



বিদ্যাসাগর বিশ্ববিদ্যালয়  
**VIDYASAGAR UNIVERSITY**

**Question Paper**

**B.Sc. Honours Examinations 2021**

(Under CBCS Pattern)

**Semester - II**

**Subject: ZOOLOGY**

**Paper : C 4-T & P**

**Cell Biology**

**Full Marks : 60 (Theory-40 + Practical-20)**

**Time : 3 Hours**

*Candidates are required to give their answers in their own words as far as practicable.*

*The figures in the margin indicate full marks.*

**[Theory]**

**Group - A**

Answer **any two** of the following:

2×15=30

1. “Chromosomal DNA is packaged inside microscopic nuclei with the help of histones”  
- justify the significance of histones in DNA packaging. How does DNA packaging affect DNA replication? What is the purpose of DNA packaging?

7+5+3

2. Define Microfilament. Give a detailed account on the structure of Microfilaments. What is the function of Microfilaments?

3+7+5

3. What are the checkpoints in a cell cycle? What factors regulate the cell cycle? Do cancer cells have cycling? 6+6+3
4. Write notes on anchoring junctions and communicating junctions. Are Desmosomes tight junctions? (6+6)+3

### Group - B

Answer *any one* of the following: 1×10=10

5. Why is p53 identified as 'the guardian of the genome'? What does p53 do in apoptosis? 5+5
6. How is necrosis different from apoptosis? How does cAMP take part in intracellular signal transduction pathway. 5+5

### [Practical]

Answer *any one* of the following: 1×20=20

1. What is Barr body? How would you prepare a permanent slide to show the presence of Barr body in human female blood cell. Present it with suitable diagram. 3+13+4
2. What is meiotic cell division? How would you identify Anaphase and Prophase stages of cell division – explain with reasons and suitable diagrams. 4+(8+8)
3. With a labelled diagram, illustrate different parts of a polytene chromosome. Mention about its occurrence in the animal kingdom. Also comment its function. 15+(2+3)
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