Rajiv Gandhi University of Health Sciences, Karnataka

First Semester M. Pharm Degree Examination - 05-Jun-2023

[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.

Answer All The Questions **10 X 7.5 = 75 Marks**

1. Explain the structure of nuclear receptors. Explain the signal transduction mechanism of nuclear receptor considering the examples of corticosteroids, thyroid hormone and estrogen.

2. Discuss the types and structure of G-protein coupled receptor and G-protein. Explain the different targets for G-proteins to include cellular changes.

3. Describe the role of BC12 family of proteins and caspases in the apoptotic pathways.

4. List the check points of cell cycle. Explain the role of Rb, P^{53}, ATR, ATM, cyclin B and CDK inhibitors in these check points.

5. Discuss the principle involved in Enzyme linked immunosorbent assays. Explain its advantage over the radioimmunoassay.

6. Explain the different methods of cryopreservation. Distinguish between primary and secondary cell lines.

7. Discuss the different techniques used in cell culture for sterilization of plastic, glass wares, media, decontamination of equipment, rooms.

8. Write briefly regarding genome organization and techniques applied. Describe the various polymorphism affecting drug metabolism with suitable examples.

9. Describe the design and screening of plasmid as cloning vectors. Explain the factors affecting migration of nucleic acids during electrophoresis. Enumerate the uses of gel electrophoresis.

10. What are Biosimilar? Give examples. Explain the various regulatory requirements for the approval of biosimilar products.

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