



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY**

END OF TRIMESTER EXAMINATIONS SEPTEMBER TO DECEMBER 2025

UNIT CODE: PHT 323

UNIT NAME: Pharmacology in physiotherapy

DATE: 5th DECEMBER 2025

TIME: 9-11

INSTRUCTIONS

1. All students will have two (2) hours to complete the examination
2. Attempt all questions as per the instruction
3. It is the student's responsibility to report any page and number missing in this paper.
4. Check that the paper is complete
5. Total number of pages is 6 including the cover.
6. Read through the paper quickly before you start.

SECTION 1

MULTIPLE CHOICE QUESTIONS (30 MARKS)

1. Which of the following terms refers to the study of the time course of a drug's absorption, distribution, metabolism, and excretion?

- A) Pharmacokinetics
- B) Pharmacodynamics
- C) Toxicology
- D) Pharmacogenomics

2. What is the term for the minimum dose of a drug required to produce a therapeutic effect?

- A) ED50
- B) LD50
- C) Therapeutic index
- D) Potency

3. Which of the following terms refers to the ratio of a drug's toxic dose to its therapeutic dose?

- A) Therapeutic index
- B) Potency
- C) Efficacy
- D) Affinity

4. What is the term for the ability of a drug to bind to its receptor?

- A) Affinity
- B) Potency
- C) Efficacy
- D) Specificity

5. Which of the following is a factor that can influence a drug's pharmacokinetics?

- A) Age
- B) Weight
- C) Liver function
- D) All of the above

6. Which of the following is a benzodiazepine?

- A) Diazepam
- B) Lorazepam
- C) Alprazolam
- D) All of the above

7. What is the primary mechanism of action of sedative-hypnotics?
- A) Enhancing GABA activity
 - B) Blocking GABA activity
 - C) Enhancing glutamate activity
 - D) Blocking glutamate activity
8. Which of the following is a selective serotonin reuptake inhibitor (SSRI)?
- A) Fluoxetine
 - B) Sertraline
 - C) Paroxetine
 - D) All of the above
9. Which of the following is a cholinergic drug?
- A) Acetylcholine
 - B) Pilocarpine
 - C) Neostigmine
 - D) All of the above
10. What is the primary mechanism of action of antiepileptic drug valproate?
- A) Blocking sodium channels
 - B) Enhancing GABA activity
 - C) Blocking glutamate activity
 - D) All of the above
11. What is the primary indication for sedative-hypnotics?
- A) Anxiety disorders
 - B) Insomnia
 - C) Seizure disorders
 - D) A and B
12. Which of the following is a non-benzodiazepine sedative-hypnotic?
- A) Zolpidem
 - B) Eszopiclone
 - C) Zaleplon
 - D) Diazepam

13. Which of the following is a risk associated with long-term use of sedative-hypnotics?

- A) Dependence
- B) Withdrawal
- C) Tolerance
- D) All of the above

14. What is the primary mechanism of action of SSRIs?

- A) Inhibiting serotonin reuptake
- B) Inhibiting norepinephrine reuptake
- C) Blocking dopamine receptors
- D) Enhancing GABA activity

15. Which of the following is not a monoamine oxidase inhibitor (MAOI)?

- A) Phenelzine
- B) Tranylcypromine
- C) Selegiline
- D) Amitriptyline

16. What is the primary mechanism of action of levodopa?

- A) Increasing dopamine levels
- B) Blocking dopamine receptors
- C) Increasing acetylcholine levels
- D) Blocking acetylcholine receptors

17. What is the primary mechanism of action of local anesthetics?

- A) Blocking sodium channels
- B) Blocking calcium channels
- C) Enhancing GABA activity
- D) Blocking glutamate activity

18. Which of the following is a skeletal muscle relaxant?

- A) Baclofen
- B) Cyclobenzaprine
- C) Methocarbamol
- D) All of the above

19. What is not an indication for skeletal muscle relaxants?

- A) Muscle spasms
- B) Spasticity
- C) Anesthesia
- D) Inflammation

20. What is the primary mechanism of action of NSAIDs?

- A) Inhibiting prostaglandin synthesis
- B) Blocking opioid receptors
- C) Enhancing GABA activity
- D) Blocking glutamate activity

21. Which of the following is the main risk associated with long-term use of NSAIDs?

- A) Gastrointestinal bleeding
- B) Renal impairment
- C) Cardiovascular events
- D) Hepatotoxicity

22. Which of the following is a calcium channel blocker?

- A) Verapamil
- B) Diltiazem
- C) Nifedipine
- D) All of the above

23. What is the primary mechanism of action of ACE inhibitors?

- A) Blocking angiotensin-converting enzyme
- B) Blocking beta-adrenergic receptors
- C) Enhancing parasympathetic activity
- D) Blocking parasympathetic activity

24. Which of the following is a risk associated with ACE inhibitors is life-threatening?

- A) Cough
- B) Angioedema
- C) Hyperkalemia
- D) B and C

25. What is the primary mechanism of action of bronchodilators?
- A) Relaxing airway smooth muscle
 - B) Reducing inflammation
 - C) Increasing mucus production
 - D) All of the above
26. What is the primary indication for antiemetics?
- A) Nausea and vomiting
 - B) Diarrhea
 - C) Constipation
 - D) Abdominal pain
27. Which of the following is a type of antiemetic?
- A) 5-HT₃ antagonist
 - B) Dopamine antagonist
 - C) Antihistamine
 - D) Proton pump inhibitors
28. Which of the following is a type of laxative?
- A) Stimulant agents
 - B) Osmotic agents
 - C) Bulk-forming agents
 - D) All of the above
29. What is the primary mechanism of action of proton pump inhibitors?
- A) Reducing gastric acid secretion
 - B) Increasing gastric acid secretion
 - C) Neutralizing gastric acid
 - D) All of the above
30. What is the primary mechanism of action of insulin?
- A) Increasing glucose uptake
 - B) Decreasing glucose uptake
 - C) Increasing glycogen synthesis
 - D) All of the above

SECTION 2

SHORT ANSWER QUESTIONS. Answer all the questions. (20 MARKS)

1. Define what is pharmacology? (2 marks)
2. What is the difference between pharmacodynamics and pharmacokinetics? (2 marks)
3. What are the primary indications for NSAIDs? (3 marks)
4. What are affective disorders? List 2 examples (3 marks)
5. What is the difference between agonist and antagonist? (2 marks)
6. List the advantages and disadvantages of parenteral drug administration (4 marks)
7. List four classes of antibiotics? (4marks)

SECTION 3

LONG ANSWERED QUESTIONS. Attempt any two (20 MARKS)

1. Describe pharmacokinetics and the processes involved when one takes a drug for example paracetamol (10 marks)
2. Discuss the role of pharmacology in physical therapy practice (10 marks)
3. Discuss what are anesthetics and how they are used in clinical practice, including the differences and examples in each category (10 marks)