

03/24

**The West Bengal University of Health Sciences**  
**MBBS 2nd Professional Examination (New Regulation) March - April 2024**

Subject: Pharmacology  
 Paper: I

Full Marks: 100  
 Time: 3 hours

*Attempt all questions. The figures in the margin indicate full marks.*

1. a) A 40 year old farmer presented with excessive salivation, lacrimation and drowsiness and diagnosed to be a case of organophosphorus poisoning. 5+3+5+2
  - i) How will you manage the case?
  - ii) Write the antidote and its mechanism of action.
  - iii) What are the uses of Atropine substitutes?
  - iv) Role of cholinesterase reactivator in organophosphorus poisoning?
- b) A man age 45 year presented with complains of gradual onset double vision, drooping eye lid, difficulty in swallowing food and weakness of limbs which is accentuated with exercise. The symptoms fluctuate in intensity over time. 1+3+3+5+3
  - i) What is your diagnosis of the given case scenario?
  - ii) What pharmacological test can be performed to confirm the diagnosis?
  - iii) What is the primary pathophysiological mechanism underlying this condition?
  - iv) Outline the principles for treatment including pharmacological and non-pharmacological interventions of the above mention scenario.
  - v) Explain why neostigmine is preferred over physostigmine for management of such condition.
2. a) Classify diuretics. Describe the mechanism of action of furosemide in chronic heart failure. Mention three important adverse effects of long term use of thiazide diuretics. 3+4+3
- b) A 8 year old child presented with severe pallor and huge splenomegaly. He has history of repeated blood transfusion for beta thalassemia major. 5+3+2
  - i. What are the iron chelating agents used to manage the iron overload in this condition and their side effects?
  - ii. What is the role of folic acid in beta thalassemia?
  - iii. Mention the uses of penicillamine.
- c) Define drug clearance. Write down the factors influence drug clearance. Mention two pharmacokinetic parameters which depend on clearance with suitable explanations. 2+3+5
3. Write short notes on following: 2 x 5
  - a) Convey of bad news to patient.
  - b) Therapeutic adherence.
4. Explain the following statements: 5 x 4
  - a) Ticagrelor is preferred as antiplatelet drug over clopidogrel.
  - b) Pilocarpine is used in both open angle and angle closure glaucoma.
  - c) Aspirin use may precipitate an attack of bronchial asthma in susceptible individual.
  - d) Adrenaline but not noradrenaline is the drug of choice in anaphylactic shock.
  - e) Pralidoxime is not used in carbamate poisoning.

10 x 1

5. Choose the correct option for each of the following:

- i) Dabigatran is:
- a) Direct factor Xa inhibitor
  - b) Direct thrombin inhibitor
  - c) Gp IIb/IIIa inhibitor
  - d) P2Y<sub>12</sub> receptor antagonist
- ii) Transdermal drug delivery systems offer the following advantages except:
- a) They produce high peak plasma concentration of the drug.
  - b) They produce smooth and non-fluctuating plasma concentration of drug.
  - c) They minimise inter-interval variations in the achieved plasma drug concentration.
  - d) They avoid hepatic first-pass metabolism of the drug
- iii) A partial agonist can antagonize the effects of a full agonist because it has:
- a) High affinity but low intrinsic activity
  - b) Low affinity but high intrinsic activity
  - c) No affinity but low intrinsic activity
  - d) High affinity but no intrinsic activity
- iv) The antianginal drug which acts by inhibiting mitochondrial long chain 3 ketoacyl-CoA enzyme in fatty acid oxidation pathway is:
- a) Ivabradine
  - b) Dipyridamole
  - c) Nicorandil
  - d) Trimetazidine
- v) Patient of iron deficiency anemia is put on iron therapy. What should be the rate of rise of Hb level so that response is considered adequate
- a) 0.05 to 0.1 gm/dl per week
  - b) 0.1 to 0.2 gm/dl per week
  - c) more than 1 gm/dl per week
  - d) 0.5 to 1 gm/dl per week
- vi) Drug which is contraindicated in acute myocardial infarction is:
- a) Morphine
  - b) Nitroglycerine
  - c) Beta blocker
  - d) Pentazocine
- vii) Which of the following is prodrug :
- a) Omeprazole
  - b) Enalapril
  - c) Aspirin
  - d) Atenolo
- viii) Calcium disodium edetate is very effective in poisoning by:
- a) Arsenic
  - b) Mercury
  - c) Lead
  - d) Bismuth
- ix) Bronchodilator action, but is commonly present in proprietary cough formulations :
- a) Ambroxol
  - b) Chlorpheniramine
  - c) Guaifenesin
  - d) Noscapine
- x) Which PG is responsible for Niacin induced flushing?
- a) PGE<sub>1</sub>
  - b) PGF<sub>2</sub>alpha
  - c) PGD<sub>2</sub>
  - d) PGE<sub>2</sub>