

Question Paper

Exam Date & Time: 02-Feb-2024 (10:20 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND PROFESSIONAL YEAR MBBS DEGREE EXAMINATION - JANUARY/FEBRUARY 2024
SUBJECT: PHARMACOLOGY PAPER I
(CBME BATCH)

Marks: 80

Duration: 160 mins.

Answer all the questions.

- 1) Mr. Raj, a 59-year-old male, was prescribed propranolol to be taken once daily for the treatment of panic attacks. After 3 months on regular treatment, he started developing episodes of breathlessness following exertion and has recently also experienced swelling of both the legs.
 - 1A) Could the drug prescribed have caused the manifestations? Justify. (2)
 - 1B) Explain four other clinical indications of the prescribed drug? (4)
 - 1C) Compare and contrast: propranolol and metoprolol. (4)

- 2) Mrs. Rajni, a 48-year-old architect, was found to have LDL cholesterol of 174 mg/dL (optimal level < 100 mg/dL) and triglyceride levels 220 mg/dL (optimal level < 150 mg/dL) on routine annual check-up.
 - 2A) Classify the drugs used to treat hyperlipidemia with suitable examples. (5)
 - 2B) Name the drug group suitable to treat this patient. Explain its mechanism of action and adverse effects. (1+2+2 = 5 marks)

- 3) **Answer the following:**
 - 3A) A 70-year-old patient with typhoid fever is brought to the hospital in a mildly disoriented and dehydrated state. Ceftriaxone was administered parenterally. What are the advantages of administering the antibiotic parenterally, rather than orally, in this patient? Explain how age is a factor in determining drug action in this patient. (4)
 - 3B) An asthmatic patient using an inhalational bronchodilator observes that he now needs to take higher doses of the drug to obtain the same magnitude of relief as when he first started the drug. Explain in detail the pharmacological phenomenon observed in this patient. (4)
 - 3C) Explain the advantages and disadvantages of using a fixed-dose drug combination. (4)
 - 3D) Explain the terms efficacy and potency using a neatly labelled diagram. Explain their clinical significance. (4)
 - 3E) A 17-year-old boy presents with pain and spasm of the left calf muscle following a fall while playing football. The doctor wants to prescribe a muscle relaxant. Name two centrally and two peripherally acting muscle relaxants. Which is an appropriate drug to be prescribed in this patient and why? (4)
 - 3F) Explain the rationale for using lisinopril in heart failure. List its adverse effects. (4)

- 3G) Name two drug groups with suitable examples used to decrease gastric acid secretion. Explain the mechanism of action of any one. (4)
- 3H) Ms. Shanthi has been taking NSAIDs for her migraine headache. However, over the last 6 months, the number of episodes have been increasing despite taking NSAIDs. Name two drugs belonging to different groups that would be useful during an episode of headache in this patient. Explain the mechanism of action of any one. Name two drugs that can be used to prevent further episodes of migraine. (4)
- 3I) Explain the rationale for administering a combination of antacids. Why antacids should not be administered with sucralfate. (4)
- 3J) Explain the rationale for use of verapamil for prophylaxis of angina pectoris. Name one beneficial and one harmful antianginal drug combination involving verapamil. (4)
- 3K) Explain four clinical uses of vasopressin analogues. (4)
- 3L) Name four groups of drugs with examples used in the treatment of Crohn's disease. (4)
- 3M) A 52-year-old male is brought to the hospital with a blood pressure of 240/190 mm Hg. On examination, there is papilloedema and altered sensorium. Name four antihypertensive drugs that can be used in this patient. Would the treatment differ if there was no evidence of end organ damage? Explain. (4)
- 3N) List the indications for use of aspirin and explain its adverse effects. (4)
- 3O) Carla, a known asthmatic on treatment, develops acute severe asthma. Outline the management of this case

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Question Paper

Exam Date & Time: 05-Feb-2024 (10:20 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION
SECOND PROFESSIONAL YEAR MBBS DEGREE EXAMINATION - JANUARY/FEBRUARY 2024
SUBJECT: PHARMACOLOGY PAPER II
(CBME BATCH)

Marks: 80

Duration: 160 mins.

Answer all the questions.

- 1) A HIV positive patient with a CD4 cell count of 80/ul, has persistent fever and weight loss associated with invasive pulmonary disease due to tuberculosis and *Pneumocystis jirovecii pneumonia*
 - 1A) Classify anti-retroviral drugs (4)
 - 1B) Explain the mechanism of action and adverse effects of any one class of drugs. (3)
 - 1C) Explain how do you treat *Pneumocystis jirovecii pneumonia* and tuberculosis in this patient. (3)

- 2A) Classify the corticosteroids based on their relative glucocorticoid activity (4)
- 2B) Explain the mechanism of action, four uses and four adverse effects of corticosteroids. (6)

- 3) **Answer the following:**
 - 3A) A young female patient presents with high fever, chills and rigors, malaise and easy fatigability. She gives history of travelling recently to an endemic area. On examination she has abdominal tenderness, mild splenomegaly and peripheral smear showed *Plasmodium falciparum malaria*. (4)
 - i) Mention four anti-malarial drugs used for this case.
 - ii) Explain the mechanism of action and adverse effects of any one drug
 - 3B) A patient was admitted to the hospital with complaints of fever since 7 days which was step ladder in nature, associated with abdominal pain and diarrhea. On examination he has mild hepatosplenomegaly, abdominal tenderness, and Widal test was positive for *Salmonella typhi*. Mention any four drugs which can be used in this case. Explain the mechanism of action and two adverse effects of any one of them. (4)
 - 3C) A patient was brought to the hospital complaining of acute abdominal pain, passage of soft stools with blood and mucus, flatulence and weight loss. He also gives history of eating in a roadside hotel 2-3days back. Stool examination confirmed the presence of *Entamoeba histolytica*. (4)
 - i) Mention any four drugs used in this condition.
 - ii) Explain the mechanism of action and adverse effects of any one drug mentioned above.
 - 3D) Write the different regimes used in leprosy. Explain the rationale for combining drugs in leprosy. (4)
 - 3E) Explain the mechanism of action, uses and adverse effects of amoxicillin. (4)

- 3F) A patient admitted to the hospital with cyclical mood swings sometimes having agitation, aggressive behaviour, and some other time showing apathy and having no interest in any of his activities.
Psychiatrist diagnosed him as a case of bipolar disorder. (4)
- Name any two atypical antipsychotics used in this case.
 - Explain the mechanism of action and adverse effects of lithium carbonate.
- 3G) Mahesh, a 9-year-old boy is having difficulty in learning at school. He has short lapses of awareness with eyelid fluttering that occur every 5-10 min. EEG studies reveal brief 3 Hz spike and wave discharges appearing synchronously in all the leads. Neurologist makes diagnosis as Petitmal epilepsy.
Name two drugs effective in this case. Explain the mechanism of action and adverse effects of them. (4)
- 3H) A young female Saroja aged 25 years, gets sporadic attacks of intense anxiety with marked physical symptoms like hyperventilation, tachycardia, and sweating. She has been diagnosed with anxiety disorder. (4)
- Name any two benzodiazepines used in this case.
 - Explain the mechanism of action and adverse effects of any one drug.
- 3I) With the help of a diagram, explain the mechanism of action of four different classes of antibiotics inhibiting bacterial protein synthesis. (4)
- 3J) Mention any four antidepressants of different classes and list any four adverse effects of any one of them. (4)
- 3K) Explain second gas effect and diffusion hypoxia with suitable examples. (4)
- 3L) Explain any four uses of morphine with route of administration for each (4)
- 3M) Mrs. Manvi taking treatment for Grave's disease is brought to the casualty presenting with anxiety, palpitations, tremors, profuse sweating. On examination both T3, and T4 levels are elevated. She gives history of taking irregular medications for her disease despite proper instructions. She was diagnosed to have thyrotoxic crisis. Outline the management of this case and explain the rationale for using these drugs. (4)
- 3N) Classify oral anti diabetic drugs with suitable examples. (4)
- 3O) Explain the anti-rabies vaccine regime given as post and pre exposure prophylaxis (4)

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