

Roll No. ....

Total Pages : 03

**LMDE/D-23**

**6032**

CELL BIOLOGY AND HUMAN  
PHYSIOLOGY  
BCH-102

Time : Three Hours]

[Maximum Marks : 80

**Note :** Q. No. 1 is compulsory. Attempt *one* question from each Unit and a total *five* questions.

1. Write brief notes on the following :

- (a) Beta Barrel proteins.
- (b) GPI anchor
- (c) Intermediate Filaments.
- (d) Kinase cascade
- (e) Nitric Oxide
- (f) Goblet cells
- (g) Trypsinogen.
- (h) Acetylcholine.

**8×2=16**

**Unit I**

2. (a) How do proteins and lipids influence fluidity of plasma membrane ?
- (b) Discuss active diffusion verses passive diffusion in transport across plasma membrane. **6,10**

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P.T.O.

3. (a) Discuss Fluid mosaic model of plasma membrane.  
(b) Describe structure and activity of transporter proteins in determining plasma membrane permeability.

6,10

### Unit II

4. (a) Describe the structure and function of microfilaments and their role in muscle contraction.  
(b) How do various hormones enter the cell and influence cell activity ?

8,8

5. (a) Describe the process of signal transduction across G protein coupled receptors.  
(b) What is the composition and function of Tight junctions and adhesion junction ?

8,8

### Unit III

6. (a) Describe the process of exchange of gases in alveoli.  
(b) Discuss mechanism of stimulation for secretion of saliva. What is the composition and functions of saliva ?

6,10

7. (a) Discuss the role of lungs and kidneys maintaining pH of blood.  
(b) What is the composition and function of Mucus secretion in gastrointestinal tract ?

8,8

### Unit IV

8. (a) Describe the structure of Nephron. Which hormones regulate kidney function ?  
(b) Explain the process of generation of action potential and its propagation along the neuron.

8,8

9. (a) Discuss the role of excitatory neurotransmitters with suitable examples.  
(b) Discuss the mechanism of reabsorption of Glucose in the proximal tubule.

8,8