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Subject: chemical pathology Instructor: Adnan Ahmed

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SECTION (A)

1. Two students of MLT are talking about the use of cholesterol in food one says its good to have cholesterols in food the other said use of more cholesterol is not good for our health, they both asked from his class teacher and he replied "having high triglyceride levels in your blood can make you more likely to have _____
   A. Arthritis
   B. Feet infections
   C. Heart disease
   D. Beri Beri

2. Focal segmental glomerulosclerosis is a disease that scars the_____
   A. Bowman's capsule
   B. Glomeruli
   C. Pancreases
   D. Liver

3. Minimal change disease **"MCD"** is the most common cause of nephrotic syndrome in_____
   A. Women
   B. Men
   C. Children
   D. Aged

4. The main signs or symptoms make up nephrotic syndrome is/are_____
   A. Proteinuria
   B. Hyperlipidemia

C. Hypoalbuminemia
D. <u>All of the above</u>

5. To diagnose a patient nephrotic syndrome, you should go for?
   A. <u>Urine Test</u>
   B. Blood Test
   C. Biopsy
   D. All of the above

6. Your class teacher gives you a history of patient such that a patient having yellow skin and body fluid that is the by-product of RBCs breakdown, Red blood cells typically survive for about 120 days before the body breaks them down, an increased breakdown of RBCs made the skin and body fluids colour yellow, this is due to_____
   A. <u>Bilirubin</u>
   B. Cytokines
   C. Alpha blockers
   D. Side effects of NSAIDs

7. New-borns with jaundice are carefully monitored and generally improve within _____hours.
   A. 04 to 07
   B. 10 to 12
   C. 12 to 24
   D. <u>48 to 72</u>

8. All are true regarding Bilirubin Test Except?
   A. Is used to detect an increased level in the blood
   B. Determine the cause of jaundice
   C. Cannot diagnose blockage of the bile ducts.
   D. <u>Help diagnose conditions</u>

9. A patient of malabsorption syndrome is admitted in LRH ward and you have to test the condition, of all the possible diagnostics test the most reliable test of malabsorption is_____
   A. Stool test
   B. Blood test
   C. <u>Berth test</u>
   D. Imaging

10. The Urine Albumin to Creatinine Ratio (UACR) is a test that estimates how much albumin is excreted in a _____period without requiring patients to collect urine for a whole day.
    A. 12-hour
    B. <u>24-hour</u>
    C. 48-hour
    D. 72-hour

11. Which option are not **true** about kidney functions?
    A. Filter waste materials and toxin from the blood
    B. Production of vitamin E
    C. <u>Red Blood Cells (Erythropoietin) formation</u>
    D. Synthesize hormones that regulate blood pressure

12. Structural and Functional unit of the kidney is?
    A. Renal corpuscle
    B. Renal tubule
    C. <u>Nephron</u>
    D. All of the above

13. Normally: The pH of urine
    A. <u>acidic</u>
    B. alkaline
    C. varies from acidic to alkaline
    D. varies from alkaline to acidic

14. Uric acid is the end product of ……. catabolism.
    A. Thymine
    B. Pyramidin
    C. Purine
    D. <u>Urea</u>

15. ……..is known as the good cholesterol.

    A. <u>HDL</u>
    B. LDL
    C. VLLDL
    D. Triglycerides

<u>SECTION (B)</u>

Question no1: What do you know about proteinuria?

Ans:

Proteinuria:

- The presence of abnormal quantities of protein in the urine, which may indicate damage to the kidney.
- Normal urinary protein excretion less than 150mg/24 hours
- 40% -tamm-horsfall protein secreted by thick ascending limb of the loop of henle
- 40%-low molecular weight immunoglobulin (IgA), urokinase, peptide hormones
- 20%-Albumin
- Normal albumin excretion less than 30mg/24hors

There are three types of proteinuria:

- **Transient:**
  Fever, stress, dehydration, exercise.
- **Orthostatic proteinuria:**
  Excess urine protein in upright position but normal during recumbency, school age, less than 1mg/m2/day
- **Persistent proteinuria:**
  Proteinuria of greater than 1 by dipstick in multiple occasion

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Question no2: Explain Ketonuria and phenylketonuria in detail.

Ans:

Ketonuria:

Ketonuria is a medical condition characterized by ketones in the urine. Ketones are metabolic end-products of fatty acid metabolism. In healthy individuals, ketones are formed in the liver and are completely metabolized so that only negligible amounts appear in the urine. However, when carbohydrates are unavailable or unable to be used as an energy source, fat becomes the predominant body fuel instead of carbohydrates and excessive amounts of ketones are formed as a metabolic by product. Higher levels

of ketones in the urine indicate that the body is using fat as the major source of energy.

Causes of ketonuria:

- Fever
- Anorexia
- Starvation
- Prolonged vomiting

Symptoms of ketonuria:

- Weight loss
- Fatigue
- Nausea
- Glycosuria

Phenylketonuria:

- Autosomal recessive metabolic genetic disorder
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- Mutation in the gene for phenylalanine hydroxylase (PAH).
- When PAH activity is reduced, phenylalanine accumulates and is converted into phenylpyruvate (phenylketone), which can be detected in the urine.
- Untreated PKU can lead to intellectual disability, seizures, and other serious medical problems.
- Patients who are diagnosed early and maintain a strict diet can have a normal life span with normal mental development.
- PKU is rare – it is estimated to affect 1 in every 10,000 babies.

Causes of phenylketonuria:

- Autosomal recessive disorder caused by mutation in PAH gene
- Located on 12^{th} chromosome.
- A carrier does not have symptoms of the disease, but can pass on the defective gene to his or her children.

Symptoms of phenylketonuria:

- Learning disabilities

- Mental retardation
- Epilepsy
- Hyperactivity
- Behavioral issues

Question no3: Enlist all the possible cause of Cushing syndrome.

Ans:

Causes of Cushing's syndrome:

- **ACTH dependent Cushing syndrome:**
  - Cushing disease or ACTH secreting pituitary adenoma
  - Atopic ACTH secretion
- **ACTH independent Cushing syndrome:**
  - Adrenal adenoma
  - Adrenal carcinoma
  - Bilateral adrenal hyperplasia
  - Iatrogenic Cushing syndrome (Exogenous glucocorticoid exposure)
- **Pseudo-Cushing syndrome:**
  - Obesity
  - Alcoholism
  - Depression.

THE END