

Reg. No. :

Name :

**V Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/Supplementary/
Improvement) Examination, November 2025
(2019 to 2023 Admissions)
CORE COURSE IN ZOOLOGY
5B08ZLG : Genetics**

Time : 3 Hours

Max. Marks : 40

Instruction : Give illustrations and figures wherever necessary.

- I. **Essay questions (Each question carries 8 marks). Answer any two : (2×8=16)**
- 1) Explain various types of gene mutations and describe the molecular mechanisms involved.
 - 2) Write an account on epistasis. Explain with its types and suitable examples.
 - 3) Explain the different aspects of linkage.
 - 4) Describe sex determination exemplifying humans and Drosophila.
- II. **Short essay questions (Each question carries 4 marks). Answer any two : (2×4=8)**
- 5) Explain dominant epistasis with a suitable example.
 - 6) Describe the genetics of ABO blood groups and Rh factor in man.
 - 7) Write a short note on extrachromosomal inheritance with a suitable example.
- III. **Short answer questions (Each question carries 2 marks). Answer any six : (6×2=12)**
- 8) Comment on the role of Y chromosome in humans. Also mention SRY gene.
 - 9) Explain Polygenic inheritance.
 - 10) What is Erythroblastosis foetalis ?

P.T.O.

K25U 2373

-2-

- 11) Differentiate complete and incomplete linkage.
 - 12) Explain genic balance theory of bridges.
 - 13) Write an account on Gynandromorphism and sex mosaics.
 - 14) Give a short note on chromosomal banding techniques.
 - 15) Comment on maternal inheritance.
- IV. **Multiple Choice Questions (Each question carries 0.5 mark). Answer all. (8×0.5=4)**
- 16) Genes that are located on the same chromosome are called
 - a) Allelic genes
 - b) Polygenes
 - c) Pseudoalleles
 - d) Linked genes
 - 17) Synaptonemal complex formed during
 - a) Leptotene
 - b) Zygotene
 - c) Pachytene
 - d) Diplotene
 - 18) When the inverted segment includes the centromere, it is called
 - a) Paracentric inversion
 - b) Pericentric inversion
 - c) Translocation
 - d) Isochromosome
 - 19) Which of the following is not a congenital disease ?
 - a) Haemophilia
 - b) Sickle cell anaemia
 - c) Polio
 - d) Spina bifida

K25U 2373

-3-

- 20) Edward syndrome is caused by
 - a) Deletion of chromosome 5
 - b) Trisomy of chromosome 21
 - c) Monosomy of chromosome 18
 - d) Trisomy of chromosome 18
- 21) The sex-determining system in Drosophila is called
 - a) Genic balance theory
 - b) Chromosomal balance theory
 - c) XO system
 - d) ZW system
- 22) Karyotype 47, XYY results in
 - a) Turner's syndrome
 - b) Klinefelter's syndrome
 - c) Superfemale
 - d) Supermale
- 23) A child has blood group O. Which of the following parental combinations are possible ?
 - a) A × B
 - b) AB × O
 - c) O × O
 - d) All of the above except AB × O