



FACULTY OF ALLIED HEALTH SCIENCES, UNIVERSITY OF RUHUNA

Department of Nursing

3rd End Semester Examination – 2026 – 2022/2023-16th (New) Batch

NUR 2111 – Pharmacology in Nursing I – SEQ

Date: 9th July 2026

Time: 9.30 a.m.-10.30 a.m.

Duration: 1 hour

Index Number:

Answer all questions using the space provided.

1. Pharmacokinetics is defined as “what the body does to the drug when administered”.

1.1. Write the **four (04)** steps of pharmacokinetics. (20 marks)

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1.2. Define bioavailability. (10 marks)

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1.3. Mention how the bioavailability of an oral drug differs from that of an intravenously administered drug. (10 marks)

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- 1.4. Continuous beta blocking drug therapy leads to beta adrenoceptor up-regulation. Explain receptor up-regulation and down-regulation in relation to treatment with agonists and antagonists. (20 marks)

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- 1.5. Describe the potency of a drug using dose-response curve. (20 marks)

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1.6.

- 1.6.1. Calculate the therapeutic index of drug A using the parameters given below using the standard formula. (10 marks)

Toxic Dose 50 (TD 50) = 500 mg, Effective Dose 50 (ED 50) = 50 mg

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1.6.2. Mention your opinion regarding the therapeutic index of the above drug. (10 marks)

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2. A 55-year-old male patient with diabetes and hypertension presented with fever, productive cough and shortness of breath for 4 days. His clinical examination, blood investigations and chest radiograph are in consistence with the diagnosis of community-acquired right lobar pneumonia. It was decided to start intravenous co-amoxiclav and oral clarithromycin for this patient.

2.1. State which groups of antibiotics, co-amoxiclav and clarithromycin belong to. (20 marks)

2.1.1. Co-amoxiclav

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2.1.2. Clarithromycin

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2.2. Describe the mechanism of action of co-amoxiclav. (20 marks)

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2.3. Co-amoxiclav is a bactericidal antibiotic whereas clarithromycin is a bacteriostatic antibiotic.
Explain the following terms. (20 marks)

2.3.1. Bactericidal

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2.3.2. Bacteriostatic

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2.4. Following treatment with antibiotics for 5 days, this patient develops frequent episodes of loose stools with abdominal pain.

2.4.1. What adverse effect of antibiotics could have caused frequent episodes of loose stools?

(10 marks)

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2.4.2. What antibiotic of the above two, would have most likely caused this adverse effect?

(10 marks)

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2.5. Co prescribing clarithromycin with theophylline increases the theophylline toxicity. Theophylline is metabolized in the liver. What is the drug-drug interaction between clarithromycin and theophylline leading to theophylline toxicity?

(20 marks)

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