

UKA TARSADIA UNIVERSITY

M. Pharm (Pharmacology) - I Semester Examination

040050102 -Cellular and Molecular Pharmacology

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) H₁ III) 5-HT₃ IV) ET_A

(2) Do as directed:

- I) Classify purine receptors
- II) Give example of specific D₂ 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.