

**UKA TARSADIA UNIVERSITY**  
**Course: M. Pharm (PharmaCology)**  
**First Semester Examination – 2011-12**  
**Subject code: 040050102**

**Subject: Cellular and Molecular Pharmacology**

**Time: 3 Hours**

**Max marks:70**

**Instructions:**

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.
5. Draw diagrams/figures whenever necessary.

**Section-1**

**Q-1 (A) Do as directed:**

**[07]**

- I) Give classification of cholinergic receptor on basis of its signal transduction mechanism
- II) Give example of Ligand and effect ligand of following  
A) SLC                      B) MDR1
- III) Define Chemical antagonist
- IV) Define narcosis
- V) Explain Dose response relationship
- VI) Classify of muscarinic receptor on basis of its location
- VII) Enlist the mechanism of transport across the cell Membrane

**(B) Answer the following in brief: (Any 4)**

**[08]**

- I) Explain mechanism of action of beta blocker in angina
- II) Give location, molecular mechanism and cellular response of  $N_N$  and  $M_2$  receptor
- III) Explain role of Interferons in immunological disorders
- IV) Describe secondary messenger pathway in regulation of ion channel receptor
- V) Explain potency and efficacy with example

**Q-2 Answer the following:**

**[10]**

- A) Nuclear receptor show slower onset and longer duration of action mechanism- Justify the statement with suitable explanation and examples.
- B) Discuss signaling pathways of apoptosis

**OR**

- A) Discuss consequence of potency and efficacy in selecting drug for disease condition with one example
- B) Describe the mechanisms for Termination of G-protein coupled receptor mediated actions.

- Q-3 Answer the following in detail. (Any 2)** [10]
- A) Write note on alpha adrenergic receptors- location, type, signal transduction and agonist-antagonists.
  - B) Elucidate various routes by which ions cross cell membranes. Write a note on voltage-gated ion channel transport mechanism
  - C) Explain the importance of radioligand binding studies.

**Section-2**

- Q-4 Attempt following** [07]

(1) Give location and signal transduction mechanisms of following:

- I) NMDA    II) H<sub>1</sub>    III) 5-HT<sub>3</sub>    IV) ET<sub>A</sub>

(2) Do as directed:

- I) Classify purine receptors
- II) Give example of specific D<sub>2</sub> receptor agonist and antagonist
- III) Enlist Prostaglandins modulators

- (B) Answer the following in brief: (Any 4)** [08]

- I) How GABA plays role in inhibitory post synaptic potential?
- II) Explain secondary messenger pathway for NMAD receptor
- III) Explain bradykinin role in inflammation.
- IV) Give the example of sodium channel modulators and justify their use in arrhythmia
- V) Differentiate Histaminergic receptors

- Q-5 Answer the following:** [10]

A) Explain ET receptor, their signal transduction mechanism, agonists and antagonists

**OR**

A) Discuss the role of Leukotrienes modulators in inflammatory diseases

B) Justify the use of Nitric oxide in angina and erectile dysfunction

**OR**

B) Justify the use of Calcium channel modulation in hypertension, arrhythmia and heart failure

- Q-6 Answer the following in detail. (Any 2)** [10]

- A) Write a note on gene therapy
- B) Discuss role of cytokinin in inflammation.
- C) Describe the role of GABA receptors in the CNS.