J-MPL-104-T

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Seat No. _____

M. Pharm. (Sem. I) Examination

January - 2020

Cellular & Molecular Pharmacology : MPL - 104T

Time : **3** Hours] [Total Marks : **75**

Instructions : (1) Figure to the right indicates marks.
(2) Draw neat and clean diagrams as and when required.

1 Answer all the questions, each carries 2 marks : **10×2=20**

(1) Define genotype and phenotype.
(2) Define the role of calcium ion as secondary messenger.
(3) Discuss clinical significance of Necrosis.
(4) Discuss similarity and dissimilarity of smooth and rough endoplasmic reticulum.
(5) Discuss the principle of PCR.
(6) Enlist different equipment used in cell culture laboratories.
(7) Briefly enumerate future opportunities of Calcium influx assays.
(8) How antibody therapy differed from conventional therapy.
(9) Enlist different detection of bound antibody in western blotting technique.
(10) How sandwich ELISA works ?

2 Answer any 2 out of 3, each carries 10 marks : **2×10=20**

(1) Discuss in detail Janus kinase (JAK.)/signal transducer and activator of transcription (STAT) signalling pathway.
(2) Enlist different cell viability assay. Discuss principle of each cell viability assay in detail.
(3) Discuss in detail cell cycles and its regulation.

3 Answer any **7** out of 9, each carries 5 marks : **7×5=35**

(1) Write a note on apoptosis.

(2) Discuss in detail nitric oxide (NO).

(3) Write a note on G-protein coupled receptors.

(4) Discuss the mechanism involved in gene silencing by siRNA.

(5) Describe in detail different applications of recombinant DNA technology.

(6) Enlist different gene transfer techniques. Enumerate any one in detail,

(7) Write a detailed note on Cell culture media.

(8) Describe principles and applications of flow cytometry.

(9) Write a note on biosimilars.
