

**2023**  
**ZOOLOGY**  
**ZOOL-3014**  
**(Cell Biology)**  
**Total Marks : 40**  
**Time : 2 Hours**

*Total number of printed pages -2*

*The figures in the margin indicate full marks for the questions*

1. Answer the following questions very briefly : 5×2=10
  - (a) What are the factors responsible for determination of fluidity of plasma membrane?
  - (b) Why colchicine is used in chromosome study?
  - (c) What is RNA editing? Write its principle.
  - (d) What are the hydrolytic enzymes in peroxisomes. Write its function.
  - (e) Differentiate between apoptosis and necrosis.
  
2. Answer any six of the following questions. 6×5=30
  - (a) Write the mechanism of ciliary bending with illustrative diagram. 5
  - (b) Write a note on the biogenesis and function of mitochondria. 5
  - (c) Describe about the major elements of transcriptional regulation in eukaryotic gene expression that are distinct from prokaryotic gene expression. 5

- (d) What is apoptosome? Describe the role of Caspase in programmed cell death. 1+4=5
- (e) What is termed as presequences in mitochondrial protein? Describe the process of protein targeting to the mitochondrial matrix by the involvement of TIM23 and TOM40 Complex. 1+4=5
- (f) Write briefly on the role of microtubule in chromosome movement. 5
- (g) Write short notes on (any two): 2 ½ × 2 = 5
- (i) Gap junction
  - (ii) Key functions of Golgi apparatus
  - (iii) Cell cycle checkpoints

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