

Question Paper

Exam Date & Time: 10-Jul-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Instructions: Answer ALL questions.
Draw neat label diagrams wherever it is necessary

Pharmacology-1 [PHA 2.4T-S2]

Marks: 70

Duration: 180 mins.

Section A

Answer all the questions.

Long Answer Questions (3 x 10 marks = 30 marks)

- 1) Discuss the different types of biotransformation of drugs with examples. (10)
- 2) Schematically depict the adrenergic transmission process and indicate the drugs modifying this process. (10)

A 70-year-old male patient with complaints of weak stream of urine, sense of incomplete bladder voiding urinary frequency and nocturia. After physical examination and ultrasound, he was diagnosed to have developed benign hypertrophy of prostate and was prescribed:

Tab: Terazosin 5 mg one tab daily at bedtime.

He took the medicine as advised and went off to sleep. At night, when he got up to pass urine, he felt giddy and fainted. On being laid flat on the bed, he regained consciousness within 2 minutes. Later gradually propped up on the bed to the sitting position and then got up slowly and walked without any problem to pass the urine.

- (a) What was the rationale for prescribing terazosin to the patient?
- (b) What is the likely explanation for the fainting attacks?
- (c) What precautions could have avoided the fainting attack?

- 3) Briefly write the synthesis, storage, and metabolism of histamine. In detail, discuss the pharmacology of histaminergic receptors. (4 + 6) (10)

Section B

Answer all the questions.

Short Answer Questions (6 x 5 marks = 30 marks)

- 4) Discuss the signal transduction mechanism of ligand-gated ion channel receptors. (5)
- 5) A theophylline derivative was prepared with potent phosphodiesterase inhibition activity and additional smooth muscle relaxation properties. Can you predict its pharmacological action? (5)
- 6) Explain the molecular mechanism of action of levothyroxine. (5)
- 7) With examples, classify antiepileptic drugs (5)
- 8) List the five prostaglandin analogues and their specific therapeutic use. (5)
- 9) Explain the effect exerted by the drugs which modulate the benzodiazepine receptor with their use (5)

Section C

Answer all the questions.

Give Reasons for the Following (5 x 2 marks = 10 marks)

- 10) Drugs such as digoxin have a high volume of distribution ~6 L/Kg. In case of poisoning, what is the problem associated with these drugs.? (2)

- 11) Why physostigmine is preferred over neostigmine in the management of atropine poisoning (2)
- 12) How does colestipol decreases systemic lipid levels? (2)
- 13) Rationalise the use of ergometrine with a supportive mechanism for the management of postpartum haemorrhage. (2)
- 14) Name a 5HT1D receptor agonist and its therapeutic indication (2)

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