Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – I • EXAMINATION – SUMMER • 2015

Subject Code: 910103 **Date: 21-05-2015**

Subject Name: Cellular and Molecular Pharmacology

Time: 02:30 pm - 05:30 pm **Total Marks: 80**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Describe the functions of various types of potassium channels.	**06**
	(b)	Explain the importance of dose-response curve giving suitable examples.	**05**
	(c)	Answer the following in relation to signal transduction mechanisms:- (i) Enlist and explain in general the components of intracellular signaling network involved in drug action through receptor activation. (ii) What are molecular switches and explain their role in cell signaling pathway.	**05**
Q.2	**(a)**	Explain the following terminologies using two state model, citing suitable examples:- (a) Agonist (b) Antagonist (c) Inverse agonist (d) Partial agonist	**06**
	(b)	Write a short note on cytokines.	**05**
	(c)	Describe briefly the source, formation, metabolism, inactivation and actions of bradykinin.	**05**
Q.3	**(a)**	Give mechanisms for termination of GPCR mediated actions.	**06**
	(b)	Explain the importance of radioligand binding studies.	**05**
	(c)	Write a short note on muscarinic receptors- location, type, signal transduction and agonist-antagonists.	**05**
Q.4	**(a)**	Classify adrenergic receptor subtypes. Enumerate their agonists and antagonists.	**06**
	(b)	What is necrosis? How it differs from apoptosis?	**05**
	(c)	Describe the role of nitric oxide in pathophysiology of various diseases.	**05**
Q.5	**(a)**	Describe various transport mechanisms across the cell membrane.	**06**
	(b)	What is gene therapy? Describe gene therapy in brief.	**05**
	(c)	Explain the mechanism of receptor malfunction leading to diseases like epilepsy, hypertension and myasthenia gravis.	**05**
Q. 6	**(a)**	What are prostanoids? Explain their role in inflammation.	**06**
	(b)	Write a note on endothelin receptors	**05**
	(c)	Write a note on neurochemistry of aging and anti-aging drugs.	**05**
Q.7	**(a)**	Describe the following terminologies using dose response curve. (a) Drug selectivity (b) Risk-benefit ratio (c) Drug potency	**06**
	(b)	Write a brief note on peptide and its antagonist as drugs.	**05**
	(c)	Explain the role of PAF with mechanism.	**05**

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