

Question Paper

Exam Date & Time: 11-Apr-2022 (10:20 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND PROFESSIONAL YEAR MBBS DEGREE EXAMINATION - APRIL 2022
SUBJECT: PHARMACOLOGY - PAPER I
(REPEATERS - CBME BATCH)

Marks: 80

Duration: 160 mins.

1. A 48-year-old shop attendant presented at the Ophthalmology OPD of a teaching hospital with a history of gradual, painless vision loss. His visual acuity was counting fingers at 1 metre in the right eye and 6/60 in the left eye. Both corneas were clear, and the pupils had a slow reaction to light. Intraocular pressure (IOP) was 32 mmHg (right eye) and 30 mmHg (left eye) by applanation tonometry. (Normal IOP ranges from 12-22 mm Hg). Gonioscopy showed open angles in both eyes.
 - 1A. Mention three different groups of drugs with suitable examples which can be used in this condition. (3)
 - 1B. Explain the mechanism of action of any one drug and enumerate any two specific adverse effects of the same. (2+1 = 3 Marks)
 - 1C. Outline the management of acute congestive glaucoma. (4 Marks)

2. A 53-year-old man with diabetes came to the emergency department with fever and dry cough for 5 days, swelling of the left leg for 2 days, shortness of breath and chest pain for 1 hour. On examination he has a swollen tender left leg. The colour doppler examination of the left leg revealed acute deep vein thrombosis (DVT) of the common femoral and the popliteal veins. The patient was started on high flow oxygen and was administered drug X subcutaneously. With appropriate treatment after 5 days, his oxygen requirement gradually decreased, and swelling of the leg decreased. The patient was discharged in good condition after 2 weeks of admission to the hospital with drug Y to be taken orally which was initiated a few days prior.
 - 2A. Identify drug X and drug Y. (1)
 - 2B. Explain the rationale for the use of drug Y and explain its mechanism of action. (4)
 - 2C. Compare and contrast drug X and drug Y. (4)
 - 2D. Mention one contraindication each for drug X and drug Y. (1)

3. **Answer the following:**
 - 3A. Explain how age and genetic factors modify drug action. (4)
 - 3B. A 41-year-old lady presenting with complaints of pain, swelling and stiffness of interphalangeal and metacarpophalangeal joints of both hands for the past 5 months was diagnosed with

- rheumatoid arthritis. In addition to painkillers like Ibuprofen, her physician decided to prescribe her with another drug administered once weekly which could suppress the rheumatoid process and retard disease progression. Identify the drug the physician started the patient on. Explain its mechanism of action and enumerate its adverse effects. (4)
- 3C. Explain the rationale of combining a beta blocker with a long-acting nitrate in classical angina. Mention one use for nitrates other than in angina and explain the rationale for the same. (4)
- 3D. Explain two indications for therapeutic drug monitoring and two situations where therapeutic drug monitoring is not useful. (4)
- 3E. Explain four uses of anticholinesterase drugs. (4)
- 3F. Explain the clinical significance of plasma protein binding of drugs. (4)
- 3G. A 22-year-old boy with motion sickness was prescribed promethazine. Mention the receptors on which it acts and enumerate its adverse effects. Mention two other indications for promethazine. (4)
- 3H. Explain why aluminium hydroxide and magnesium hydroxide are used as an antacid combination. (4)
- 3I. An elderly man aged 65 years, a known hypertensive on a diuretic and a beta blocker was diagnosed with benign hypertrophy of the prostate. He also had trouble achieving target blood pressure with the current combination.
Which antihypertensive could be added to his current regimen which could also help in the management of benign hypertrophy of prostate? What precautions should be taken while administering and explain its mechanism of action. (4)
- 3J. Classify antiemetics with suitable examples. (4)
- 3K. Explain the rationale for the use of spironolactone in congestive cardiac failure. Enumerate its specific adverse effects. (4)
- 3L. A patient posted for surgical treatment of hernia develops severe dry irritating cough. Mention two antitussives which could be prescribed for him. Explain the mechanism of action of any one drug. Explain why antitussives are contraindicated in productive cough.(4)
- 3M. A 35-year-old victim of a road traffic accident was diagnosed with raised intracranial tension and cerebral edema. Which diuretic would be ideal for this patient? Explain its mechanism of action and enumerate two contraindications for the same. (4)
- 3N. Mention four indications for the use of laxatives with an example of drug used for each indication. (4)
- 3O. Explain first order and zero order kinetics with suitable examples. (4)

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Question Paper

Exam Date & Time: 12-Apr-2022 (10:20 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND PROFESSIONAL YEAR MBBS DEGREE EXAMINATION - APRIL 2022
SUBJECT: PHARMACOLOGY - PAPER II
(REPEATERS - CBME BATCH)

Marks: 80

Duration: 160 mins.

1. A 40 year old male presents with cough and weight loss since one month. Chest X-ray shows upper lobe cavity. Diagnostic microbiology confirms it as a new case of pulmonary tuberculosis.
 - 1A. List the first line drugs used in this case. (2)
 - 1B. Mention the mechanism of action and adverse effects of first line drugs used in pulmonary tuberculosis. (4)
 - 1C. Explain the rationale of using multidrug therapy in tuberculosis. (2)
 - 1D. Define MDR and XDR tuberculosis. (2)

2. A 13- year old child experience episodes of blank look on his face and fails to respond to questions. On neurologic evaluation he is diagnosed as a case of petit mal epilepsy.
 - 2A. Name two drugs that can be used in the above patient. Explain their mechanism of action and adverse effects. (5)
 - 2B. Mention other four drugs used in epilepsy. (2)
 - 2C. Explain the management of status epilepticus. (3)

3. **Answer the following:**
 - 3A. Explain the mechanism of action and adverse effects of ciprofloxacin (4)
 - 3B. A 25-year-old patient with 2-day history of chest tightness and shortness of breath was admitted to hospital. Laboratory investigations showed it to be a case of Community Acquired Pneumonia caused by *Pseudomonas aeruginosa*. Name two antimicrobials effective in this patient. Explain mechanism of action of any one. (4)
 - 3C. Name four alkylating agents. Explain two toxicities of anticancer drugs and methods to ameliorate them. (4)
 - 3D. A 29-year old female presenting to the Emergency Department with dyspnea, myalgia, and rhinorrhea was diagnosed with Influenza. Name two drugs from different groups used in this case. Explain the mechanism of action and adverse effects of any one (4)
 - 3E. A 50-year old man plans to visit a chloroquine resistant malaria endemic area. Mention two regimens for prophylaxis of chloroquine resistant malaria. (4)

- 3F. A 20 year old male attends a clinic for lipoma excision. He is given a local anaesthetic prior to procedure. Mention two local anaesthetics that can be used in this case. Explain the mechanism of action and adverse effects of any one. (4)
- 3G. Explain the adverse effects and drug interactions of L-Dopa (4)
- 3H. Name three non-benzodiazepine hypnotics. Mention their four advantages over benzodiazepines. Name one drug used in benzodiazepine overdose. (4)
- 3I. A 48-year old man diagnosed as a case of generalized anxiety disorder is prescribed Buspirone 5mg twice a day. Mention four advantages of Buspirone over benzodiazepines. (4)
- 3J. A 24-year old, married female is prescribed oral contraceptive pills. Name two preparations of oral combined pill. Explain the mechanism of action of combined oral contraceptives. (4)
- 3K. A chronic asthmatic not controlled by inhalational steroids is administered oral prednisolone. Explain four long term complications of oral corticosteroids. (4)
- 3L. Classify insulin preparations based on their onset and duration of action. (4)
- 3M. Explain the regulation of Growth Hormone secretion. Name two Growth Hormone inhibitors and mention two uses of them. (4)
- 3N. Name two bisphosphonates. Explain their mechanism of action and adverse effects. (4)
- 3O) A 15-year-old girl visits a physician to treat her spots on face. On examination, she has several open and closed comedones on her face with a small number of inflammatory lesions. She is diagnosed as a case of mild acne vulgaris. Name **two topical** preparations that can be used in this case and mention their side effects. Name **two systemic** drugs that can be used in severe cases of acne vulgaris. (4)

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