

## Medical Biochemistry Exam 5

Section A (Multiple choice Questions – each 1 mark)

1. Which one of the following tests assesses renal tubular function?

- A . Inulin clearance test
- B . Urine acidification test
- C . Creatinine clearance test
- D . Bromosulphthalein test

2. 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

3. 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

4. The following statements are true about inborn errors of metabolism except?

- A. They may be caused by the altered activity of essential enzymes or enzyme cofactors
- B .They usually present in infancy or childhood
- C. They result from alteration in a single gene
- D.They mostly involve X-linked recessive inheritance

5. The following statements are true about blood transfusions except?

- A. An Rh- person can donate blood to an Rh+ individual without bad consequences
- B. An Rh- person can receive blood from an Rh+ individual without bad consequences
- C. Rh incompatibility is lethal mostly in subsequent transfusions
- D. A & C

6. . Under what circumstances would it be necessary to establish the blood group of an expectant father?

- A . When the wife is Rh-
- B . When paternity is disputed
- C . When the wife is Rh+
- D . When the wife has blood group O.

7. The following statements are true about galactosemia except?

- A. It is a disorder of carbohydrate metabolism
- B. It can cause liver damage
- C. It can cause ovarian failure
- D. It can be controlled by taking cow milk

8. 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

9. A damaged liver may be associated with the following conditions except?

- A. Increased plasma glucose
- B. Increased plasma fructose
- C. Reduced glycogenesis
- D. Reduced plasma galactose

10. Which one of the following is true about hyperthyroidism?

- A. Characterized by low serum cholesterol
- B. Characterized by reduced synthesis of cholesterol
- C. Characterized by increased serum aspartate aminotransferase
- D. Characterized by increased lactate dehydrogenase

11. Decreased values of urobilinogen in stool may be an indication of the following except?

- A. Complete biliary obstruction
- B. Oral antibiotic therapy
- C. Severe liver disease
- D. Hemolytic anemias

12. Which one of the following best describes 'substance clearance' from the blood/plasma?

- A. The volume of blood/plasma which contains the amount of the substance, excreted in the urine per minute
- B. The volume of urine which contains the amount of the substance excreted per minute
- C. The amount of the substance excreted in urine per minute
- D. The amount of the substance cleared from blood/plasma per minute

13. Increased bile level in stool would occur in?

- A. Hemolytic jaundice
- B. Complete biliary obstruction
- C. Infectious hepatitis
- D. Oral antibiotic therapy

14. 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.

15. 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

16. Which one of the following factors determines Beer's law?

- A. Solute concentration
- B. Medium thickness
- C. Temperature of the medium
- D. Amount of incident light

17. 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.

18. 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.

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. Decreased tubular pressure

20. Which one of the following best explains the significance of determining the blood group of an expectant mother?

- A. To establish the Rh compatibility of the mother and the fetus.
- B. To establish the ABO blood group of the mother.
- C. To establish the probable blood donor.
- D. To establish the probable blood group of the father.

Section B (Short Answer Questions – each 5 marks)

1. Describe the principle and significance of Bromosulphthalein excretion test.
2. Describe the clinical features of galactosaemia.
3. Explain the mechanism for the treatment/prevention of erythroblastosis fetalis in subsequent births.
4. Explain the relationship between phenylketonuria and alkaptonuria.

5. Explain the implications of the following in thyroid function test:
  - a. Excess levels of TSH in the plasma.
  - b. Presence of anti-TSH receptors in the plasma.
6. Describe the principle and significance of radioimmunoassay in clinical diagnosis.
7. Explain the significance of bilirubin as an indicator of liver functional efficiency.
8. Describe the salient features of inborn errors of metabolism.

Section C (Essay Questions – each 20 marks)

1. Describe the various glycogen storage diseases.
2. Describe the metabolic and detoxification functions of the liver.