QI	P CODE: 114328 Reg. No:
First Semester M.pharm Degree Examinations April 2018	
M.Pharm (Pharmacology)	
Paper IV – Cellular and Molecular Pharmacology (MPL 104T)	
Tir	ne: 3 Hours Total Marks: 75
	Answer all Questions.Draw Diagrams wherever necessary.
Essays (3x10=30)	
1.	Discuss the principles and application of flow cytometry.
2.	Explain the role of immunotherapeutics in clinical practice
3.	Briefly discuss about recent advances in gene therapy
Short Notes (9x5=45)	
4.	Gene mapping
5.	Differentiate apoptosis from necrosis
6.	G-protein coupled receptors
7.	Micro array technique
8.	Single nucleotide polymorphism
9.	Various types of cell culture and culture media
10.ELISA	

- 11. Cyclic AMP signaling pathway
- 12. Proteomics.
