



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** Section(s). Attempt All questions in section A and B and any ONE question in section C.

Circle the correct answer in section A.

Section A

1. The chronic condition characterized by raised blood glucose levels is
 - a. Diabetes insipidus
 - b. Diabetes mellitus
 - c. Malaria
 - d. HIV/AIDS
2. Hormones involved in the regulation of plasma glucose include all the following except
 - a. Insulin
 - b. Glucagon
 - c. Oestrogen
 - d. Growth hormone
3. The hormone that decreases plasma glucose is
 - a. Oestrogen
 - b. Cortisol
 - c. Glucagon
 - d. Insulin
4. The type of diabetes that results from insulin deficiency is

- a. Type II
 - b. Type I
 - c. Secondary DM
 - d. Gestational DM
5. Which of the following statements is true?
- a. Decrease in insulin results in a decrease in glucagon
 - b. Decrease in insulin decreases plasma glucose
 - c. Increase in insulin decreases plasma glucose
 - d. Decrease in insulin increases plasma glucose
6. The insulin action among the following is
- a. Increase glucose uptake by the tissues
 - b. Decrease liver glycogen formation
 - c. Increase glycogen breakdown
 - d. Decrease lipid synthesis
7. The type of diabetes characterized by the presence of both insulin resistance and some degree of insulin deficiency is
- a. Type I
 - b. Type II
 - c. Secondary DM
 - d. Gestational DM
8. During fasting blood glucose test, one is considered diabetic if the levels are
- a. 5.6mmol/l
 - b. 5.6 – 6.9 mmol/l
 - c. 7.0 mmol/l
 - d. 4.9 mmol/l
9. The following are sulfonyl ureas except
- a. Tolbutamide
 - b. Glyburide
 - c. Chlorpropamide
 - d. Nateglinide
10. The biguanide among the following is
- a. Metformin
 - b. Pioglitazone
 - c. Nateglinide
 - d. Tolbutamide
11. The anabolic effects of insulin includes
- a. Glycogen breakdown
 - b. Glycogen synthesis
 - c. Protein breakdown
 - d. Lipolysis
12. The dose of abacavir
- a. 300mg tds
 - b. 600mg bd
 - c. 300mg bd
 - d. 600mg tds
13. The drug that has been phased out due to lipodystrophy is

- a. Abacavir
- b. Didanosine
- c. Stavudine
- d. Zidovudine

14. All the following statements are true regarding antimalarial drugs except

- a) Chloroquine is a 4 amino quinoline
- b) Proguanil is usually used in treatment of malaria involving the CNS
- c) Both amino alcohols and amino quinolines share a similar mechanism of action
- d) Quinine is usually co-administered together with glucose solution

15. The following statement is false about quinine

- a) It is the drug of choice in treatment of uncomplicated malaria
- b) Severe hypoglycemia is a common side effect
- c) Its main metabolite shows antimalarial properties
- d) It is an alkaloid

16. 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

17. The following is not a reason why mycobacterial infections are difficult to treat

- a) Mycobacterial cells are intracellular unlike other bacterial cells
- b) Mycobacterial cells are highly virulent hence have a low propensity for latency
- c) Mycobacterial cells have an unusual cell membrane that is lipid rich
- d) Adherence challenge is usually encountered when using anti mycobacterial agents

18. The following statements regarding chemotherapy of fungal infections is not true

- a) Superficial fungal infections should only be treated topically
- b) Imidazoles and triazoles used in treatment of fungal infections have a similar mechanism of action
- c) Fungal infections are a major problem in HIV/AIDS patients
- d) Nystatin as a chemotherapeutic agent used in treatment of fungal infections is not preferred for systemic fungal infections

19. The following is a nucleotide reverse transcriptase inhibitor

- a) Lamivudine
- b) Nevirapine
- c) Tenofovir

- d) Lopinavir
20. Select the correct statement concerning treatment of protozoal infections
- a) Most antiprotozoal agents are safe to use in pregnancy
 - b) Pyrimethamine is the drug of choice in treatment of leishmaniasis
 - c) Metronidazole is a benzimidazole derivative
 - d) Most agents have high degree of selective toxicity hence have few side effects
21. Quartan fever in malaria is associated with?
- A. Plasmodium ovale
 - B. Plasmodium vivax
 - C. Plasmodium knowlesi
 - D. Plasmodium malariae
22. Non-infectious causes of urinary tract infections include the following except:
- A. Trauma
 - B. Catheterisation
 - C. Neisseria gonorrhoea
 - D. Dehydration
23. The time from when one gets infected to the time symptoms appear is referred to as:
- A. Incubation period
 - B. Infectious period
 - C. Case fatality
 - D. Basic reproduction rate
24. Antiretroviral agents include the following except
- A. Entry inhibitors
 - B. Reverse transcriptase inhibitors
 - C. Integrase inhibitors
 - D. Polyene antibiotics,
25. Which of the following signs and symptoms is associated with severe malaria
- A. Fever
 - B. Loss of appetite
 - C. Diarrhea
 - D. Convulsions
26. Which of the following factors least affects adherence in HIV/AIDS treatment?
- A. Complex dosing schedules
 - B. Cost
 - C. Adverse side effects
 - D. Fixed dose combinations
27. Which of the following drugs is not a first line drug for management of severe pneumonia in in-patients in Kenya
- A. Benzyl penicillin
 - B. Amoxicillin
 - C. Ampicillin
 - D. Ceftriaxone
28. Which of the following presentations is indicative of WHO stage three HIV clinical staging
- A. Oral candidiasis

- B. Extrapulmonary tuberculosis
 - C. Kaposi sarcoma
 - D. Herpes zoster
29. The following drugs are essential in supportive treatment of severe malaria **except**
- A. 5% dextrose
 - B. Quinine
 - C. Scopolamine
 - D. Phenobarbitone
30. Which of the following is a non infectious cause of gastroenteritis?
- A. Gastrinoma
 - B. Pertussis
 - C. Pseudomonas colitis
 - D. Shigellosis
31. The following agents are used in chemoprophylaxis of malaria except
- A. Proguanil
 - B. Mefloquine
 - C. Chloroquine
 - D. Doxycycline
32. Ineffective treatment that doesn't completely clear an infection is referred to as:
- A. Relapse
 - B. Reinfection
 - C. Recrudescence
 - D. Superinfection
33. Widal test is used in the diagnosis of
- A. Amoebiasis
 - B. Typhoid fever
 - C. Giardiasis
 - D. Cholera
34. Inflammation of the parenchyma and lining of renal pelvis of kidneys is referred to as:
- A. Urethritis
 - B. Cystitis
 - C. Pyelonephritis
 - D. Prostatitis

Match the following (6MKS)

A	P.Malariae	Tertian Malaria	
B	Ebola	Muscle Weakness And Inability To Move	
C	Dengue Fever	Quartan Malaria	
D	P.Ovale	Mmr Vaccine	
E	Measles	Hemorrhagic Fever	
F	Polio	Aedes Aegypti Mosquito	

Section B

41. Outline the mechanism of action of Isoniazid and amoxicilin. 4 Marks
42. Explain briefly the rationale of combining rifampicin and isoniazid. 4 Marks
43. List 2 examples of mucolytics and 2 examples of antitussive agents. 4 Marks
44. Outline 2 adverse effects of abacavir. 4 Marks
45. Explain how insulin regulates blood sugar. 4 Marks
46. Explain the following;
- A baby born to HIV mother will test positive at birth upon use of rapid diagnostic tests for HIV and turn negative 18 months later (3 marks)
 - Three beneficial effects of antiretroviral therapy (ART) (3 marks)
47. Recent public health reports in Kenya have indicated a rise in cholera cases. Explain the following with regards to cholera;
- Aetiology (2 marks)
 - Mode of transmission (1 mark)
 - Medical management (3 marks)
48. Outline five signs and symptoms of dehydration. (5mks)
49. Briefly discuss dengue fever under the following topics
- Cause (1mk)
 - Signs and symptoms(2mks)

Section C

50. a) Outline 5 hormonal drugs and their uses. 10 Marks

b) Describe the pharmacologic management of asthma using at least 3 classes of drugs. 10 Marks

51. Discuss HIV treatment under the following headings 20 Marks

a) Goals of treatment

b) Classes of ARVs

c) Adverse effects of ARVs

d) Contraindications of ARVs

52. Recent reports have indicated increased cases of ebola disease in the congo

Discuss the disease under the following headings. 20 Marks

i. Aetiology

ii. Pathophysiology

iii. Signs and symptoms

iv. management