

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.

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|-------------|--|-----------|
| Q.1 | (a) Describe 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 | 10 |
| | (a) Endothelin
(b) Serotonin
(c) Histamine
(d) Glycine | |
| 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. Leukotrienes | 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 |
