110

(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC YEAR

FOURTH YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN CLINICAL MEDICINE AND PHYSIOTHERAPY PROGRAMS

(MAIN PAPER)

COURSE CODE: HCM 255/BSP 223

COURSE TITLE: CLINICAL PHARMACOLOGY AND THERAPEUTICS II

DATE: THURSDAY 21ST APRIL 2022 **TIME:** 8:00-11:00 AM

Instructions

Time 2 hours

Answer all questions

Section A comprise of 20 MCQs 1 mark each

Section B comprise 8 short answer questions: a total of 40 marks

Section C comprises of 3 long essay questions: 20 marks each

SECTION A; MCQ: 20MARKS: ANSWER ALL QUESTIONS

1. Which of the following is a likely side effect of corticosteroids when used in the management of inflammatory disorders?

   A. decreases in blood pressure
   B. anabolic actions in wound healing
   C. increase in intraocular pressure
   D. sedation

2. What is the mechanism of action of antihyperlipidemic drug cholestyramine?

   A. sequestration of bile acids
   B. decreased hepatic secretion of vldl
   C. increased lipoprotein lipase activity
   D. inhibition of hmg-coa reductase

3. Which of the following is the most appropriate drug for a gout patient with renal calculi, high uremia and allergy to sulfonamides?

   A. allopurinol
   B. indomethacin
   C. colchicine
   D. probenecid

4. What is the rationale of prescribing an antibacterial in cases of respiratory viral infections

   A. to prevent primary fungal infection
   B. to prevent repeat viral infection
   C. to prevent secondary bacterial infection
   D. to prevent breakdown of the immune system

5. The electrocardiograph (**ECG**) of a patient who is receiving digitalis in the therapeutic dose range would be likely to exhibit:
   A. prolongation of the QT interval
   B. prolongation of the PR interval
   C. widening of the QRS complex
   D. elevation of the ST segment

6. What is the mechanism of action of the anticoagulant warfarin?

   A. Inhibition of synthesis of prothrombin and coagulation factors VII, IX, and X
   B. Inhibition of platelet aggregation in vitro
   C. Increase in the plasma level of factor IX
   D. Inhibition of thrombin and early coagulation steps

7. A patient with an acute MI is treated with alteplase. What is the mechanism of action of alteplase?

   A. inhibition of platelet thromboxane production
   B. antagonism of ADP receptor
   C. glycoprotein IIb/IIIa antagonist
   D. activation of plasminogen from plasmin

8. Which of the following is the mechanism of action of cromolyn, a common drug used in treatment of allergy-induced asthma?
   A. inhibition of airway muscarinic receptors
   B. inhibition of 5-lipoxygenase
   C. mucus breakdown
   D. Inhibition of phosphodiesterase

9. Which one of the following antiinflammatory drugs act by decreasing tumor necrosis factor?
   A. Etanercept
   B. Sulfasalazine
   C. Prednisone
   D. Penicillamine

10. Which of the following drugs is associated with an Systemic lupus erythematosus (SLE)-like syndrome?

   A. Captopril
   B. Lidocaine
   C. Procainamide
   D. Quinidine

11. Which of the following is a side effect commonly associated with spironolactone?

A. alkalosis
B. hirsutism
C. hyperkalemia
D. hypercalcemia

12. The antiarrhythmic effect of lidocaine is due to which of the following mechanism

A. suppressesion of excitability in hypoxic areas of the heart
B. prolongation of the QT interval
C. prolongation of the PR interval
D. depression of the slope of phase 0 in slow response tissues

13. Which of the following would be the best drug for managing an hypertensive patient who also suffer from essential tremor?

A. prazosin
B. clonidine
C. metoprolol
D. propranolol

14. Which of the following is a major toxic effect of digoxin overdose?

A.seizures
B.hypercalcemia
C.visual disturbances
D. intermittent claudication

15. Which of the following is the mechanism via which both dobutamine and inamrinone increase cardiac contractility?

A. activation of adenylyl cyclase
B. inactivation of Na channels
C. inhibition of Na+/K+-ATPase
D. increasing cAMP

16. Which one of the following drugs blocks both repolarizing K^+ channels and calcium channels in the AV node?

A. amiodarone
B. quinidine
C. lidocaine
D. sotalol

17. Which of the following drugs reduces both preload and afterload, and also inhibits cardiac remodelling in patients with congestive heart failure?

A. hydralazine
B. hydrochlorothiazide
C. captopril
D. nifedipine

18. The antiviral drugs oseltamivir and zanamivir act by inhibiting?

A. RNA polymerase
B. reverse transcriptase
C. thymidine kinase
D. neuraminidase

19. Which of the following drugs is effective against giardiasis but not amebiasis
A. quinacrine
B. metronidazole
C. tinidazole
D. diloxanide

20. Which of the following drugs is used in the management of pulmonary hypertension?

A. alprostadil
B. dinoprostone
C. epoprostenol
D. latanoprost

Section B: Short answer questions (40marks)

1. Describe the key components of a well written drug prescription **(8marks)**

2. Explain the rationale for alkalinizing the urine as part of management of aspirin poisoning **(4marks)**

3. Name four drugs used in malaria chemoprophylaxis **(4 marks)**

4. Indicate two drugs that can be used to treat patients with the following:

   a. Influenza A **(2 marks)**
   b. Herpes simplex **(2marks)**
   c. Amoebiasis **(2 marks)**
   d. Visceral leishmaniasis **(2marks)**

5. Name four reversible inhibitors of COX 1 and COX 2, with analgesic, antipyretic and antiinflammatory actions **(4 marks)**

6. Using specific examples give SIX drug classes that are used in the management of nausea and vomiting **(6 marks)**

7. Name FOUR commonly used antiplatelet drugs **(4 marks)**

8. Explain the mechanism of action of proton pump inhibitors, like omeprazole **(2 marks)**

Section C: Long essay questions 40 Marks: answer any Two

1. Mark, a 60 years old patient who is taking the following drugs losartan, lisinopril, spironolactone and insulin starts to complain bitterly of dry cough and angioedema. You suspect that his complains is due to one of the drugs he is taking.
   A) Identify the potential drug, classify the drug and list four other drugs in that class **(6 mark)**
   B) Describe the pharmacokinetics, mechanisms of action, clinical uses of the class and mechanisms by which these drugs cause the dry cough **(14 marks)**

2. Discuss in detail the clinical pharmacology of quinine, including the guidelines followed during IV and IM administration **(20 marks)**

3. Describe the clinical pharmacology of drugs used in the management of peptic ulcers disease **(20marks)**