



(University of Choice)

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

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

SECOND YEAR, FIRST TRIMESTER EXAMINATION

**FOR THE DEGREE IN
BSC. CLINICAL MEDICINE , SURGERY. AND COMMUNITY
UPGRADING GROUP**

COURSE CODE: HCM 224

COURSE TITLE: CLINICAL PHARMACOLOGY I

DATE: Thursday 13th January 2022 TIME: 8:00-10:00Am

INSTRUCTIONS TO CANDIDATES

Answer All Questions

Section A: Multiple Choice Questions (MCQ)	20 Marks.
Section B: Short Answer Questions (SAQ)	40 Marks.
Section C: Long Answer Question (LAQ)	40 Marks

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating 1

This Paper Consists of 4 Printed Pages. Please Turn Over.

Section A : Multiple choice questions

20 marks

1. All the following Antimalarial are Dihydrofolate reductase (DHFR) inhibitors except?
 - A) Proguanil
 - B) Cycloguanil
 - C) Pyrimethamine
 - D) Trimethoprim (generic)
 - E) Daspone
2. Treatment of malaria caused by chloroquine-resistant *P falciparum* may be done by oral quinine sulfate and clindamycin combinations.
 - A) True
 - B) False
3. All the following agents have activity against tissue stages of malaria infection except;
 - A) Primaquine
 - B) Doxycycline
 - C) Pyrimethamine
 - D) Artesunate
4. The following agents can be used in both treatment and prophylaxis of malaria
 - A) Artesunate alone,=
 - B) Artesunate and mefloquine
 - C) Dihydroartemisinin and piperaquine
 - D) Proguanil and artovequone
 - E) None of the above
5. The antimalarial agent used in the prophylaxis of malaria in pregnancy as Intermittent preventive therapy in pregnancy (IPTp)
 - A) Proguanil artovequone
 - B) Proguanil alone
 - C) Pyrimethamine/Sulfadoxine
 - D) All of the above
 - E) None of the above

6. Gynecomastia can occur as a side effect of one of the following agents used as anti secretory agent:
 - A) Bromocriptine
 - B) Cimetidine
 - C) Famotidine
 - D) Levodopa
 - E) None of the above agents
7. Compared to H2 blockers, omeprazole affords the following:
 - A) Faster relief of ulcer pain
 - B) Faster healing of duodenal ulcer
 - C) Higher efficacy in healing reflux esophagitis
 - D) All of the above
 - E) None of the above
8. Domperidone will give the following advantage over metoclopramide;
 - A) Does not cross into the CNS and therefore will nor have extrapyramidal side effects associated with metoclopramide
 - B) Domperidone has both prokinetic and antiemetic effect while metoclopramide only has antiemetic effect since it only acts in the CNS
 - C) Both A and B
 - D) None of the above
9. All the following agents may be included in a hemorrhoidal preparation except
 - A) Astringent
 - B) Local anesthesia
 - C) Vasoconstrictors
 - D) Antibacterial agent
 - E) Antidiarrheal agent
10. Microhemorrhages in the brain and other organs associated with Falciparum parasites mainly due to:
 - A) Increased platelet count
 - B) Reduced blood flow
 - C) Stickiness of falciparum parasites to the vascular epithelium

- D) Falciparum parasite-induced thrombocytopenic purpura
 - E) Falciparum parasite induced polycythaemia Vera
11. In the treatment of Toxoplasmosis which of the following is used:
- A) Pyrimethamine (Daraprim) plus sulfamethoxazole
 - B) Pyrimethamine (Daraprim) plus sulfadiazine
 - C) Both A and B
 - D) Neither A nor B
12. The following statement about Omeprazole is true except:
- A) It is highly plasma protein bound
 - B) Its bioavailability is not affected by food
 - C) It is metabolized by the liver
 - D) It provides long-lasting acid suppression
 - E) It irreversibly inhibits the proton pump in then parietal cells of the stomach mucosa
13. Which of the following drugs have an anti-androgenic effect?
- A) Ranitidine
 - B) Cimetidine
 - C) Famotidine
 - D) Nizatidine
14. All of the following statements about antacid are true except:
- A) Weak bases that neutralize gastric pH
 - B) Inhibits the formation of pepsin
 - C) Aluminum antacids cause diarrhea and magnesium antacids cause constipation
 - E) Aluminum antacids cause constipation and magnesium antacids cause diarrhea
15. The following class(es) of drugs are clinically beneficial in bronchial asthma:
- A. Histamine H1 receptor antagonists
 - B. Platelet activating factor (PAF) antagonists
 - C. Leukotriene (cys LT1) receptor antagonists
 - D. All of the above
16. The drug of choice for single dose treatment of onchocerciasis and strongyloidiasis is
- A) Ivermectin
 - B) Diethylcarbamazine

- C) Tetramisole
 - D) Niclosamide
17. All of the following are the rationale of ORS composition except:
- A) It is isotonic
 - B) Glucose facilitates Na⁺ absorption
 - C) Enough K⁺ to replenish losses in loose stool
 - D) All of the above
18. The following laxative lowers blood ammonia level in hepatic encephalopathy:
- A) Bisacodyl
 - B) Liquid paraffin
 - C) Magnesium sulfate
 - D) Lactulose
19. Dextromethorphan is an:
- A. Analgesic
 - B. Antitussive
 - C. Expectorant
 - D. Drug of abuse
 - E. Antihistamine
20. Followings are the indications of Octreotide except:
- A) Secretory diarrhea due to carcinoid tumor
 - B) Diarrhea due to vagotomy
 - C) Diarrhea due to short bowel syndrome
 - D) Acute diarrhea

SECTION B: SHORT ANSWER QUESTIONS (SAQ)

1. Explain the mucoprotective factors that protect the gastric mucosa against acid and explain the role of prostaglandins. (5mks)
2. Provide at least two examples for each of the following; (5mks)
 - a) Components of an anti-hemorrhoid cream
 - b) Leukotriene pathway inhibitors useful in management of asthma.
 - c) Examples of antitussive agents

- d) Adverse effects associated with the use of methylxanthines in the management of asthma.
 - e) Examples of antibiotics with activity against malaria parasites
3. Concerning the management of diarrhea;
- a) Explain the recommended management of diarrhea in infants/children (2mks)
 - b) Give any three side effects of loperamide when prescribed for the management of diarrhea and their basis. (2mks)
4. Concerning laxatives and purgatives;
- a) Differentiate between laxation and purgation and the different circumstances where each is applied. (2mks)
 - b) Lactulose is a commonly used laxative, explain its mode of action and any other indication other than its use as a laxative. (2mks)
 - c) Give an example of a stimulant cathartic. (1mk)
5. Give at least two examples of (5mks)
- a) Proton pump inhibitors
 - b) Mucoprotective agents in the GIT
 - c) Indications of metronidazole
 - d) Toxic effects of suramine
 - e) The agent(s) used in the prevention of malaria in pregnant women in Kenya
6. Concerning antimalarial agents; (5mks)
- a) Give two examples of artemisinin combination therapies used in the treatment of malaria.
 - b) Reason why (rationale for) artemisinin combination therapy provide better cure for malaria
 - c) An antimalarial agent contraindicated in people with psychosis or a history of psychosis (
 - d) An antimalarial agent that should not be used in people with G6PD enzyme deficiency as it may cause acute red blood cell hemolysis
7. Give an appropriate answer for each of the following;

- a) One example of a short acting and one example of a long acting beta agonist in the management of asthma. (2mks)
 - b) Name one agent used to manage trypanosomiasis before CNS infection and two agents used for the same after CNS involvement (3mks)
8. In the management of peptic ulcer disease involves use of various medication, list any five classes of medication used in its management and their respective modes of actions. (5mks)

SECTION C: LONG ANSWER QUESTIONS

(40 MARKS)

- A. Nitroimidazoles are an important class of anti-infective agents an example being metronidazole. This class of agents can be used to treat a wide range of infections;
- a) Give other two agents in this class (2mks)
 - b) List any three dosage forms and routes of administration of metronidazole that are available in clinical practice. (3mks)
 - c) List any five indications of metronidazole (5mks)
 - d) Taking alcohol while on metronidazole results in an unpleasant array of symptoms collectively known as disulfiram like side effects
 - i. Explain the basis of this observation (2mks)
 - ii. List any three other side effects of metronidazole (3mks)
- B. Discuss the classification of agents used to manage acid peptic disorders and for each explain the mode of action (10 marks)
- A. Malaria is a tropical infection caused by plasmodium spp and spread by the female anopheles mosquito. It is a leading cause of mortality in the developing world especially to children under the age of five years and pregnant women;
- i. Quinine is used in management of both complicated and uncomplicated malaria and its main toxicity is cinchonism. Explain the meaning of this term and the symptoms associated with it, as well as other side effects of quinine use. (4mks)
 - ii. Artemisinin combination therapy is what is recommended in the management of malaria in Kenya. Explain the rationale behind this and give any two examples of such a regimen used in Kenya (6mks)
- B. Classify agents used in the management of asthma and for each class explain one adverse effect or precaution during their use (10 marks)

