



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCE
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF SEPT-DECEMBER 2024 TRIMESTER EXAMINATIONS
MAIN EXAM**

UNIT CODE: PHT 323 UNIT NAME: PHAMACOLOGY

DATE: Thursday/ 5th/ December
TIME: TWO HOURS
START: 11.15AM STOP : 1:15PM

INSTRUCTIONS

1. Do not write on this question paper

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This exam will take 2 Hours

Section 1. Multiple choice questions. Answer all the Questions (30 Marks)

1. What is the primary focus of pharmacodynamics?
 - A. The movement of drugs within the body
 - B. The effects of drugs within the body
 - C. The chemical properties of drugs
 - D. The metabolism of drugs
2. Which of the following best describes the term “receptor affinity?”
 - A. The ability of a drug to produce a therapeutic effect
 - B. The strength of the binding between a drug and its receptor
 - C. The rate at which a drug is eliminated from the body
 - D. The range of doses that produce therapeutic effects
3. What is the term for a drug that binds to a receptor but does not produce a significant effect?
 - A. Full agonist
 - B. Partial agonist
 - C. Antagonist
 - D. Inverse agonist
4. What does the term “bioavailability” refer to?
 - A. The fraction of an administered drug that reaches systemic circulation
 - B. The rate at which a drug is eliminated from the body
 - C. The degree of binding to plasma proteins
 - D. The amount of drug that is effective at the target site
5. Which organ is primarily responsible for drug metabolism
 - A. Kidneys
 - B. Lungs
 - C. Liver
 - D. Intestines
6. The following are types of drugs used for Parkinson’s disease
 - A. Catechol-o-methyltransferase
 - B. Monoamine oxidase B inhibitors
 - C. Anticholinergics
 - D. All the above
7. Which of the following is a primary action of benzodiazepines?
 - A. Increase the release of dopamine
 - B. Enhance the inhibitory effects of GABA
 - C. Inhibit the activity of glutamate
 - D. Block serotonin reuptake
8. Which neurotransmitter is primarily involved in the pathophysiology of Parkinson’s disease?
 - A. Dopamine
 - B. Acetylcholine
 - C. Norepinephrine
 - D. Serotonin

9. Which drug is commonly used for managing generalized anxiety disorder?
- A. Sertraline
 - B. Phenytoin
 - C. Levodopa
 - D. Diazepam
10. The mechanism of action of barbiturates involves which of the following?
- A. Enhancement of GABA activity
 - B. Inhibition of glutamate release
 - C. Activation of serotonin receptors
 - D. Blockade of sodium channels
11. Which of the following is a commonly used intravenous general anesthetic?
- A. Nitrous oxide
 - B. Halothane
 - C. Propofol
 - D. Desflurane
12. Which of the following anesthetics is known for rapid induction and recovery due to its low blood-gas partition coefficient?
- A. Isoflurane
 - B. Sevoflurane
 - C. Desflurane
 - D. Halothane
13. Which of the following is a key effect of inhaled anesthetics on cardiovascular function?
- A. Increased heart rate and blood pressure
 - B. Decreased heart rate and blood pressure
 - C. No effect on cardiovascular system
 - D. Increased cardiac output
14. Which of the following is a centrally acting skeletal muscle relaxant?
- A. Dantrolene
 - B. Baclofen
 - C. Rocuronium
 - D. Pancuronium
15. Which of the following is a common adverse effect of opioid analgesics?
- A. Hypertension
 - B. Diarrhea
 - C. Respiratory depression
 - D. Increased salivation
16. Which opioid analgesic has both agonist and antagonist effects?
- A. Methadone
 - B. Fentanyl
 - C. Buprenorphine
 - D. Morphine

17. Which of the following NSAIDs selectively inhibits COX-2 more than COX-1?
- A. Aspirin
 - B. Ibuprofen
 - C. Celecoxib
 - D. Naproxen
18. Which of the following is a common adverse effect of long-term NSAID use?
- A. Renal toxicity
 - B. Bradycardia
 - C. Peripheral neuropathy
 - D. Hyperglycemia
19. Which NSAID is known for its antiplatelet (blood-thinning) effect at low doses?
- A. Aspirin
 - B. Diclofenac
 - C. Ketorolac
 - D. Indomethacin
20. How do inflammation and infection differ?
- A. There is no true difference, the terms are interchangeable
 - B. Infection causes a patient to have a fever, whereas inflammation is never accompanied by fever
 - C. Inflammation side effects are minor and do not require drug therapy, whereas infection is serious and requires drug therapy
 - D. Infection is the result of an invasion by disease-causing organisms, whereas inflammation is a result of injury by non-disease causing organisms
21. Which of the following adrenergic receptors primarily causes vasoconstriction?
- A. Alpha-1
 - B. Beta-1
 - C. Beta-2
 - D. Alpha-2
22. Which drug is commonly used for rapid relief of angina symptoms?
- A. Atenolol
 - B. Nitroglycerin
 - C. Digoxin
 - D. Amlodipine
23. Which of the following classes of drugs is often first-line therapy in congestive heart failure due to their ability to block the angiotensin-aldosterone system (RAAS)?
- A. Beta-blockers
 - B. Diuretics
 - C. ACE inhibitors
 - D. Calcium channel blockers

24. Which of the following is a common anticoagulant used for the prevention of thromboembolic disorders?
- A. Warfarin
 - B. Aspirin
 - C. Acetaminophen
 - D. Ibuprofen
25. A major side effect of anticoagulant therapy is:
- A. Thrombosis
 - B. Hemorrhage
 - C. Hypertension
 - D. Pulmonary embolism
26. Anticoagulants are most likely prescribed in patients with which of the following conditions?
- A. Hypertension
 - B. Atrial fibrillation
 - C. Hyperlipidemia
 - D. Diabetes
27. A common side effect of statin therapy is:
- A. Hypoglycemia
 - B. Muscle pain or weakness
 - C. Hypertension
 - D. Diarrhea
28. Which action of metoclopramide helps prevent nausea and vomiting?
- A. Suppressing the vomiting reflex
 - B. Helping food move more rapidly through the gastrointestinal system
 - C. Preventing cancer chemotherapy-induced vomiting
 - D. Providing a protective coating to the stomach and esophagus
29. What do you teach a patient who is undergoing chemotherapy and is taking an antiemetic drug?
- A. Take the drug with food
 - B. Take the drug 30 minutes before meals
 - C. Take the drug 30 mins after meals
 - D. Take the drug at bedtime
30. Which of the following drugs is used to treat diarrhea by slowing down intestinal motility?
- A. Loperamide
 - B. Bisacodyl
 - C. Lactulose
 - D. Meclizine

Section B. Short structured questions. Answer all the questions (20 Marks)

31. Why is pharmacology important for physical therapists? (4marks)
32. What are the common routes of drug administration? (3 marks)
33. What is the mechanism of action of non-steroidal anti-inflammatory drugs (NSAIDS)? (4marks)
34. What are muscle relaxants, and how do they help in physical therapy? (4marks)
35. Ben is a 70 year old man who has been recently diagnosed with Parkinson's disease. The doctor prescribed carbidopa-levodopa orally four times a day and Selegiline 5mg orally twice a day.
 - A. List 3 serious side effects of carbidopa-levodopa which you should monitor. (3 marks)
 - B. Which class of drugs is selegiline and why was it added to the treatment? (2 marks)

Section C. Long structured questions. Answer any of the 2 questions (20 Marks)

- 36 Describe the four main processes involved in pharmacokinetics (10 marks)
- 37 .Explore the use of anti-epileptic drugs in patients with neurological disorders undergoing physical rehabilitation. How do these drugs affect motor control, cognition and overall functional outcomes? (10 marks)
38. Discuss the ethical code of conduct for the physical therapist (10 marks)