

UNIVERSITY OF RUHUNA - FACULTY OF ALLIED HEALTH SCIENCESDEPARTMENT OF PHARMACYTHIRD BPHARM PART II EXAMINATION – JUNE 2026PH3223 PHARMACOTHERAPEUTICS – SEQ

TIME: TWO HOURS

INSTRUCTIONS

- There are four questions in parts A and B of this SEQ paper.
- Answer all questions.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

PART A

1.

1.1. A 58-year-old man is admitted with an intestinal obstruction. As he is unable to tolerate oral or enteral feeding, he is commenced on Total Parenteral Nutrition (TPN) to meet his nutritional requirements. During the first week of TPN therapy, the healthcare team closely monitors him for metabolic complications. After three weeks of treatment, his bowel function gradually improves, and enteral feeding is started. Shortly thereafter, he develops acute diarrhoea with mild dehydration and is prescribed Oral Rehydration Solution (ORS).

1.1.1. Define Total Parenteral Nutrition (TPN). (04 marks)

1.1.2. State two other clinical indications for TPN. (06 marks)

1.1.3. List three major components of a TPN formulation and explain briefly the physiological importance of one component. (15 marks)

1.1.4. List two acute metabolic complications associated with TPN and explain the mechanism of one complication. (15 marks)

1.1.5. State two advantages and two limitations of ORS. (10 marks)

1.2. A 28-year-old commercial sex worker presented with low grade fever, generalized lymphadenopathy and was found to be positive for HIV.

1.2.1. State the measures that should be taken prior to starting treatment for this patient. (10 marks)

1.2.2. Name five classes of antiretroviral drugs used in the treatment of HIV infection and give one example of each. (20 marks)

1.2.3. State five adverse effects of antiretroviral therapy. (10 marks)

1.2.4. State four drugs that may interact with antiretroviral therapy. (10 marks)

2.

2.1. A 35-year-old woman presents with bilateral painful swelling and stiffness of small joints of the hands, wrists, and elbows. Her symptoms are worse in the morning and relieves during the day. Her ESR is 70 mm in 1st hour (normal <26 mm).

2.1.1. What is the most likely diagnosis? (10 marks)

2.1.2. State three investigations that you would request to confirm the diagnosis in this patient, other than ESR. (15 marks)

2.1.3. Write three oral medications given in combination that will prevent progression of her disease condition. (15 marks)

2.1.4. State one pregnancy-related advice that should be given to this patient before initiating the medications listed in 2.1.3. (10 marks)

2.2.

2.2.1. Briefly describe why the following clinical situations raise concerns in psychiatric practice. (25 marks)

2.2.1.1. Continuation of fluoxetine in a patient exhibiting over-talkativeness, over-familiarity, and increased activity.

2.2.1.2. Use of sodium valproate in a woman of childbearing age.

2.2.1.3. Prescribing lithium in a patient with chronic diabetes.

2.2.1.4. Use of olanzapine in a patient with a BMI of 30.

2.2.1.5. Commencing diazepam in an elderly patient.

2.2.2. As a pharmacist, outline your suggestions to the treating team regarding the concerns in each of the above clinical situations. (25 marks)

PART B

3.

3.1. All antidiabetic medications trialed after 2008 required FDA approval for cardiovascular safety. This was mainly because cardiovascular diseases are commoner in patients with diabetes and ischaemic heart disease is the most common cause of death.

3.1.1. List two macrovascular complications of diabetes. (10 marks)

3.1.2. Name one antidiabetic medication that will be beneficial to reduce cardiovascular disease in diabetes. (05 marks)

- 3.1.3. Briefly describe the mechanism of action of the antidiabetic medication stated in 3.1.2. (15 marks)
- 3.1.4. Write two microvascular complications of diabetes. (10 marks)
- 3.1.5. Briefly describe the pathophysiology of one microvascular complication mentioned in 3.1.4. (10 marks)
- 3.2. Heart failure is a major cause of morbidity and mortality worldwide. Advances in pharmacological therapy have significantly improved survival and quality of life in patients with heart failure.
- 3.2.1. Name the drug class that was originally developed for the treatment of diabetes mellitus but has subsequently been shown to reduce mortality in patients with heart failure. (05 marks)
- 3.2.2. Give one example of a drug that belongs to this class. (05 marks)
- 3.2.3. Name three other drug classes that have been demonstrated to provide a mortality benefit in patients with heart failure. For each class, briefly describe the mechanism by which it improves outcomes. (30 marks)
- 3.2.4. Name two drugs that are commonly used intravenously for the management of acute heart failure (10 marks)
- 4.
- 4.1. Gastro-oesophageal reflux disease (GORD) and peptic ulcer disease (PUD) are common gastrointestinal disorders that can significantly impair a patient's quality of life.
- 4.1.1. Briefly describe the pathophysiology of GORD. (10 marks)
- 4.1.2. Name two drugs commonly used in the pharmacological management of GORD. (10 marks)
- 4.1.3. State two adverse effects associated with one of the drugs mentioned in 4.1.2. (10 marks)
- 4.1.4. Briefly describe the components and rationale of the triple therapy regimen used in the treatment of peptic ulcer disease. (20 marks)
- 4.2. A 70-year-old man with diabetes mellitus and chronic kidney disease (CKD) presents with an episode of hypoglycaemia. He is receiving insulin therapy. Recent investigations show a further decline in his renal function.
- 4.2.1. The treating doctor decides to reduce his insulin dose. Briefly explain the rationale for this adjustment. (10 marks)

4.2.2.

4.2.2.1. Mention two complications that may occur in a patient with advanced CKD. (06 marks)

4.2.2.2. For each complication explain the underlying pathophysiology. (18 marks)

4.2.2.3. For each complication state one treatment option used to manage or improve the condition. (06 marks)

4.2.2.1. Complications of advanced CKD	4.2.2.2. Pathophysiology	4.2.2.3. Treatment Option

4.2.3. If the patient progresses to end-stage kidney disease, list two renal replacement therapy options that may be offered. (10 marks)

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