



# TECHNICAL UNIVERSITY OF MOMBASA

---

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DIPLOMA IN PHARMACEUTICAL TECHNOLOGY

APM 2320 : PHARMACOLOGY AND THERAPEUTICS III

END OF SEMESTER EXAMINATION

**SERIES:** AUGUST 2019

**TIME:** 2 HOURS

**DATE:** Pick Date Select Month Pick Year

## **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of Three sections: A,B and C. Attempt All Questions in Sections A and B and TWO questions in Section C.

**Circle the correct answer in section A.**

---

## **Section A**

**Answer ALL questions**

1. Which of the following is a long-acting topical decongestant agent?

- A. Epinephrine
- B. Norepinephrine
- C. Phenylephrine
- D. Xylometazoline

2. Local anesthetics produce:

- A. Analgesia, amnesia, loss of consciousness
- B. Blocking pain sensation without loss of consciousness

- C. Alleviation of anxiety and pain with an altered level of consciousness
  - D. A stupor or somnolent state
3. Correct statements concerning aspirin include all of the following EXCEPT:
- A. It inhibits mainly peripheral COX
  - B. It does not have an anti-inflammatory effect
  - C. It inhibits platelet aggregation
  - D. It stimulates respiration by a direct action on the respiratory center
4. Which of the following mechanism of action is correct?
- a) Albendazole is a depolarizing neuromuscular junction blocker
  - b) Ivermectin increase chlorine ion influx causing parasite paralysis
  - c) Niclosamide inhibits microtubule assembly
  - d) Levamisole inhibits ATP synthesis
5. All the following agents act on the cell wall except
- a) penicillins
  - b) Cephalosporins
  - c) Vancomycin
  - d) Polymixins
6. The following is not a target during the management of hypertension
- a) Stroke volume
  - b) Heart rate
  - c) The total peripheral resistance
  - d) Glomerular filtration rate
7. In classification of antiarrhythmic agents
- a) Class II drugs refer to calcium channel blockers
  - b) Quinidine is the prototype class I drug
  - c) Class IV drugs are beta adrenoceptor blockers

d) Cardiac glycosides have no role in treatment of arrhythmias

8. The following is false about osmotic diuretics

a) Urea is an example

b) They are usually high molecular weight hydrophobic substances

c) They are ideal in hypovolemic shock patients

d) They enhance water excretion rather than electrolyte excretion

9. Tick the estrogen inhibitor:

a) Leuprolide

b) Tamoxifen

c) Flutamide

d) Anastrozole

10. Which drug is used for malaria chemoprophylaxis and treatment:

a) Chloroquine

b) Quinidine

c) Quinine

d) Sulfonamides

11. Which group of antibiotics has an antimalarial effect:

a) Aminoglycosides

b) Tetracyclines

c) Carbapenems

d) Penicillins

12. A 30 year old man is recently diagnosed with HIV and therapy is started. After the first week of therapy, the patient complains of headaches, irritability, and nightmares. Which one of the following anti-retroviral drugs is most likely to be causing these symptoms?

a) Efavirenz

b) Indinavir

c) Lamivudine

d) Nevirapine

13. The decision to begin antiretroviral therapy is based on:

a) the intensity of the patient's clinical symptoms

b) the CD4 cell count

c) the plasma viral load

d) All of the above

14. Which statement about ART regimen is TRUE?

a) Give only 1 or 2 ARVs if intolerance is present

b) Use AZT+3TC+NVP in patients with Hb <8 g/dL.

c) Give only 1 ARV in asymptomatic (WHO stage 1) patients

d) ART must be given in 3-drug combination

15. Oral candidiasis in AIDS is treated with:

a) Acyclovir

b) Trimethoprim + sulfamethoxazole

c) Fluconazole

d) Zidovudine

16. Which of the following vitamins is given along with isoniazide in treatment of tuberculosis?

a) Nicotinic acid

b) Riboflavin

c) Pyridoxine

d) Ascorbic acid

17. Which is most important in case of a patient diagnosed as AIDS and who is expressing death wishes?

a) Send the patient for CD4 count testing.

b) immediately send the patient for HIV confirmation tests.

c) Treat the patient for depression and suicidal thoughts.

d) Immediately start antiretroviral therapy (ART).

18. Goals of ART includes all, EXCEPT;

- a) Greatest possible reduction in viral load for as long as possible.
- b) Prolongation of life and improvement of Quality of Life.
- c) Elimination of HIV entirely from the body
- d) Rational sequencing of drugs, limiting drug toxicity, and facilitation of adherence

19. Which of the following is necessary for virus replication

- a) Invasion of host cell
- b) RNA or DNA
- c) All of the above
- d) None of the above

20. Rational combination of anticancer drugs is used to:

- a) Provide synergism resulting from the use of anticancer drugs with different mechanisms combination
- b) Provide synergism resulting from the use of anticancer drugs with the same mechanisms combination
- c) Provide stimulation of immune system
- d) Provide stimulation of cell proliferation

21. Tick the anticancer drug of plant origin:

- a) Dactinomycin
- b) Vincristine
- c) Methotrexate
- d) Procarbazine

22. Indicate a cholinomimetic agent, which is related to direct-acting drugs:

- a) Edrophonium
- b) Physostigmine
- c) Carbachol
- d) Isoflurophate

23. Acetylcholine is not used in clinical practice because:

- a) It is very toxic
- b) The doses required are very high

c) It is very rapidly hydrolyzed

d) It is very costly

24. Parasympathomimetic drugs cause:

a) Bronchodilation

b) Mydriasis

c) Bradycardia

d) Constipation

25. What does the term “potentiation” mean?

a) Cumulative ability of a drug    b) Hypersensitivity to a drug

c) Fast tolerance developing    d) Intensive increase of drug effects due to their combination

26. Which of the following is a characteristic of Type A Adverse Drug Reactions

a) unrelated to pharmacological action of drug

b) unpredictable

c) uncommon

d) Dose-dependent

27. A person was brought to the hospital casualty. He is talking irrelevant. He is having dry mouth with hot skin, dilated pupils, staggering gait and slurred speech. The most probable diagnosis is

a. Alcohol intoxication

b. Carbamates poisoning

c. Organophosphorous poisoning

d. Dhatura poisoning

28. In methyl alcohol poisoning, there is central nervous system depression, cardiac depression and optic nerve atrophy. These effects are produced due to:

a. Formaldehyde and formic acid

b. Acetaldehyde

c. Pyridine

d. Acetic acid

29. Regarding methanol poisoning

Assertion: Administration of ethanol is one of the treatment modalities

Reason: Ethanol inhibits alcohol dehydrogenase

Please select the most correct option from the following:

- a. Both assertion and reason are true, and the reason is the correct explanation for the assertion
- b. Both assertion and reason are true, and the reason is not the correct explanation for the assertion
- c. Assertion is true, but the reason is false
- d. Assertion is false, but the reason is true

30. What is toxicology?

- a) The field that studies the adverse effects on humans and animals.
- b) The field that studies the adverse effects of chemicals on living organisms.
- c) The field that studies the adverse effects of chemicals and microorganisms.
- d) The field that studies the risk-benefit balance of chemicals for living organisms.

10. Identify a statement that is true about partial seizures.

- a) They only impair consciousness and attention
- b) Are also referred to as focal epilepsies
- c) They are as a result of an underlying focal brain lesion
- d) They commonly occur children and adolescence

31. Which of the following are some of the signs and symptoms seen in parkinson's disease.

- 1. Loss of speech
- 2. Emotionless expression.
- 3. Difficult in swallowing.
- 4. Micrographia.
- 5. Paralysis.

- a) 1,2,5.
- b) 1,4,5.

c) 2,3,4.

d) 3,4,5.

32. Pick the main approach of peptic ulcer treatment:

- a) Neutralization of gastric acid
- b) Eradication of *Helicobacter pylori*
- c) Inhibition of gastric acid secretion
- d) All the above

33. Gastric acid secretion is under the control of the following agents EXCEPT:

- a) Histamine
- b) Acetylcholine
- c) Serotonin
- d) Gastrin

34. Indicate the drug belonging to proton pump inhibitors:

- a) Pirenzepine
- b) Ranitidine
- c) Omeprazole
- d) Trimethaphan

35. All of the following agents intensify the secretion of gastric glands EXCEPT:

- a) Pepsin
- b) Gastrin
- c) Histamine
- d) Carbonate mineral waters

36. Which of the following drugs is an agent of substitution therapy?

- a) Gastrin
- b) Hydrochloric acid
- c) Hystamine
- d) Carbonate mineral waters



37. Choose the drug which is a H<sub>2</sub>-receptor antagonist:

- a) Omeprazole
- b) Pirenzepine
- c) Carbenoxolone
- d) Ranitidine

38. All of the following drugs are proton pump inhibitors EXCEPT:

- a) Pantoprazole
- b) Omeprazole
- c) Famotidine
- d) Rabeprazole

39. Indicate the drug belonging to M<sub>1</sub>-cholinoblockers:

- a) Cimetidine
- b) Ranitidine
- c) Pirenzepin
- d) Omeprazole

40. Which of the following drugs may cause reversible gynecomastia?

- a) Omeprazole
- b) Pirenzepine
- c) Cimetidine
- d) Sucralfate

## **SECTION B**

Answer All Questions (40 Marks)

41. Give the right sequential order of the following steps. (Number the steps from 1 to 4 on the dots). 4 Marks

Risk assessment .....

Hazard identification .....

Risk management .....

Hazard characterisation .....

32. Match each description with its corresponding term. The terms may be used only once. 5 Marks

Description	Number of Term	Term
A. Process requiring energy .....		1. facilitated diffusion
B. ADME characteristics .....		2. toxicokinetics
C. Transport by a carrier .....		3. first pass effect
D. Process preventing systemic effects .....		4. toxicodynamics
E. Reaction with the toxicological receptor .....		5. active transport

33. Explain the pharmacological basis of combining Carbidopa with L- dopa in treatment of parkinsonism (2 mks)

34. Outline 4 types of drugs used for uncomplicated malaria (4marks)

35. Explain 2 factors that influence blood pressure in the body and how these factors can be targeted by antihypertensive drugs (4 marks)

36. Write PEP in full and list the currently recommended drugs. (4 Marks)

37. Describe 4 functions of the skin. 4 Marks

39. List 3 examples of microorganisms that naturally inhabit the human skin. 3 Marks

40. Name one drug used for the treatment of acne. 1 Mark

41. Define encephalitis and outline 3 signs and symptoms. 4 Marks

42. Outline 4 mechanisms of anticancer drugs. 4 Marks

43. Define neuroleptics. 1 Mark

Section C.

Answer TWO questions (40 Marks)

39. (a) Discuss five classes of drugs used in treatment of peptic ulcer disease giving the mode of action and an example in each class. (10 marks)

(b) Outline 5 classes of anticancer drugs with one example of each. (10 Marks)

40. (a) Outline 5 causes of cancer. (10 Marks)

(b) Explain 5 characteristics of a tumour. (10 Marks)

41. (a) Describe the 5 management points for poisoning. (10 Marks)

(b) Outline 5 substances responsible for poisoning in humans and their treatment. (10 Marks)