



TECHNICAL UNIVERSITY OF MOMBASA
FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

BMLS

AML 4212: CLINICAL CHEMISTRY II.

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

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 Choose Nochoose Sect/Quest. Attempt Choose instruction.

Circle the correct answer in section A.

Section A

1. Essential amino acids include the following except?
 - A. Leucine
 - B. Isoleucine
 - C. Valine
 - D. Phenylalamine
 - E. Proline
2. Which of the following is an alpha keto acid
 - A. Alanine
 - B. Oxaloacetate
 - C. Glutamate
 - D. Aspartate
 - E. Phenylalamine

3. When lipoprotein electrophoresis is done which fraction migrates the slowest to the anode
 - A. Chylomicron
 - B. LDL
 - C. VLDL
 - D. HDL
 - E. IDL

4. Which one of the following is an inborn error of metabolism
 - A. Tyrosinemia
 - B. Lung cancer
 - C. Typhoid
 - D. Diabetes
 - E. None of the above

5. The following are factors associated with increased risk for cardiovascular diseases except?
 - A. Elevated levels of LDL
 - B. Being female
 - C. Obesity
 - D. High blood pressure
 - E. Cigarette smoking

6. The following are interfering substances in cholesterol analysis except?
 - A. Ascorbic acid
 - B. Bilirubin
 - C. Triglycerides
 - D. Hemolysis
 - E. None of the above

7. Dietary triglycerides are transported by
 - A. Chylomicron
 - B. LDL
 - C. VLDL
 - D. HDL
 - E. IDL

8. Which of the following properties will a protein have at its isoelectric point?
 - A. Net negative charge
 - B. Net positive charge
 - C. Net zero charge
 - D. Mobility at pH 7.0
 - E. Ability to store genetic information

9. Triglycerides from the liver are transported by
 - A. Chylomicrons
 - B. LDL
 - C. VLDL
 - D. HDL

E. IDL

10. Which one of the following is true of primary amino aciduria?
- A. It occurs to infection of the liver
 - B. It occurs due to generalized renal tubular
 - C. It occurs due to protein energy malnutrition
 - D. It occurs due to inherited enzyme defect
 - E. None of the above
11. Acute phase proteins include the following except?
- A. α 1-antitrypsin
 - B. C reactive protein
 - C. Fibrinogen
 - D. Haptoglobin
 - E. Gamma globin
12. The very low density lipoprotein primarily transport what substance?
- A. Cholesterol
 - B. Chylomicrons
 - C. Triglycerides
 - D. Phospholipids
 - E. Bile acids
13. What substance are bile acids derived from?
- A. Bilirubin
 - B. Fatty acids
 - C. Cholesterol
 - D. Triglycerides
 - E. HCL
14. Bence Jones proteinuria is a condition characterized by the urinary excretion of what protein?
- A. Kappa heavy protein
 - B. Lambda heavy protein
 - C. Kappa light protein
 - D. Delta light protein
 - E. Omega light chain
15. The very low density lipoprotein primary transport what substance?
- A. Cholesterol
 - B. Chylomicrons
 - C. Triglycerides
 - D. Phospholipids
 - E. Bile acid

16. Bad lipoproteins refers to
- HDL
 - LDL
 - VLDL
 - Cholesterol
 - IDL
17. Secondary amino aciduria may be due to the following except
- Disease of the liver
 - Generalized renal tubular dysfunction
 - Protein energy malnutrition
 - Inborn error of metabolism
 - None of the above
18. Which of the following enzymes is produced by heart tissue
- Alanine transaminase
 - Aspartate transaminase
 - Alkaline phosphatase
 - Phenylalanine hydroxylase
 - None of the above
19. The following include conjugated proteins except?
- Metalloproteins
 - Lipoproteins
 - Glycoproteins
 - Apoproteins
 - Phosphoproteins
20. The following shows the Friedewald estimation
- $TC = VLDL - C + HDL - C + IDL - C$
 - $VLDL - C = TC + HDL - C + LDL - C$
 - $LDL - C = VLDL - C + HDL - C + TC$
 - $TC = VLDL - C + HDL - C + LDL - C$
 - $HDL - C = VLDL + TC + TC + LDL - C$
21. Which of the following tests can be used to determine presence of phenylalanine
- Berthelot reaction
 - Ictostix
 - Erchlich test
 - Hay's test
 - Guthrie test
22. Which of the following is true
- Absence of phenylalanine hydroxylase prevents formation of phenylalanine
 - Absence of phenylalanine hydroxylase results to formation of tyrosine
 - Phenylalanine hydroxylase is required for formation of tyrosine
 - Phenylalanine hydroxylase is required for formation of alanine

- E. None of the above
23. Total plasma protein maybe increase by
- A. Diarrhea
 - B. Excessive intake of water
 - C. Excessive intravenous fluid infusion
 - D. Nephrotic syndrome
 - E. Increased pulse rate
24. Non-essential amino acids include following
- A. Histidine
 - B. Leucine
 - C. Isoleucine
 - D. Valine
 - E. Phenylalanine
25. Which of the following are examples of endocrine glands
- A. Sweat glands
 - B. Salivary glands
 - C. Skin
 - D. Thyroid
 - E. Brain
26. Which of the following are examples of exocrine glands
- A. Adrenal gland
 - B. Salivary gland
 - C. Pituitary gland
 - D. Hypothalamus
 - E. Testes
27. The property that can be used to fractionate proteins include
- A. Their peptide linkage
 - B. Their ability to dissolve
 - C. The length of the hydrocarbon chain
 - D. The branches in carbon skeleton
 - E. None of the above
28. What condition is characterized by yellow pigmentation of the skin
- A. Jaundice
 - B. Hemolysis
 - C. Cholestasis
 - D. Kernicterus
 - E. Ischemia
29. The presence of protein in urine
- A. Can increase SG
 - B. Can reduce SG
 - C. Can cause diarrhea
 - D. Can be detected by Hay's Test

E. Cannot be detected

30. The following are functions of plasma proteins except
- A. Blood coagulation
 - B. Maintenance of homeostasis
 - C. Defense against infection
 - D. Transport of drugs
 - E. None of the above

Section B

31.

(A) Describe the Guthrie test. **(10marks)**

(B) Describe the process of atherosclerotic plaque formation. **(10marks)**

32.

(A) Describe two male and three female hormonal infertile conditions. **(10marks)**

(B) Describe five parameters that are used as markers of liver function. **(10marks)**