Rajiv Gandhi University of Health Sciences

First Semester M. Pharm Degree Examination - JAN-2019

[Time: 3 Hours] [Max. Marks: 75]

Cellular and Molecular Pharmacology
Q.P. CODE: 5136

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

LONG ESSAY (Answer any Three) **3 X 10 = 30 Marks**

1. What is cell cycle? Discuss the various phases of eukaryotic cell cycle. Explain the role of cell cycle regulators and inhibitors.
2. Explain the applications of metabolomics and genomics in Pharmacogenomics.
3. Explain the JAK/STAT and MAPK signalling pathway and write their significance.
4. What are cell cultures? Classify with examples. Explain the media requirements and techniques of cell cultures.

SHORT ESSAY (Answer any Nine) **9 X 5 = 45 Marks**

5. Discuss the DNA transfer using viral vectors and explain the clinical applications of gene therapy.
6. Discuss the role of siRNA in gene silencing.
7. Explain cell signalling through GPCR.
8. Explain the unique role of nitric oxide (NO) as neurotransmitter.
9. Describe the concepts of micro array techniques.
10. Discuss the role of genomics in research.
11. Describe the basic concepts and applications of biosimilars.
12. What are drug transporters and discuss the impact of genetic variations in drug transporters.
13. Explain the principles and applications of glucose uptake assay.
14. Explain the principles and applications of flow cytometry.

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