



MANIPAL ACADEMY OF HIGHER EDUCATION

MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)

MBBS PHASE - I STAGE - II DEGREE EXAMINATION - AUGUST 2022

Wednesday, August 24, 2022

Pharmacology [M2PHA] – ESSAY

Time : 10.30 a.m.- 12.30 p.m.

Max. Marks : 60

✓ Answer all the questions

✓ Draw diagrams wherever appropriate

- 1A. What is drug 'half-life'? List four clinical importance of half-life.
1B. Explain how first pass metabolism can affect bioavailability of drugs. (3+2 = 5 marks)
- 2A. Explain why morphine is contraindicated in patients with head injury.
2B. Explain the mechanism of aspirin and list its two contraindications. (2+3 = 5 marks)
3. Explain the antithyroid action of radioactive iodine (I^{131}). Mention its two advantages and two disadvantages. (5 marks)
- 4A. A 69-year-old woman with metastatic breast cancer developed dyspnea on exertion, persistent cough, fever and fatigue. She was receiving chemotherapy for her cancer. Bronchoalveolar lavage from bronchoscopy revealed *Pneumocystis jiroveci* pneumonia for which she was prescribed a fixed dose combination (FDC).
i) Name the FDC which was prescribed to the above patient and explain its mechanism of action.
ii) Mention another therapeutic use of the above FDC with causative organism.
iii) List two adverse effects of the above FDC.
- 4B. Explain the mechanism of action of terbinafine and list its two uses. (4+3 = 7 marks)
- 5A. List two alkylating agents and explain their mechanism of action.
5B. List two each gastrointestinal toxicities and hematological toxicities of anticancer drugs. (3+2 = 5 marks)
- 6A. List two non-depolarizing blockers. Explain the mechanism of action of depolarizing blockers.
6B. Explain the term 'dissociative anaesthesia' with an example. (3+2 = 5 marks)
- 7A. List two antimuscarinic drugs. List two therapeutic uses and two adverse effects of them.
7B. Enumerate two 3rd generation cephalosporins and mention one therapeutic use with the causative organism of any one of them. (3+2 = 5 marks)
- 8A. Mention two oral anticoagulants. List their two therapeutic uses.
8B. Enumerate two prokinetics and explain the mechanism of action of any one of them.

9A. List one drug with its route of administration used to terminate an acute attack of angina and explain its mechanism of action.

9B. List two groups with one example each used for long term management of heart failure.

(3+2 = 5 marks)

10A. List four common properties of aminoglycosides and mention their two adverse effects.

10B. Explain the antimalarial action of chloroquine.

(3+2 = 5 marks)

11. A 50-year-old male patient with obesity comes to your out-patient department with symptoms like frequent urination, increased thirst and hunger. On examination it was found that his body weight is 90 Kg, casual (random) blood glucose is 300 mg/dl (16.65 mmol/L) and FBS is 140 mg/dl (7.78 mmol/L). Select a group of drugs for the treatment of diabetes in this case (Step 4 of P-drug selection + scores table + summary) by comparing different groups following the principles of P-drug selection.

Table: Cost list of antidiabetic drugs

Drug	Cost per tab/cap (in Rs.)	Drug	Cost per tab/cap (in Rs.)
Glibenclamide	0.4 -0.8	Metformin	0.6 – 1.5
Gliclazide	1.4 -7	Repaglinide	4 - 6
Glimepiride	1 - 6	Nateglinide	4 - 11
Glipizide	0.5 – 1.2	Pioglitazone	2 - 9
Tolbutamide	0.6 - 0.7		
Acarbose	4 - 8		
Miglitol	9 - 14		

11B. List four complications of insulin therapy.

(6+2 = 8 marks)