22U522 (Pages: 2) Name: .....

Reg.No: .....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U ZOL5 B06 - 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 is Phase contrast microscopy?
2. Differentiate SEM and STM.
3. What is mounting in histology? Name two agents used for mounting.
4. What is the significance of centriole in cell division?
5. What are the functions of nucleolus?
6. What is Amitosis?
7. What are the hallmarks of cancer as laid down by Hanahan and Weinberg?
8. Write a note on apoptosis.
9. What is Dominant epistasis.
10. What are modifier genes?
11. Mention isoalleles and name the different types of isoalleles?
12. Explain haploid-diploid mechanism of sex determination? Give example.
13. What is a free martin?
14. What is frameshift mutation? Give example.
15. What is Patau's Scheme?

(Ceiling: 25 Marks)

Part B (Paragraph questions)

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

16. Write on the modifications of plasma membrane?
17. Compare between Polytene chromosome with Lamp brush chromosome.

18. Write a brief note on cytoskeleton network.

19. Compare Mitosis and Meiosis.

20. Explain the inheritance of coat colour in rabbit.

21. Explain Crossing over frequency.

22. Explain sex-linked inheritance with respect to the inheritance of colour blindness in humans.

23. Differentiate between sickle cell anemia and thalassemia.

(Ceiling: 35 Marks)

Part C (Essay questions)

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

24. Give the ultrastructure of plasma membrane. Add a note on transport across the membrane.

25. Illustrate the structure and functions of mitochondria.

26. Explain different types of linkage with examples. Briefly mention the significance of linkage.

27. Give a detailed account on mechanism of sex linkage with its characteristics, types and examples.

(2 × 10 = 20 Marks)

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