



**All India Institute of Medical Sciences, Kalyani**  
**Second Professional MBBS Examination (Batch 2020-21)**

**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:**

**[3+3+1+3 = 10]**

1. A 60-year-old man presents with repeated episodes of chest pain on exertion for the past 3 months. His ECG reveals ST depression. Blood pressure and other laboratory investigations are within normal limits. He is diagnosed to have chronic stable angina by the cardiologist.
  - a. Enumerate the drugs that can relieve an acute attack of angina. Explain in brief how these drugs alleviate chest pain.
  - b. Enumerate drugs used for prophylaxis of angina. Write mechanism of action of any one drug you mentioned.
  - c. Does this patient require prophylaxis for angina? Justify your answer.
  - d. If this patient develops acute myocardial infarction, outline the treatment.

**Write Short notes on:**

**(8X5=40)**

2. A 46-year-old male was administered an injection of adrenaline (1:1, 00,000) with lignocaine at base of his thumb for surgical nail removal. Later he developed severe gangrene of thumb. (2+1+2)
  - a. Why has gangrene developed and How to manage this condition?
  - b. Why adrenaline is given along with lignocaine?
3. A farmer was brought to the hospital with convulsions, sweating and laboured breathing. On examination, he was semiconscious and had pinpoint pupils, excessive salivation, pungent odour from mouth and shallow respiration with rhonchi all over the lungs. The blood pressure was also low. (1+3+1)
  - a. What is the probable diagnosis and the line of management?
  - b. Name two other drugs causing pinpoint pupil?
4. Discuss the clinical significance of the following phenomena: (2+2+1)
  - a. Carvedilol is used in congestive cardiac failure.
  - b. Prazosin should be started at a low dose.
  - c. Beta blockers result in tiredness and impaired exercise capacity.
5. Explain the clinical significance of: (1½+1½+2)
  - a. First pass metabolism
  - b. Therapeutic drug monitoring of antiepileptic drugs
  - c. Zero order elimination kinetics
6. Explain why: (2½+2½)
  - a. Spironolactone used in Cirrhosis of Liver.
  - b. Dose of a drug is usually reduced in hepato-renal insufficiency?
7. Write short notes on: (2½+2½)
  - a. Half-life of a drug.
  - b. Furosemide - (Mechanism, ADR, Use)
8. Explain why: (2½+2½)
  - a. Thiazides are not preferred as antihypertensive in diabetic patients.
  - b. Pyridostigmine is used in the management of myasthenia gravis.
9. Discuss the pharmacotherapy of: (2½+2½)
  - a. Open angle glaucoma.
  - b. Cheese reaction.



SECTION - B (50 MARKS)

Long answer question:

[4+4+2=10]

1. A 24-year-old man diagnosed with schizophrenia, was prescribed an antipsychotic. The drug was effective in controlling the condition, however, after 10 days he developed a bent posture, a shuffling gait and failed to swing his arms while walking.
  - a. List out the antipsychotic drugs which could have been possibly used in this patient initially. Briefly explain their mechanism of action.
  - b. Explain why the patient developed a change in posture and gait after 10 days of the antipsychotic. What are the other adverse effects of these drugs?
  - c. What should be the line of management now? Justify.

Write Short notes on:

(8X5=40)

2. Following surgery for a hip replacement, a 64-year-old woman is treated with a parenteral opiate for pain. Upon release from hospital, she is given a prescription for oral oxycodone for pain. Three days after discharge she is complaining of constipation. (2½+2½)
    - a. What is the cause of her constipation?
    - b. What are the options for treatment of this patient?
  3. A 24-year-old male has been taking Pheniramine tablet for his allergic rhinitis, whenever needed. He has recently got a new job as a truck driver. As part of his appointment he had to undergo a medical fitness test, during which the doctor prescribed an alternative to the anti-histaminic he was taking. (2+2+1)
    - a. Why was an alternative anti-histaminic recommended?
    - b. Name four drugs which can be used as alternatives to Pheniramine in this patient?
    - c. Mention two other clinical uses of H1 anti-histaminic?
  4. A girl child aged 8 years is brought to OPD with a history of momentary loss of consciousness. Patient apparently freezes, stares in one direction without loss of posture, but minimal bilateral blinking of eyelids. Usually, the whole episode lasts for less than 1 minute. Parents complain that such episode occurs frequently almost every day. EEG was advised and diagnosed as absence seizure. (4+1)
    - a. Mention the suitable anti-epileptics for treatment of this condition explaining their rationality.
    - b. Does the child need lifelong treatment? Justify.
  5. A patient was hospitalized for fracture reduction and surgical repair of muscle and soft tissue trauma at multiple sites following a road traffic accident. Anaesthetist injected IV succinylcholine for endotracheal intubation and patient developed prolonged apnoea. (2½+2½)
    - a. Explain the reason for apnoea?
    - b. Suggest an alternative agent preferred in this condition with justification?
  6. A 75-year-old patient with Parkinsonism maintained on levodopa-carbidopa combination, has off-late been having off-periods of akinesia. (2+1+2)
    - a. Why is levodopa combined with carbidopa?
    - b. What are 'off-periods' of akinesia?
    - c. Briefly discuss the available options of further treatment in this patient?
  7. A lower limb operative procedure has been planned under spinal anaesthesia. The expected duration of the surgical procedure is 2 hours. (2+3)
    - a. Which local anaesthetic drug should be used for spinal anaesthesia in this case and why?
    - b. What are the common complications of spinal anaesthesia and how to prevent those?
  8. Write short notes on: (2½+2½)
    - a. Pharmacotherapy of motion sickness.
    - b. Leukotriene antagonists.
  9. Discuss the pharmacotherapy of: (2½+2½)
    - a. Status Epilepticus.
    - b. Rheumatoid Arthritis.
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