23U518 (Pages: 2) Name: .....

Reg.No: .....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2025

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19UZOL5B06 - CELL BIOLOGY AND GENETICS

(Zoology - Core Course)

(2019 Admission onwards)

Time : 2.5 Hours Maximum : 80 Marks

Credit : 4

Part A (Short answer questions)

Answer ***all*** questions. Each question carries 2 marks.

1. What are the most common histological double-stains?
2. What is kinetosome?
3. What are microvilli? What is the benefits of microvilli
4. What is Endomitosis, what is it's significance?
5. Write about the Biogenesis of mitochondria
6. What is meant by Polymorphic lysosome?
7. Elaborate the working of G1 check point.
8. What are the major events in Leptotene and Zygotene?
9. What is complementary genes?
10. What is Linkage?
11. What are the difference between intrachromosal and interchromosomal recombination?
12. What is holandric inheritance? Give an example.
13. Comment on the importance of SRY gene.
14. Explain haploid-diploid mechanism of sex determination? Give example.
15. What is Cri-du-chat syndrome?

(Ceiling: 25 Marks)

Part B (Paragraph questions)

Answer ***all*** questions. Each question carries 5 marks.

16. What is the principle behind epifluorescent microscopy?

17. With the help of a diagram explain the working of Scanning Tunneling Microscope.

18. Enumerate cancer cell characteristics.

19. Explain the free-radical theory of ageing.

20. Explain complementary gene action (9: 7 ratio).

21. Explain maternal foetal Rh incompatability and erythroblastosis foetalis.

22. Describe euploidy and aneuploidy.

23. Describe the inherent disorders associated with the metabolism of phenylalanine.

(Ceiling: 35 Marks)

Part C (Essay questions)

Answer any ***two*** questions. Each question carries 10 marks.

24. What are the major functions of plasma membrane. Elaborate the fluid mosaic model.

25. Write a detailed essay on the structural and functional aspects of Interphase nucleus and nuclear pore.

26. Define Multiple Alleles. Explain with reference to ABO blood grouping in man.

27. Explain the various mechanism of sex determination.

(2 × 10 = 20 Marks)

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