



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR
SECOND YEAR FIRST TRIMESTER EXAMINATIONS
FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN NURSING-DL
COURSE TITLE: CLINICAL PHARMACOLOGY &
THERAPEUTICS
COURSE CODE: NCD 211**

DATE: 8TH APRIL/2024

TIME: 11:30 PM-2:30PM

INSTRUCTIONS TO CANDIDATES

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating
Please turn over

SECTION A – MULTIPLE CHOICE QUESTIONS (60 MARKS)

Choose the correct answer in this section

1. What is the mechanism of action of codeine?
 - A. Acts on mu receptors only
 - B. Acts on delta receptors only
 - C. Acts on kappa receptors only
 - D. Acts on all the above receptor
2. What is the mechanism of action of phenobarbitone?
 - A. Blocks K^+ channels
 - B. Blocks Ca^{2+} channels
 - C. Blocks Na^+ channels
 - D. None of the above
3. Which one of the following is a stool softener?
 - A. Senna
 - B. Docusates
 - C. Magnesium hydroxide
 - D. Methylcellulose
4. Which one of the following vitamins is deficiency likely to occur among chronic alcoholics?
 - A. Vitamin A
 - B. Vitamin C
 - C. Vitamin B₁
 - D. Vitamin B₆
5. Which one of the following is a stimulant purgative?
 - A. Bran
 - B. Bisacodyl
 - C. Methylcellulose
 - D. Dietary fibre
6. Which of the following is an example of a drug that is degraded in the gastrointestinal tract?
 - A. Insulin
 - B. Penicillin C

- C. Pen-V
 - D. Humilin 70/3
7. Bioavailability?
- A. It is the rate and extent of absorption of a drug from a dosage form to its original state
 - B. It is measured as a fraction (F) of administered dose of a drug that reaches the systemic circulation in the unchanged form.
 - C. Bioavailability does not assume practical significance for drugs with low safety margin.
 - D. It is the rate and extent of desorption of a drug from a dosage form to its original state
8. Which one of the following is not an adverse drug reaction of diclofenac?
- A. Peptic ulcers
 - B. Nephrotoxicity
 - C. Hepatotoxicity
 - D. Headache
9. How long do senna tablets take to produce a soft stool?
- A. 6 to 8 hours
 - B. 24 hours
 - C. 1-3 days
 - D. 3 hours
10. Which one of the following drugs is a selective cyclooxygenase 2 inhibitor?
- A. Paracetamol
 - B. Ibuprofen
 - C. Meloxicam
 - D. Diclofenac
11. Which one of the following is an indication for use of aspirin?
- A. Diarrhoea
 - B. Peptic ulcers
 - C. Antiplatelet
 - D. Asthma
12. Which one of the following is a partial agonist opioid?
- A. Tramadol
 - B. Diamorphine
 - C. Methadone
 - D. Pethidine

13. Which one of the following is a specific antidote for benzodiazepine poisoning?
- A. Naloxone
 - B. Methadone
 - C. Codeine
 - D. Flumazenil
14. Emetics are contraindicated in all the following conditions EXCEPT which one?
- A. Corrosive (acid, alkali) poisoning
 - B. Kerosene (petroleum) poisoning
 - C. Conscious patient
 - D. Morphine and phenothiazine poisoning
15. Which one of the following is an emetic?
- A. Chlorpromazine
 - B. Apomorphine
 - C. Senna
 - D. Metoclopramide
16. Which one of the following antiemetics is effective in controlling cancer chemotherapy induced vomiting?
- A. Ondansetron
 - B. Metoclopramide
 - C. Hyoscine
 - D. Dicyclomine
17. Which one of the following is a H₂ receptor antagonist?
- A. Omeprazole
 - B. Ranitidine
 - C. Magnesium hydroxide
 - D. Senna
18. Which one of the following is an adverse drug reaction of magnesium hydroxide?
- A. Constipation
 - B. Diarrhoea
 - C. Headache
 - D. Nausea
19. Which one of the following is an oral hypoglycemic agent?
- A. Glibenclamide
 - B. Frusemide

- C. Digoxin
 - D. Insulin
20. Action mechanism of alkylating agents is:
- A. Producing carbonium ions altering protein structure
 - B. Producing carbonium ions altering DNA structure
 - C. Structural antagonism against purine and pyrimidine
 - D. Inhibition of DNA-dependent RNA synthesis
21. Which of the following is an anticancer drug,
- A. Pyrimidine antagonist:
 - B. Fluorouracil
 - C. Mercaptopurine
 - D. Thioguanine
 - E. Methotrexate
22. The antibiotic for cancer chemotherapy
- A. Cytarabine
 - B. Doxorubicin
 - C. Gentamycin
 - D. Etoposide
23. General contraindications for anticancer drugs are:
- A. Depression of bone marrow
 - B. Acute infections
 - C. Severe hepatic and/or renal insufficiency
 - D. All of the above
24. Action mechanism of methotrexate is:
- A. Inhibition of dihydrofolate reductase
 - B. Activation of cell differentiation
 - C. Catabolic depletion of serum asparagine
 - D. All of the above
25. Which of the following drug belongs to nucleoside reverse transcriptase inhibitors:
- A. Didanosine
 - B. Gancyclovir
 - C. Nevirapine
 - D. Vidarabine
26. Which among this drugs is used for HIV infection treatment as a derivative of nucleosides:
- A. Acyclovir
 - B. Zidovudine
 - C. Gancyclovir
 - D. Trifluridine
27. Which drug, inhibits viral DNA synthesis:
- A. Interferon

- B. Saquinavir
 - C. Amantadine
 - D. Acyclovir**
28. Which among this drugs is the drug used for toxoplasmosis treatment:
- A. Chloroquine
 - B. Tetracyclin
 - C. Suramin
 - D. Pyrimethamine**
29. What is the mechanism of action of carbamazepine?
- A. Blocks K^+ channels
 - B. Blocks Ca^{2+} channels
 - C. Blocks Na^+ channels
 - D. None of the above**
30. Mechanism of Amphotericin B action is:
- A. Inhibition of cell wall synthesis
 - B. Inhibition of fungal protein synthesis
 - C. Inhibition of DNA synthesis
 - D. Alteration of cell membrane permeability**
31. An AIDS patient, who is being treated with multiple drugs, develops breast hypertrophy, central adiposity, hyperlipidemia, insulin resistance and nephrolithiasis. If these changes are related to his drug treatment, this drug belongs to which group of anti-retroviral drugs?
- A. Nucleoside Reverse Transcriptase Inhibitors (NRTIS)
 - B. Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIS)
 - C. Fusion Inhibitors
 - D. Protease Inhibitors**
32. A 40 year old HIV positive patient is receiving (Highly active anti-retroviral therapy) HAART regimen. Four weeks after initiating therapy, he comes to the emergency department complaining of severe pain in the flank, nausea and frequent urination. Which one of the following drugs is most likely the cause of his symptoms?
- A. Zidovudine
 - B. Indinavir
 - C. Efavirenz
 - D. Nevirapine**
33. 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**

34. When approaching patients about their use of complementary and alternative medicine (CAM), what is the nurses' primary objective?
- A. To discourage patients from seeing CAM providers
 - B. To promote the patient's adherence to prescribed medication together with CAM
 - C. To establish an open discussion about all aspects of the patient's health care
 - D. To gradually dissuade patients from using CAM
35. Use of morphine is contra-indicated in the following conditions EXCEPT:
- A. Head injury
 - B. Acute myocardial infarction
 - C. Acute abdominal pain before diagnosis
 - D. Bronchial asthma
36. The mechanism of action of beta-2 receptor agonists in bronchial asthma includes all the following, EXCEPT:
- A. Relaxation of airway smooth muscle
 - B. Inhibition of plasma exudation and airway edema
 - C. Increased mucociliary clearance
 - D. Increasing the release of mast cell mediators
37. You are managing a 62-year-old woman who is complaining of crushing chest pain. Her blood pressure is 84/64 mm Hg and her heart rate is 110 beats/min. You telephone the physician who advises you to give her prescribed nitroglycerin. After receiving this order, you should:
- A. Reassess the patient's heart rate and then assist with the nitroglycerin
 - B. Repeat the patient's blood pressure to the physician and confirm the order
 - C. Wait for 10 minutes, reassess the blood pressure, and then give the nitroglycerin
 - D. Administer the nitroglycerin to the patient and then reassess her blood pressure
38. Epinephrine is given to patients with anaphylactic shock because of its effects of:
- A. Bronchodilation and vasodilatation
 - B. Bronchodilation and vasoconstriction
 - C. Vasodilatation and bronchoconstriction
 - D. Bronchoconstriction and vasoconstriction
39. The process by which medications travel through body tissues until they reach the bloodstream is called:
- A. Adsorption
 - B. Onset of action
 - C. Absorption
 - D. Transformation
40. Major roles of drug receptors is to:
- A. Determine rate of drug elimination
 - B. Determine drug action selectivity
 - C. Determine dosage calculations
 - D. Act as drug storage sites

41. A patient has been vomiting on and off for the past 8 hours. He goes to the local emergency room for treatment. Which of the following medications might he receive?
- A. Antiemetic
 - B. Cathartic
 - C. Antacid
 - D. Anthelmintic
42. The five rights of administration include:
- A. The right patient, the right diagnosis, the right drug, the right route, the right care plan
 - B. The right drug, the right route, the right dose, the right time, the right patient
 - C. The right patient, the right drug, the right dosage, the right route, the right effect
 - D. The right patient, the right cost, the right diagnosis, the right drug, the right care plan
43. Management of bronchial asthma includes all the following, EXCEPT:
- A. A high concentration of oxygen to achieve oxygen saturation of >90%
 - B. Short-acting inhaled beta-2-agonists
 - C. A slow infusion of aminophylline with monitoring blood values
 - D. A rapid infusion of dopamine
44. Salbutamol is a(n):
- A. Corticosteroid
 - B. Alpha-adrenergic receptor agonists
 - C. Beta-adrenergic receptor agonist
 - D. Anticholinergic
45. Which of the following drugs is a *leukotriene-modifying drug* indicated in the management of bronchial asthma?
- A. Triamcinolone acetonide
 - B. Budesonide
 - C. Zafirlukast
 - D. Flunisolide
46. A seven years old boy presented with a three day history of rhinorrhea and fever. He had no cough, chest pain, ear pain, wheeze, and dyspnea or throat pain. Which of the following drugs is indicated in his management?
- A. Paracetamol
 - B. Cough syrups
 - C. Amoxicillin
 - D. Salbutamol
47. A fifteen year old patient with cystic fibrosis complains of thick sputum which is difficult to expectorate. Which one of the following is the most potent mucolytic agent useful in this condition?
- A. Saline inhalations
 - B. Sodium bicarbonate inhalation
 - C. N – acetyl cysteine
 - D. Recombinant DNA –ase

48. A classic drug interaction, greatly involving an increased bleeding time, involves warfarin and:
- a. Vitamin B-12
 - b. Acetaminophen
 - c. Acetylsalicylic acid
 - d. None of the above
49. Chemotherapy
- a. Is most effective against smaller tumours with slowly proliferating cells
 - b. Is most effective against larger tumours with rapidly proliferating cells
 - c. Is most effective against smaller tumours with rapidly proliferating cells
 - d. Increases sodium excretion
50. Mr. Majimbo has been given atropine post-operatively to manage his bradycardia. The nurse should know that this drug is classified as?
- A. Adrenergic drug
 - B. Cholinergic drug
 - C. Anti-cholinergic drug
 - D. Anti-adrenergic drug
51. Aminoglycosides have the following unwanted effects:
- A. Pancytopenia
 - B. Hepatotoxicity
 - C. Ototoxicity, nephrotoxicity
 - D. Irritation of gastrointestinal mucosa
52. Aminoglycosides are effective against:
- A. Gram positive microorganisms, anaerobic microorganisms, spirochetes
 - B. Broad-spectrum, except *Pseudomonas aeruginosa*
 - C. Gram negative microorganisms, anaerobic microorganisms
 - D. Broad-spectrum, except anaerobic microorganisms and viruses
53. Which of the following drug belongs to antibiotics-aminoglycosides:
- A. Erythromycin
 - B. Gentamycin
 - C. Vancomycin
 - D. Polymyxin
54. Insulin is:
- A. A glycoprotein with a molecular weight of 6000

- B. A small protein with a molecular weight of 5808 having disulphide linkage
 - C. A fructooligosaccharide
 - D. A catecholamine
55. Indicate the drugs which are Ca-channel blockers influencing the brain blood flow:
- A. Amlon, Picamilon
 - B. Nimodipine, Cinnarizine
 - C. Heparin, Warfarin
 - D. Vinpocetine, Nicergoline
56. Which of the following drugs is related to anticoagulants and may be useful in disorders of cerebral circulation?
- A. Aspirin
 - B. Cinnarizine
 - C. Nicergoline
 - D. Heparin
57. Which group of drugs is used for the treatment of shock with hypovolaemia (reduced circulating blood volume):
- A. Positive inotropic drugs
 - B. Vasoconstrictors
 - C. Plasmoeexpanders
 - D. Analeptics and tonics
58. Dopamine in high doses influences mainly the:
- A. Alfa-adrenoreceptors (leads to peripheral vasoconstriction)
 - B. Dopamine's receptors (leads to vasodilation of renal and mesenterial vessels)
 - C. Beta-1 adrenoreceptors (leads to enhancing of cardiac output)
 - D. All of the above
59. Which of the following is the positive inotropic drug of non-glycoside structure:
- A. Digitoxin
 - B. Digoxin
 - C. Dobutamine

D. Atropine

60. For increasing blood pressure in case of low cardiac output the following agents must be used: a
Ganglioblockers

A. Vasoconstrictors

B. Vasodilators and vasoconstrictors

C. Positive inotropic drugs

D. Diuretics

SECTION B: SHORT ANSWER QUESTIONS (SAQS) (20 MARKS)

1. Describe toxicology in clinical pharmacology(10 Marks)

2. Describe the nursing interventions in acetaminophen poisoning(10 Marks)

SECTION C: LONG ESSAY QUESTIONS (LEQs); 20 MARKS

1. Describe the principles of toxicology (10 Marks)

2. Describe the nursing intervention in the management of drug toxicity (10 Marks)