



All India Institute of Medical Sciences, Kalyani
Second Professional MBBS Examination, February 2024

Time: 3 Hrs.

Pharmacology (Paper-I)

Marks: 100

- Answer all questions.
- Answer the questions in the same serial order strictly.
- Illustrate your answers with well labelled diagram wherever necessary.
- Answer each section in a separate answer book.

SECTION - A (50 MARKS)

Long answer question:

[4+2+4=10]

1. A 45-years-old male patient (Body Weight 90 kg) presents to the medicine OPD with a history of chest pain which typically relieves on taking rest. On examination his BP was 154/100 mmHg.
 - a. Outline the management of this patient which will prevent future chest pain episodes.
 - b. Describe mechanism of action of any drug you chose in the above answer.
 - c. If he develops Acute Myocardial Infarction (STEMI), enumerate the drugs you can use to treat the condition.

Write Short notes on:

(8×5=40)

2. What is "Diuretic Braking Phenomenon"? Explain how it can be managed. (2+3)
3. Write a note on:- (3+2)
 - a. Angiotensin Receptor blocker and Nephilysin Inhibitor - mechanism, use and adverse effects.
 - b. Clinical significance of apparent volume of distribution.
4. Choose the right drug for the following conditions:- (2.5+2.5)
 - a. A 55-year-old patient with malignant hypertension
 - b. A 35-year-old patient diagnosed with an overactive bladder
5. Explain the differences between zero-order kinetics and first-order kinetics in the context of drug biotransformation with pertinent exemplars. (5)
6.
 - a. Explain a Quantal Dose Response Curve and its utility. (2)
 - b. What is meant by Therapeutic Drug Monitoring? (3)
7. Write a note on:- (3+2)
 - a. Compare and contrast : Dopamine and Dobutamine
 - b. Role of atropine as a pre anaesthetic medication
8. Discuss the rationale for using the following drugs:- (2.5+2.5)
 - a. Terlipressin for bleeding oesophageal varices.
 - b. Tamsulosin for benign hypertrophy of prostate.
9. Mention clinical uses of:- (1+1+1+1+1)
 - a. Trihexyphenidyl
 - b. Spironolactone
 - c. Phenylephrine
 - d. Acetazolamide
 - e. Nesiritide

SECTION - B (50 MARKS)

Long answer question:

[2+2+4+2=10]

1. A 22-year-old woman is brought in the emergency department because of a suicide attempt by ingesting a handful of sleeping tablets. On examination, she appears lethargic, but groans and moves all her extremities to painful stimuli. Her blood pressure is 110/70 mm Hg, heart rate is 80 bpm, and oxygen saturation is 99 percent. Her pupils are of normal size and reactive to light. Her deep tendon reflexes are normal bilaterally. In the field, she was given an IV bolus of dextrose and an ampoule of naloxone without response. Her boyfriend, with whom she had an argument, brings in the bottle of sleeping medication which reads "lorazepam."
 - a. What is the danger of an overdose with this class of medication?
 - b. What is the cellular mechanism of action of this class of medication?
 - c. How will you manage this patient?
 - d. What pharmacologic agent can be used to treat this patient, and what is its mechanism of action?

Write Short notes on:

(8×5=40)

2. How will you manage the following treatment-emergent adverse effects? (2.5+2.5)
 - a. Haloperidol-induced acute muscular dystonia
 - b. Lithium-induced diabetes insipidus
 3. Write mechanism of action:- (2.5+2.5)
 - a. Lignocaine as Local anesthetic
 - b. Paracetamol as antipyretic
 4. Mention drug group and clinical uses of:- (1+1+1+1+1)
 - a. Escitalopram
 - b. Doxylamine
 - c. Zolpidem
 - d. Ramelteon
 - e. Misoprostol
 5. Write a brief note on: (2.5+2.5)
 - a. Complications of spinal anaesthesia
 - b. Serotonin syndrome
 6. Write a note on:- (3+2)
 - a. Alcohol Deaddiction therapy
 - b. Treatment of morphine addiction
 7. A 27-year-old female (BW- 70 kg), a known case of PCOS, collapses at a concert. Witnesses report sudden rigidity, followed by violent body jerks and she loses consciousness. After 2 minutes, the seizure stops, and she regains awareness, confused and disoriented. She has similar history twice in last one year. [(1+2)+2]
 - a. Choose an appropriate drug to treat this patient and justify.
 - b. Enumerate other pharmacological agents that might be used as alternative therapy.
 8. Make the right choice of drug for the following conditions with justification: (2.5+2.5)
 - a. A 19-year-old girl with an acute attack of severe migraine
 - b. A 35-year-old man with paracetamol poisoning
 9. Write a note on:- (3+2)
 - a. Uses of peripheral acting skeletal muscle relaxants. Add a note on Hoffmans elimination
 - b. Directly acting skeletal muscle relaxant with example, mechanism of action and use
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