



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BMLS 15S**

**AML 4212: CLINICAL CHEMISTRY II**

**END OF SEMESTER EXAMINATION**

**SERIES: DECEMBER 2016**

**TIME: 2 HOURS**

**DATE: Pick Date Dec 2016**

## Instructions to Candidates

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **TWO** Section(s). Attempt **ALL** questions.

**Circle the correct answer in section A.**

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## Section A

1. Which of the following terms describes decreased blood flow to the heart?
  - a. Ischemia
  - b. Jaundice
  - c. Thrombosis
  - d. Acidosis
  - e. Myocardial infarction
2. Which of the following isomers of creatinine kinase is found mostly in the skeletal muscles?
  - a. CK-MM
  - b. CK-MB
  - c. CK-BB
  - d. CK-TM
  - e. CK-MI

3. Which one of the following is true of the biological function of the enzyme creatinine kinase?
  - a. Involved in the synthesis of skeletal muscles
  - b. Involved in the activation of creatine
  - c. Involved in the synthesis of ATP
  - d. Involved in the activation of skeletal muscles
  - e. Involved in the transfer of creatinine from the skeletal muscles
4. Which one of the following proteins are components of lipoproteins?
  - a. Hexokinase
  - b. Troponins
  - c. Apolipoproteins
  - d. Myosin
  - e. All of the above
5. Reverse-cholesterol transport is mediated by which one of the following lipoproteins?
  - a. Chylomicrons
  - b. VLDL
  - c. LDL
  - d. HDL
  - e. IDL
6. Which of the following is true of primary aminoaciduria?
  - a. Due to liver disease
  - b. Due to generalized renal tubular dysfunction
  - c. Due to protein-energy malnutrition
  - d. Due to an inherited enzyme defect
  - e. All of the above
7. Which one of the following is an example of an inborn error of metabolism?
  - a. Jaundice
  - b. Sickle cell anaemia
  - c. Alkaptonuria
  - d. Diabetes mellitus
  - e. none of the above
8. Which one of the following statements is true of phenylketonuria?
  - a. The phenylketonuria block results to accumulation of tyrosine
  - b. The phenylketonuria block results to accumulation of phenylalanine
  - c. The phenylketonuria block results to accumulation of phenylalanine hydroxylase
  - d. Phenylalanine hydroxylase is required for conversion of tyrosine to phenylalanine
  - e. All of the above

9. Which phase of hyperbilirubinaemia is characterized by increased hemolysis
- Prehepatic hyperbilirubinaemia
  - Hepatic hyperbilirubinaemia
  - Posthepatic hyperbilirubinaemia
  - Non liver hyperbilirubinaemia
  - All of the above
10. The plasma levels of the liver enzyme \_\_\_\_\_ will rise due to large bile duct obstruction
- Alanine transaminase
  - Aspartate transaminase
  - Alkaline phosphatase
  - Hexokinase
  - Lipase
11. The following include conjugated proteins except?
- Metalloproteins
  - Lipoproteins,
  - Glycoproteins
  - Apoprotein
  - Phosphoproteins
12. Albumin is able to regulating the flow of water between the plasma and tissue fluid by
- Its effect on plasma oncotic pressure
  - Its effect on plasma hydrostatic pressure
  - Its effect on sodium potassium pump
  - Its effect on active transport
  - None of the above
13. The chief constituents of gastric juice include \_\_\_\_\_
- HCL
  - Pepsinogen
  - Alkaline mucus
  - Saliva
  - Intrinsic factor
14. Total plasma protein may be increased by the following
- Jaundice
  - Fevers
  - Excessive intravenous fluid infusion
  - Nephrotic syndrome
  - Increased pulse rate

15. Which of the following substances is the substrate for the enzyme uridyl diphosphate glucuronyltransferase
- Urea
  - Uridine
  - Glucuronic acid
  - Phosphate
  - Glucose
16. The following are factors associated with cardiovascular diseases except?
- Being overweight
  - Physical inactivity
  - Diabetes mellitus
  - Being post-menopausal female
  - High HDL level
17. Acute phase proteins include the following except
- Albumin
  - C3 component of complement
  - transferrin
  - C-reactive protein
  - IgM
18. Essential amino acids include the following except
- Leucine
  - Isoleucine
  - Valine
  - Phenylalanine
  - Proline
19. Analysis of gastric resting content involves the assessment of the following except:
- Colour
  - Consistency
  - Volume
  - Blood
  - Bilirubin
20. The normal range for potassium in blood is
- 135-145 mmol/l
  - 3.8 – 5.0 mmol/l
  - 6.8 – 10.0 mmol/l
  - 5.0– 6.8 mmol/l
  - 2.0 – 4.0 mmol/l

21. The very low density lipoprotein primarily transports what substance?
- Cholesterol
  - Chylomicrons
  - Triglycerides
  - Phospholipids
  - Bile acids
22. Which is the most abundant protein in plasma?
- transferrin
  - fibrinogen
  - Haptoglobin
  - Ceruloplasmin
  - Albumin
23. What substances are bile acids derived from ?
- Bilirubin
  - Fatty acids
  - Cholesterol
  - Triglycerides
  - HCL
24. Which of the following tests would be included in a routine lipid profile?
- Triglycerides, fatty acids, chylomicrons
  - Cholesterol, triglycerides, phospholipids
  - HDL cholesterol, LDL cholesterol, chylomicrons
  - Cholesterol, triglycerides, HDL cholesterol
  - Glucose, Albumin
25. Exogenous triglycerides are transported in plasma in what form?
- Phospholipids
  - Cholesteryl esters
  - Chylomicrons
  - Free fatty acids
  - Carbohydrates
26. Proteins migrate during electrophoresis because they \_\_\_\_\_
- have peptide bonds
  - have an electric charge
  - contain nitrogen
  - are organic compounds
  - are inorganic

27. Bilirubin couples with diazotized sulphanilic acid yielding the following
- A purple color
  - Azobilirubin
  - Biliverdin
  - A green color
  - Haemoglobin
28. The Beta-lipoprotein fraction consists primarily of which lipid?
- Fatty acids
  - Cholesterol
  - Phospholipids
  - Triglycerides
  - DNA
29. What substance is the precursor to all steroid hormones?
- Fatty acids
  - glycerol
  - Triglycerides
  - Cholesterol
  - Glucose
30. The abnormal accumulation of fats in faeces is termed as?
- Amenorrhoea
  - Liporrhoea
  - Steatorrhoea
  - diarrhoea
  - None of the above

## Section B

31. Describe the following
- Describe the process of atherosclerotic plaque formation (10 marks)
  - Describe the clinical conditions associated with decreased albumin levels (10 marks)
32. Discuss the following
- The analysis of gastric resting content as a gastric function test (10 marks)
  - ALT and AST as markers of liver function (10 marks)