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(University of Choice)

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

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
(MAIN)**

**2018/2019 ACADEMIC YEAR**

**FIRST YEAR, SECOND TRIMESTER**

**FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN HEALTH PROFESSIONS EDUCATION**

**COURSE CODE: BIOC 112**

**COURSE TITLE: MEDICAL BIOCHEMISTRY II**

**DATE:**

**TIME:**

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**INSTRUCTIONS TO CANDIDATES**

**Answer all questions in this paper.**

**TIME: 3 Hours**

*moderated  
7/5/2019  
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**Section A (Multiple Choice Questions – each 1 mark)**

1. Which one of the following is normally excreted by the kidney?
  - A. Creatinine
  - B. Inulin
  - C. Bicarbonates
  - D. Cholesterol
2. Fructose intolerance is characterized by the following except?
  - A. Hypoglycaemia
  - B. Profuse sweating
  - C. Aldolase B deficiency
  - D. Hypoinsulinaemia
3. The following are true about phenylketonuria except?
  - A. It results from the absence of phenylalanine hydroxylase.
  - B. It causes the accumulation of phenylpyruvic acid in the blood.
  - C. It causes the accumulation of phenyllactic acid in the cerebrospinal fluid
  - D. It causes the accumulation of tyrosine in the blood
4. The following are true about galactosemia except?
  - A. It can cause liver damage
  - B. It can cause kidney failure
  - C. It can be controlled by restricting galactose from the diet
  - D. It is not affected by lactose.
5. Albinism is characterized by the following except?
  - A. Lack of enzyme tyrosinase
  - B. Lack of melanin pigment
  - C. Lack of tyrosine
  - D. Brown hairs and eyes
6. Which one of the following is true about blood group O?
  - A. They contain antigens A & B on their RBC surfaces
  - B. They are universal recipients
  - C. Bearers may result from parents with blood group A
  - D. They cannot donate blood to group AB
7. The following are true about prolonged 'Prothrombin time' except?
  - A. Parenchymal damage
  - B. Vitamin K deficiency
  - C. Inadequate coagulation factors
  - D. Hyperalbuminemia
8. Under what circumstances would it be necessary to establish the blood group of the father?
  - A. When the wife is Rh<sub>-</sub>
  - B. When paternity is disputed
  - C. When the wife is Rh<sub>+</sub>
  - D. When the wife has blood group O
9. Parents with blood groups AB are likely to have offspring with blood group AB in the ratio of?
  - A. 1:4
  - B. 1:2
  - C. 1:1
  - D. 1:3
10. Which one of the following best describes Van den Berg Reaction?
  - A. It is useful for detecting and estimating bilirubin in serum
  - B. It is based on the presence of conjugated bilirubin in the serum
  - C. It is based on the presence of unconjugated bilirubin in the serum
  - D. It is a functional test for the liver

11. The presence of excess level of conjugated bilirubin in the serum is an indication of?
  - A. Hemolytic jaundice
  - B. Obstructive jaundice
  - C. Hepatic jaundice
  - D. Biphasic jaundice
12. Which one of the following is more sensitive in the assessment of renal glomerular function?
  - A. Creatinine
  - B. Urea
  - C. SGOT
  - D. Alkaline phosphatase
13. Excess levels of TSH in the plasma is an indication of?
  - A. Autoimmune disorder
  - B. Presence of Grave's disease
  - C. Hypothyroidism
  - D. Hyperthyroidism
14. The following are true about the disorders of the urea cycle except?
  - A. It is an inherited disorder of metabolism
  - B. The diet should provide mostly carbohydrates
  - C. Involves mostly improper use of amino acids
  - D. The diet should consist mostly of fruits, grains and vegetables
15. Which one of the following is an inborn error of sugar metabolism?
  - A. Galactosemia
  - B. Alkaptonuria
  - C. Uraemia
  - D. A and C
16. Which one of the following is the major component of the 'element variable' form of adipose tissue?
  - A. Phospholipids
  - B. Triacylglycerol
  - C. Palmitic Acid
  - D. Cholesterol
17. Which one of the following tests assesses renal tubal function?
  - A. Inulin clearance test
  - B. Urine acidification test
  - C. Creatinine clearance test
  - D. Bromosulphthalein test
18. The following are true about radioactive emissions except?
  - A. Can be used in sterilization of surgical accessories
  - B. Can be used in partial destruction of over-active thyroids
  - C. Can be used in the irradiation of tumors
  - D. None of the above
19. An increase in serum creatinine may be due to the following except?
  - A. Fall in GFR
  - B. Decrease in renal perfusion
  - C. Loss of functional nephrons
  - D. Decrease in tubular pressure
20. The following are true about ultrasonic scanning of the thyroid except?
  - A. It reveals the distribution of radioactive iodine in the gland
  - B. It can identify cystic from solid nodules
  - C. It is invasive and has injurious effects
  - D. It reveals the anatomical features of the gland.

**Section B (Short Answer Questions – each 5 marks)**

1. Describe bromosulphthalein test and its significance.
2. Explain the significance of Van den Bergh reaction in liver function test.
3. Compare the suitability of creatinine and urea in the assessment of renal function.
4. Describe the significance of the following organ function tests:
  - a) Hippuric acid test (2.5 marks)
  - b) Fouchet's test (2.5 marks)
5. Briefly describe erythroblastosis fetalis and its prevention.
6. Describe the test for distal nephron function.
7. Explain the mechanism for the characteristic hypoglycaemia in galactosaemias.
8. Compare the significance of alkaline phosphatase and 5 prime nucleotidase in assessing liver function.

**Section C (Essay Questions – each 20 marks)**

1. Describe the various tests for the excretory functions of the liver.
2. Describe the various inborn errors of amino metabolism.