

UKA TARSADIA UNIVERSITY

M.Pharm. (Pharmacology) (1st Semester)

Subject :040050102 - Cellular and Molecular Pharmacology

Duration: 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 allocated to that question.
5. Draw diagrams/figures whenever necessary.

Section-1

Q-1 (A) Define. [07]

- I) Up-regulation of receptors
- II) Desensitization
- III) Potency
- IV) Necrosis
- V) Tachyphylaxis
- VI) Agonist
- VII) Dose response curve

Q-1 (B) Answer the following (Any 4) [08]

- I) Enlist secondary messengers associated with G-protein coupled receptors
- II) Differentiate between partial and inverse agonist.
- III) Enlist diseases resulting from receptor malfunctioning.
- IV) Differentiate between apoptosis and necrosis.
- V) Differentiate between ion channel receptors and nuclear receptors.
- VI) Explain receptor occupation theory.

Q-2 Answer the following. [10]

A) What is drug antagonism? Explain types of drug antagonism with suitable examples.

OR

A) Describe various transport mechanisms across cell membrane.

B) Describe various apoptotic pathways. Explain its importance in normal physiology of body.

OR

B) Describe structure and components of ion channel receptors. Explain functioning of Nicotinic cholinergic receptors.

Q-3 Answer the following in detail. (Any 2) [10]

A) Explain adaptive cellular and molecular responses in brain aging and enlist anti-aging drugs.

B) Write a note on Drug Receptor Theory.

C) Enlist types of adrenergic receptors along with location and pharmacological actions.

Section-2

Q-4 (A) Do as directed.

[07]

- I) What is excitotoxicity of NMDA receptor?
- II) What is gene therapy?
- III) Enlist different cytokines involve in Inflammatory responses.
- IV) Enlist pharmacological actions of prostacyclin.
- V) Enlist COX-2 inhibitors.
- VI) Enlist leukotriene inhibitors.
- VII) Enlist Glycine receptor agonists.

Q-4 (B) Answer the following. (Any 4)

[08]

- I) Enlist histamine receptor subtypes with their location.
- II) Enlist agonists and antagonists of GABA receptors.
- III) Short note on Platelet Activating Factors.
- IV) Give biosynthetic pathway of prostaglandins.
- V) Enlist types of glutamate receptors along with their locations.
- VI) Explain role of nitric oxide in erectile dysfunction.

Q-5 Answer the following.

[10]

- A) Describe the types and functions of potassium channels.

OR

- A) Describe various types, characteristics, location and function of calcium channels giving suitable examples of drugs.
- B) Explain biosynthesis and physiological actions of nitric oxide.

OR

- B) Describe endothelin receptors with location and their pharmacological actions.

Q-6 Answer the following in detail. (Any 2)

[10]

- A) Explain biosynthesis and physiological actions of nitric oxide.
- B) Classify serotonergic receptors. Discuss physiology of serotonin.
- C) Enlist dopaminergic receptors subtypes. Describe their signal transduction mechanism and location in body.