

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[B.PHARM 0823]

**AUGUST 2023
(MARCH 2023 EXAM SESSION)**

Sub. Code: 2084

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 - SEMESTER VIII
PAPER V – CELL AND MOLECULAR BIOLOGY**

Q.P. Code: 562084

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Write in detail about the eukaryotic somatic cell cycle and its regulation through checkpoints.
2. Explain the transcription and translation process of protein synthesis.
3. What is a Protein? Write in detail about the structural organization of Proteins.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Classify amino acids with examples on the basis of nutritional requirements.
2. Explain the post-translational modification of polypeptide chain.
3. Differentiate prokaryotic and eukaryotic cells.
4. Explain different types of RNA.
5. Write in detail about the Mitosis.
6. Define Transgenics. Explain the steps involved in the Transgenics process.
7. Explain the functions of cell surface receptors in the cell signaling pathways.
8. With the neat diagram explain cAMP pathway mediated signal transduction.
9. What are protein-kinases? Explain its functions with examples.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What are the three types of Meiosis?
2. Why Carbon (C) is the most important atom in biological molecules?
3. What are the functions of Cytosol?
4. What is 3' -5' phosphodiester linkage?
5. Differentiate monocistronic and polycistronic mRNA.
6. Briefly explain the energy requirements in protein synthesis.
7. What is metabolism?
8. Draw the structure of a cell membrane.
9. Name gene transfer methods.
10. What is JAK / STAT pathway?
