**Task 1.** Solve the tests. Please note that the number of correct answers may be more than one. Mark the correct answer using **bold text selection.**

1. Functions of protein are:

1. Energy
2. Contractile
3. Nutrition
4. Storage
5. Transport
6. Protection
7. Enzyme

2. Nitrogen balance may be:

1. Physiological
2. Positive
3. Negative
4. Pathological
5. Synthetic

3. The final products of the dеsintegration of amino acids are:

1. Urea
2. Glucose
3. Cholesterol
4. Ammonia
5. Glycerol
6. Glycogen
7. CO2 and H2O

4. The increase in the blood of uric acid is

1. Hyperketonemia
2. Hyperuricemia
3. Hyperproteinemia
4. Hyperlipidemia
5. Hyperlactatemia

5. The causes of negative nitrogen balance are:

1. Pregnancy
2. Starvation
3. Growth of body
4. Infectious diseases
5. Proteinuria
6. Burns

6. Disorders of plasma protein composition include:

1. Hyperproteinemia
2. Hypercholesterolemia
3. Hyperglycemia
4. Hypoproteinemia
5. Hypoglycemia
6. Dysproteinemia
7. Paraproteinemia

7. The place of urea synthesis in the body is:

1. Blood
2. Lung
3. Liver
4. Kidney
5. Adrenal glands

8. Metabolic disorder, which develops due to metabolic disturbances of purine bases, is

1. Phenylketonuria
2. Gout
3. Multiple Myeloma
4. Cystic fibrosis
5. Waldenstrom macroglobulinemia

9. The appearance of abnormal forms of proteins in blood is called

1. Hyperuricemia
2. Dysproteinemia
3. Paraproteinemia
4. Hyperproteinemia
5. Hyperketonemia

10. Determine which factors are the reasons and risk factors of goat?

1. High-purine foods
2. Disorder synthesis of urea
3. Chronic kidney disease
4. Genetic predisposition
5. Overeating of carbohydrates
6. Offered infectious diseases

**Task 2. Solve a cross-word puzzle**

***Across:***

1 – The toxic substance of the amino acids metabolism

***Down:***

2 – The specific term that describes status on nitrogen metabolism in human body is “nitrogen ……”

3 – The protein with function of transporting oxygen

4 – A typical pathological process that is characterized by dysproteinemia

5 – A deposits of monosodium urate crystals in tissues

6 – The essential amino acid

7 – The acute gouty inflammation of joint

8 – The disturbance of intermediary metabolism of amino acids caused by pyridoxine deficiency

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**Task 3. Give answers to this task**

A 46-year-old patient complains of paroxysmal pain in the joints of the fingers and toes, fever. On examination: the joints of the foot are deformed, small round solid nodules are presented in the ear cartilages. An increase in the concentration of uric acid in the blood was determined. By X-ray examination in epiphyses of bones near joins surfaces well-defined structureless round foci were found.

1. What disease developed in the patient? What clinical signs confirm your diagnosis?

2. Name the disorder determined in the blood.

3. How are the small round solid nodules in ears cartilages called?

4. Describe etiology and pathogenesis of this disease.