

AQ-897

M.Sc. (Part—I) Semester—II (CBCS Scheme)
Examination
ZOOLOGY
Paper—V
(Molecular Cell Biology)

Time—Three Hours]

[Maximum Marks—80

- Note :—**(1) All questions are compulsory
(2) All questions carry equal marks.
(3) Illustrate your answers with suitable diagrams wherever necessary.

1. Give an account of the following :—

- (a) Proteins of biomembranes.
- (b) Membrane potential.
- (c) Cell-matrix adhesion.
- (d) Active transport.

OR

- (e) Structural components of basal lamina.
- (f) Trasporters.
- (g) Collagens.
- (h) Facilitated diffusion.

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2. Describe the modes of cell signaling.

OR

Describe the G-protein-coupled receptors that activate or inhibit adenylyl cyclase. 16

3. Explain the following :—

- (i) Calcium as second messenger.
- (j) Features of signal transducing systems.
- (k) Wnt pathway.
- (l) JAK-STAT pathway.

OR

- (m) Signal transduction in vision.
- (n) Hedgehog pathway.
- (o) cAMP as second messenger.
- (p) Smad pathway. 16

4. Describe the cell cycle checkpoints.

OR

Describe the extrinsic and intrinsic mechanisms of apoptosis. 16

5. Give an account of the following :—

- (q) Protein export across nuclear membrane.

- (r) Functions of lysosomes.

- (s) Addition of isoprenyl groups as post-translational modification of proteins.

- (t) Termination of protein synthesis in eukaryotes.

OR

- (u) Protein uptake into ER.

- (v) Elongation phase of protein synthesis in eukaryotes.

- (w) Proteolytic processing as post-translational modification of proteins.

- (x) Glycosylation of proteins in ER. 16