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**1<sup>st</sup> Semester Examination, 2022-2023 (Model Paper)**

**Course Name: M. Pharm**

**Years - FIRST YEAR**

**Branch: Pharmacology**

**Subject: Pathophysiology**

Time: 3.00 Hours

Max.marks:75

Note: - Attempt all parts.

## **PART A**

**QUESTION NO. 1 TO 10, ATTEMPT ALL QUESTIOS**

**(10x2=20)**

1. Describe Autophagy.
2. Discuss the role of Cytochrome C and CASPASEs in apoptotic pathways.
3. Explain the events activated during MAPK signaling.
4. Describe the various types of vectors.
5. Elaborate the principle of DNA microarray.
6. Illustrate the role of Restriction enzyme.
7. Describe the technique of gene sequencing in brief.
8. Explain the process of cryopreservation of cell.
9. Elaborate the role of trypsin in cell subculturing.
10. Describe the utility of Biosimilars.

## **PART B**

**(QUESTION NO. 11 TO 13 ATTEMPT ANY 2)**

**(2X10=20)**

11. Illustrate the intrinsic and extrinsic pathways of Apoptosis.
12. Sketch the signal transduction process of GPCR.
13. Write in detail the principle and application of Flow cytometry.

## **PART C**

**(QUESTION NO. 14 TO 20 ATTEMPT ANY 5)**

**(5X7=35)**

14. Explain the events of cell cycle.
15. Describe the JAK-STAT signaling pathway.
16. Explain the principle and outcomes of Recombinant DNA technology.
17. Demonstrate the concept of metabolomics and genomics.
18. Explain how genetic polymorphism affect drug metabolism.
19. Interpret the technique of immunotherapeutics and humanization of antibodies.
20. Describe cell viability assays putting special emphasis on Luciferase assay.