



MD-MPL-104-T

Seat No. _____

M. Pharm. (Pharmacology) (Sem. I) (CBCS)

Examination

January - 2018

MPL-104 T : Cellular & Molecular Pharmacology

Time : 3 Hours]

[Total Marks : 75

- Instructions :** (1) Figure to the right indicates full marks.
(2) Draw neat and clean diagram wherever required.

1 Answer the following questions : **10×2=20**

(a) Define :

(a) Necrosis

(b) Autophagy

(b) Justify the receptor name 'Ligand-Gated Ion Channel'.

(c) Enumerate various equipments used in a cell culture laboratory.

(d) Name any four secondary messengers.

(e) Explain : 'Cryopreservation'.

(f) Define:

(a) Partial Agonist

(b) Inverse Agonist

(g) Define: Biosimilars

(h) According to cell cycle, DNA replication occurs in which phase?

(i) List out applications of ELISA.

(j) Define: Mitosis

2 Answer any **two** out of the following : **2×10=20**

- (a) Define and classify receptors with appropriate examples. Write a note on JAK/STAT signaling pathway.
- (b) What is Recombinant DNA Technology? Write a note on applications of Recombinant DNA.
- (c) Explain in detail about general processes involved in any cell culture. protocol. Briefly discuss important precautions to be observed to prevent contamination.

3 Answer any **seven** out of the following : **7×5=35**

- (a) Write a note on applications of flow cytometry.
- (b) Enlist different aerobic cell culture media with their characteristics. Explain subculture process.
- (c) Write a short note on gene polymorphisms affecting drug metabolism.
- (d) Which are the different gene transfer techniques? Explain any one in detail.
- (e) Describe cell cycle in brief.
- (f) Enlist different organelles of a cell. Give functions of any five of them.
- (g) Describe apoptosis process in a cell.
- (h) Explain glucose uptake assay.
- (i) Write a note on signal transduction through G-protein coupled receptors.