



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN PHARMACEUTICAL TECHNOLOGY

APM 2313: PHARMACOLOGY AND THERAPEUTICS IV

SUPPLEMENTARY/ SPECIAL EXAMINATION

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Sep 2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **THREE** Section(s). Attempt All questions in section A and B and any two questions in section C.

Circle the correct answer in section A.

Section A

1. The drug acts by competitively blocking NaCl cotransporters in the distal tubule:

- a) Acetazolamide
- b) Furosemide
- c) Hydrochlorothiazide
- d) Spironolactone

2. The drug acts at the proximal tubule:

- a) Loop diuretics
- b) Thiazide diuretics

c) Potassium-sparing diuretics

d) Carbonic anhydrase inhibitors

3. The drug acts in the distal convoluted tubule:

a) Loop diuretics

b) Thiazide diuretics

c) Potassium-sparing diuretics

d) Carbonic anhydrase inhibitors

4. The drug acts in the collecting tubules:

a) Loop diuretics

b) Thiazide diuretics

c) Potassium-sparing diuretics

d) Carbonic anhydrase inhibitors

5. Low-density lipoprotein (LDL) is:

a) A lipoprotein that contains relatively high amounts of cholesterol and is associated with an increased risk of atherosclerosis and coronary artery disease. It is also called beta-lipoprotein

b) A lipoprotein that contains relatively small amounts of cholesterol and triglycerides and is associated with a decreased risk of atherosclerosis and coronary artery disease. It is also called alpha-lipoprotein

c) A lipoprotein containing a very large proportion of lipids to protein and carrying most cholesterol from the liver to the tissues

d) Large lipoprotein particle that is created by the absorptive cells of the small intestine. It transports lipids to adipose tissue where they are broken down by lipoprotein lipase

6. This drug increases lipoprotein lipase (LPL) activity in adipose tissue:

a) Cholestyramine

b) Lovastatin

c) Nicotinic acid

d) Gemfibrozil

7. This drug both inhibits an enzyme and indirectly enhances clearance of low density lipoproteins (LDL):

a) Cholestyramine

b) Lovastatin

c) Nicotinic acid

d) Probucol

8. This drug binds bile acids in the GI tract:

a) Cholestyramine

b) Nicotinic acid

c) Gemfibrozil

d) Probucol

9. This drug may block oxidation of low density lipoproteins (LDL):

a) Lovastatin

b) Nicotinic acid

c) Gemfibrozil

d) Probucol

10. Main contraindications of estrogens' therapy include the following:

a) Estrogen-dependent neoplasmas such as carcinoma of the endometrium or carcinoma of the breast

b) Undiagnosed genital bleeding

c) Liver disease

d) All of the above

11. Tamoxifen is:

- a) Antiprogestin
- b) Antiandrogen
- c) Antiestrogen
- d) Androgen

12. Progesterone is secreted by:

- a) Ovarian follicles
- b) Corpus luteum
- c) Granulosa and theca cells
- d) All of the above

13. The major natural progestin is:

- a) Estradiol
- b) Estron
- c) Progesterone
- d) Estriol

14. Side effect of first-generation histamine H₁ antagonists is:

- a) Aplastic anemia
- b) Vomiting, tinnitus, decreased hearing
- c) Sedation
- d) Gastric ulcers and upper gastrointestinal bleedin

15. Characteristics of beta-blocking agents include all of the following EXCEPT:

- a) They occupy beta receptors and competitively reduce receptor occupancy by catecholamines or other beta agonists

b) They do not cause hypotension in individuals with normal blood pressure

c) They induce depression and depleted stores of catecholamines

d) They can cause blockade in the atrioventricular node

16. Beta-receptor antagonists have all of the following cardiovascular effects EXCEPT:

a) The negative inotropic and chronotropic effects

b) Acute effects of these drugs include a fall in peripheral resistance

c) Vasoconstriction

d) Reduction of the release of renin

17. Pick out the appropriate alimentary route of administration when passage of drugs through liver is minimized:

a) Oral

b) Transdermal

c) Rectal

d) Intraduodenal

18. Which route of drug administration is most likely to lead to the first-pass effect?

a) Sublingual

b) Oral

c) Intravenous

d) Intramuscular

19. What is characteristic of the oral route?

a) Fast onset of effect

b) Absorption depends on GI tract secretion and motor function

c) A drug reaches the blood passing the liver

d) The sterilization of medicinal forms is obligatory

20. Characteristic unwanted reaction which isn't related to a dose or to a pharmacodynamic property of a drug is called:

a) Idiosyncrasy

b) Hypersensitivity

c) Tolerance

d) Teratogenic action

21. The test kits used to diagnose malaria are referred to as

a. RBT'S

b. RDT'S

c. RRT'S

d. RPT'S

22. The vector borne disease caused by plasmodium spp parasites is

a. Malaria

b. Hiv/aids

c. Candidiasis

d. Leishmaniasis

23. Human infection of malaria is initiated when ----- are injected with saliva during a mosquito feeding

a. Merozoites

b. Hypnozoites

c. Sporozoites

d. Trophozoites

24. In ----- , some of the sporozoites do not immediately undergo asexual reproduction but enter a dormant phase
- a. *P. malariae*
 - b. *P. falciparum*
 - c. *P. knowlesi*
 - d. *P. vivax*
25. ----- released from infected liver cells invade erythrocytes
- a. Hypnozoites
 - b. Sporozoites
 - c. Merozoites
 - d. Schizogony
26. The by-product of hemoglobin digestion is
- a. Trophozoites
 - b. Trophic
 - c. Schizogony
 - d. Hemozoin
27. All the following are some of the prodromal symptoms experienced in malaria except
- a. Headache
 - b. Muscle pain
 - c. Joint pain
 - d. Anaemia
28. All the following result in the complication “black water fever” in malaria except
- a. Hemoglobinuria

- b. Massive intravascular hemolysis
 - c. Due to *P.vivax*
 - d. Increased bilirubin
29. Hypoglycemia occurs in malaria if the levels are
- a. <2.2 mmol/l
 - b. <5mmol/l
 - c. <4mmol/l
 - d. <11mmol/l
30. The best drug choice for chemoprophylaxis in a high chloroquine resistant area is
- a. Chloroquine
 - b. Mefloquine
 - c. Proguanil
 - d. Chloroquine + proguanil
31. The replicative stage in plasmodium lifecycle is referred to as
- a. In- erythrocytic schizogony
 - b. Exoerythrocytic schizogony
 - c. Endoerythrocytic schizogony
 - d. Post erythrocytic schizogony
32. The main symptom of diabetes mellitus are all except
- a. Polyuria
 - b. Polydipsia
 - c. Polypnea
 - d. Polyphagia

33. The following are the desired outcomes of diabetes mellitus treatment except
- Relieve symptom
 - Reduce morbidity
 - Improve quality of life
 - Reduce risk of microvascular and macrovascular complications
34. The first generation sulfonyl urea among the following is
- Glimepride
 - Glyburide
 - Tolbutamide
 - Glipizide
35. The biguanide is
- Tolbutamide
 - Repaglinide
 - Rosiglitazone
 - Metformin
36. All the following are the most common opportunistic mycotic infections except
- Candidiasis
 - Cryptococcosis
 - Pneumocystis carinii
 - Leishmaniasis
37. Tinea cruris is a fungal infection of the
- Foot
 - Nails

- c. Groin
 - d. Scalp
38. Leishmania donovani complex includes
- a. L.mexicana
 - b. L .tropica
 - c. L. donovani
 - d. L. major
39. The incidental host of leishmaniasis is
- a. Man
 - b. Jackal
 - c. Rodents
 - d. Dogs
40. Kal- azar is also known as
- a. Muco- cutaneous leishmaniasis
 - b. visceral leishmaniasis
 - c. cutaneous leishmaniasis
 - d. mucosal leishmaniasis

SECTION B ANSWER ALL QUESTIONS (40MARKS)

41. a) Outline the mode of action of combined oral contraceptive
- b) Nancy is on ‘every day pill’ whereby she takes a combined oral contraceptive pill daily. Because of her busy schedule she has just missed two consecutive tablets and has come to your pharmacy for advice. Advise her. (4 marks)

42. Outline any two adverse effects of first generation antihistamines that relate to their effect on the autonomic nervous system (4marks)
43. Outline the mechanism of action of prazosin and two adverse effects (4marks)
44. Explain 2 factors that influence blood pressure in the body and how these factors can be targeted by antihypertensive drugs (4 marks)
45. Outline 4 factors that affect drug metabolism. (4 Marks)
46. 41. List the actions of insulin (4marks)
47. 42. Outline 4 lab tests for diabetes mellitus (4marks)
48. 43. List the signs of leishmaniasis (4marks)
49. 44. Diagrammatically show how cow's milk may bring about type I DM (4marks)
50. 45. Outline at least 4 differences between type I and type II DM (4marks)

SECTION C ANSWER ANY TWO QUESTIONS (40MARKS)

51. Outline 10 roles of the clinical pharmacist (20 Marks)
52. Discuss antimicrobials under the following headings
- a) Classes
 - b) Antimicrobial Resistance
 - c) Empiric therapy 20 Marks
53. a) Classify drugs used in the management of hypertension with an example each. 10 Marks
- b) Explain how rational drug use can be enforced. 10 Marks
54. Discuss treatment of the following
- a) Methanol poisoning
 - b) Kerosene poisoning
 - c) Organophosphate poisoning 20 Marks

