Medical Biochemistry Exam 3

INSTRUCTIONS
Answer all questions in this paper
Time: 3 Hours

Section A (Multiple choice Questions – each 1 mark)
1.The following are true about human blood group “O” except?
A. They contain antibodies a and b.
B. They contain antigens A and B.
C. They can donate blood to group AB.
D. May result from parents with blood group A.

2. Excess levels of TSH in the plasma is an indication of?

A . Autoimmune disorder
B . Presence of Grave’s disease
C . Hypothyroidism
D . Hyperthyroidism

3.The following statements are true about inborn errors of metabolism except?
A. May be caused by the altered activity of essential enzymes or enzyme cofactors.
B. Usually present in infancy or childhood.
C. Result from alteration in a single gene.
D. Mostly involve X- linked recessive inheritance.

4. Parents with blood groups A and B 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

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.Increased bile level in stool would occur in?
A. Hemolytic jaundice.
B. Complete biliary obstruction.
C. Infectious hepatitis.
D. Oral antibiotic therapy.

7.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

8.Abnormalities of bile pigment metabolism can be demonstrated by the following except?
A. Hyperbilirubinaemia
B. Increased urine urobilinogen
C. Decreased faecal urobilinogen
D. Decreased urine bile salts

9.Which one of the following is true about hyperthyroidism?
A. It is characterized by low serum cholesterol.
B. It is characterized by reduced synthesis of cholesterol.
C. It is characterized by increased serum aspartate amino transferase.
D. It is characterized by increased lactate dehydrogenase.

10.The following are true about phenylketonuria except?
A. The body cannot use phenylalanine normally.
B. It can cause eczema.
C. It responds to nutritional therapy.
D. Treatment ensures complete removal of phenylalanine from the blood.

11.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.

12.Jaundice of the newborn can be demonstrated by?
A. 10 – 20 mg of bilirubin/100 ml of blood
B. 20 - 30 mg of bilirubin/100 ml of blood
C. 30 – 40 mg of bilirubin/100 ml of blood
D. More than 40 mg/ 100 ml of blood

13.The following cause an increased serum level of an enzyme except?
A. Necrosis of cells.
B. Increased permeability of cell membrane.
C. Increased cellular production.
D. Lack of cofactors.

14.The following are true about alkaptonuria except?
A. It is characterized by excess homogentisic acid in the blood.
B. It is characterized by accumulation of acetoacetic acid in the blood.
C. It is characterized by lack of homogentisic acid oxidase.
D. It is characterized by black urine.

15.Which one of the following is true about direct positive Van den Bergh reaction?
A. Presence of conjugated bilirubin
B. Presence of unconjugated bilirubin
C. Presence of both unconjugated and conjugated bilirubin

D. Formation of purple colour within 2-3 minutes

16.Which one of the following factors determines Beer's law?
A. Solute concentration.
B. Thickness of medium.
C. Temperature of the medium.
D. Amount of incident light.

17.Which one of the following is an inborn error of sugar metabolism?
A. Galactosemia.
B. Alkaptonuria.
C. Uraemia.
D. A and C.

18.A damaged liver may be associated with the following except?
A. Increased plasma glucose.
B. Increased fructose in the plasma.
C. Reduced glycogenesis
D. Reduced galactose in the plasma.

19.The following statements are true about serum transaminases SGOT and SGPT except?
A. They increase in liver disease.
B. They are found in most tissues.
C. Both are found in the liver in equal amounts.
D. They are useful as screening tests in outbreaks of infectious hepatitis.

20. . Which one of the following is more sensitive in the assessment of renal glomerular function?

A . Creatinine
B . Urea
C . SGOT
D. Alkaline phosphatase

Section B (Short Answer Questions – each 5 marks)
1.Explain the significance of alkaline phosphatase in liver function test.
2. Describe the clinical features of galactosaemia.
3. Describe the MNS blood group.
4.An intramuscular dose of anti-Rh antibody to an Rh- mother soon after birth prevents Rh –caused disease in future births. Explain the mechanism.
5. Explain the use of ELISA in thyroid function test.
6. Outline the salient features of inborn errors of metabolism.
7. Enumerate the various blood substances normally measured in renal function tests
8. Briefly describe the principle and significance of radioimmunossay in clinical diagnosis.

Section C (Essay Questions – each 20 marks)
1.Descibe the classification of human blood grouping.
2.Describe the functional test for renal glomerulus.