Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – I • EXAMINATION – WINTER 2013

Subject Code: 910103 **Date: 23-12-2013**

Subject Name: Cellular and Molecular Pharmacology

Time: 10.30 am - 01.30 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)	Desccribe importance of nitric oxide in pharmacotherapy of various disorders.	**06**
	(b)	Classify the following receptors, and describe their signal transduction mechanism citing suitable examples as agonist and antagonist (a) Endothelin (b) Serotonin (c) Histamine (d) Glycine	**10**
Q.2	(a)	Explain various routes by which small molecules cross cell membranes	**06**
	(b)	Classify adrenergic receptors and write agonist and antagonist.	**05**
	(c)	Write a short note on drug antagonism	**05**
Q.3	(a)	Explain drug-receptor theory based on applying the Law of Mass Action to the drug-receptor interaction.	**06**
	(b)	Write pharmacology of purines.	**05**
	(c)	Write short note on radio ligand binding studies.	**05**
Q.4	(a)	Describe pharmacology of sodium channel and their modulators.	**06**
	(b)	Explain the major functional pathways of G-protein coupled receptor transduction	**05**
	(c)	Dwell upon dopaminergic pathways and their functions	**05**
Q.5	(a)	Describe a role of stress induced genes in aging and write about anti-aging drugs.	**06**
	(b)	Describe the physiological role of various types of calcium channels.	**05**
	(c)	Write a note on GABA receptors with suitable agonists and antagonists.	**05**
Q. 6	(a)	Describe the following terminologies using dose response curve. 1) Drug selectivity 2) Risk-benefit ratio 3) Drug potency 4) Drug efficacy	**06**
	(b)	Write a note on NMDA receptors suitable agonists and antagonists.	**05**
	(c)	Explain the role of Cytokine in inflammatory disorders	**05**
Q.7	(a)	Describe role of following in various immunological and inflammatory disorders. 1. TNF-alpha 2. Leukotrines	**06**
	(b)	What is gene therapy? Describe various approaches of gene therapy and its applications.	**05**
	(c)	Discuss signaling pathways that result in apoptosis	**05**

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