

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.**

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|-------------|------------|--|-----------|
| 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:- | 05 |
| | | (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. | |
| 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. | 06 |
| | | (a) Drug selectivity (b) Risk-benefit ratio (c) Drug potency | |
| | (b) | Write a brief note on peptide and its antagonist as drugs. | 05 |
| | (c) | Explain the role of PAF with mechanism. | 05 |
