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Name.....

Reg. No.....

**FIFTH SEMESTER (CBCSS—U.G.) DEGREE EXAMINATION
NOVEMBER 2025**

Zoology

ZOL 5B 06T—CELL BIOLOGY AND GENETICS

(2019 Syllabus)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Short answer type.**All questions can be answered.**Each question carries 2 marks.**(Ceiling 25)*

1. List the advantages of electron microscope.
2. Name any *two* fixatives used in histological techniques.
3. Differentiate between exocytosis and endocytosis.
4. What is GERL ? Mention its significance.
5. What are microtubules and microfilaments ?
6. Name any *two* types of giant chromosomes.
7. Write the different stages of mitosis.
8. What is eugenics and euthenics ?
9. Distinguish between incomplete dominance and co-dominance.
10. Comment on quantitative inheritance citing an example.
11. What is erythroblastosis foetalis ?
12. Differentiate between sex-influenced and Sex-limited characters.
13. Name the different types of structural mutation.

Turn over

14. Distinguish between trans version and transition in point mutation.
15. What is the genetic cause of albinism and sickle-cell anaemia ?

Section B (Paragraph/ Problem Type)

All questions can be answered.

Each question carries 5 marks.

(Ceiling 35 marks)

16. Discuss principles, uses and types of light microscope.
17. Discuss the histological techniques for the demonstration of proteins, carbohydrates and lipids.
18. Write a note on structure, composition and functions of nucleolus.
19. Elaborate nucleosome organisation of chromatin.
20. Describe non-allelic interaction with examples.
21. Write an account on sex-linked characters in man.
22. Describe genic balance and haploid-diploid mechanism of sex determination.
23. Write a paragraph on classification and grouping of human chromosome.

Section C (Essay Type)

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

Each question carries 10 marks.

24. Elaborate the detailed structure and functions of :
 - (a) Mitochondria.
 - (b) Lysosome.
 - (c) Interphase nucleus.
25. Give a detailed account of different stages of cell cycle. Add a note on mitosis.
26. Discuss linkage and crossing-over citing its significance.
27. Explain different types of gene and chromosomal mutation.

(2 × 10 = 20 marks)