinguish between euploidy and aneuploidy.
- g) What is a mutagen? What are the different classes of mutagens?

Write short notes on (any one):

1x5=5

- a.) Epistasis and Pleiotropism.
- b.) Incomplete dominance and co-dominance.
- c.) Chromosomal mutation

Q3. Answer the following (any one):

10x1=10

- a.) Elucidate sex-linked, sex-influenced and sex-limited inheritance with examples.
- b.) Discuss the different types of gene mutations.
- c.) Describe the inheritance of polygenic traits in human with examples.