

M.Sc. (Bio-Chemistry) (NEP Pattern) Semester-II
STPG02BCH 02 - Advanced Cell Biology

P. Pages : 2

Time : Three Hours



GUG/S/25/16390

Max. Marks : 80

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- Notes :
1. All questions are compulsory
 2. Draw Neat and labeled diagram whenever it necessary
 3. All questions carry equal marks.

1. Discuss in detail structure of prokaryotic membrane. **16**

OR

a) Discuss in detail Fluorescence Recovery After Photo-bleaching (FRAP). **8**

b) Discuss the structure of tight junction **8**

2. Discuss in detail channel and carriers which assist transport of ions and molecules. **16**

OR

Write a note on-

a) Discuss co-transport with examples **8**

b) Write note on F-class pump **8**

3. Write a detail note on G-protein coupled receptor **16**

OR

a) Discuss in detail MAPK kinase pathways of signal transduction **8**

b) Discuss in detail JAK-STATE pathway. **8**

4. Discuss in detail sporulation in bacteria **16**

OR

a) Write a note on osmoregulatory pathways **8**

b) Write a note on heat shock proteins **8**

5. Attempt **any 8** from following **8x2 =16**

a) Give two functions of rough endoplasmic reticulum

b) What is basic difference between the membrane of SER and RER

- c) What is mean by photo bleaching recovery.
- d) Arrange permeability order of following molecule across cell membrane O₂, CO₂, glucose, amino acid.
- e) Define the terms osmosis, hypertonic, isotonic and plasmolysis.
- f) Name the toxins used to purify acetylcholine receptor.
- g) What is roll of NO as signal transduction?
- h) Name the enzyme which catalyzed the degradation of cAMP.
- i) Define the term agonist and antagonist.
- j) Give four features of signal transduction.
- k) What is two component system?
- l) What is quorum sensing?
