Додаток

для україномовних студентів всіх факультетів

Тести англійською мовою на основі завдань Крок-1

1. An experiment has demonstrated that after exposure to ultraviolet radiation the dermal cells of the patients with xeroderma Pigmentosum are slower to restore the native DNA structure than they are in the healthy individuals due to deficiency of the DNA repair enzyme. What enzyme takes part in the repair process ?
A. DNA gyrase.
B. RNA ligase.
C. Primase.
D. DNA polymerase III holoenzyme.
E. *Endonuclease.

2. Blood serum analysis of the patient with acute hepatitis show sincreased levels of alanine aminotransferase (ALT) and aspartate aminotransferase (AST). What changes on the cellular level can resultin such developments ?
A. Disturbed intercellular interactions.
B. Disturbed energy supply to the cells.
C. Disturbed cellular enzyme systems.
D. Damage to the genetic apparatus of the cells.
E. *Cell destruction.

3. In the morning a man diagnosed with diabetes mellitus received a prescribed dose of long-acting insulin on an empty stomach. He missed his regular meal and soon after that he developed weakness, headache, and vertigo, body tremors, convulsions, feeling of hunger, and signs of hypoglycemia. Glucose administration did not improve the patient’s condition. What medicine should be administered to provide quick relief to the patient ?
A. Hydrocortisone
B. Triamcinolone
C. Noradrenaline
D. Prednisolone
E. *Adrenaline.

4. A 36-year-old woman suffers from a connective tissue disease (collagenosis). What metabolite is the most likely to be increased in her urine ?
A. Urobilinogen.
B. Indican.
C. Creatinine.
D. Urea.
E. *Oxyproline.

5. The cell was exposed to mutagenic factor which resulted in DNA molecule losing 2 nucleotide pairs. What type of mutation occurred in the DNA ?
A. Replication.
B. Duplication.
C. Inversion.
D. Translocation.
E. *Deletion.

6. An unconscious patient was brought into the hospital. The smell of acetone can be detected from the patient's mouth. Blood glucose – 25 mmol/L, ketone bodies – 0,57 mmol/L. What hormone deficiency can result in the development of this condition ?
A. Somatotropin
B. Thyroxin.
C. Glucocorticoids.
D. Aldosterone.
E. *Insulin.

7. A patient has developed systemic (megaloblastic) anemia despite eating a balanced diet. The day before he underwent a gastric surgical resection. The anemia in this patient is caused by the deficiency of:
A. Folic acid.
B. Vitamin B1.
C. Vitamin B6.
D. Protein.
E. *Castle factor.

8. A patient was hospitalized with diagnosis of an intestinal carcinoid. Laboratory analysis detects increased synthesis of serotonin from tryptophan. This process is based on the following biological mechanism:
A. Formation of paired compounds.
B. Deaminization.
C. Microsomaloxidation.
D. Transamination.
E. *Decarboxylation.

9. A 37-year-old man is admitted to hospital with mental confusion and disorientation. His wife reports he became more irritable and forgetful in the past year. In addition, she notes that he became a vegan a year ago, and currently, his diet consists of starchy foods like potatoes, corn, and leafy vegetables. GI symptoms include anorexia, diarrhea and vomiting. He has glossitis and skin lesions that appear as vesicles over the extremities. Eczema-like lesions around the mouth, as well as desquamation and roughened skin over the hands are also present. Neurologic examination reveals symmetrical hypesthesia for all types of sensation in both upper and lower extremities in a "gloves and socks" distribution. Deficiency in diet of which of the following amino acids is the most likely cause of this condition?
A. Arginine.
B. Threonine.
C. Lysine.
D. Histidine.
E. *Tryptophan.

10. A mother of a 4-month-old male infant brought him to pediatrician with complaints of food rejection and weight loss. He started having trouble latching onto his bottle. Examination reveals diminished muscle tone in all four limbs, and hepatosplenomegaly. An opthalmoscopic exam reveals macular cherry red spots. During the next few weeks, hepatosplenomegaly progresses, the boy fails to thrive, and he continues to reject food. ChestX-ray shows a reticulonodular pattern and calcified nodules. Biopsy of the liver shows foamy histiocytes. A Niemann-Pick disease is suspected. Which of the following is the most likely deficient enzyme in this patient ?
A. Galactocerebrosidase.
B. Phenylalanine-hydroxylase.
C. Glucose-6-phosphatese.
D. Glucocerebrosidase.
E. *Sphingomyelinase.

11. On your physiology class, the professor asks you to report about the effects of various body hormones and neurotransmitters on the metabolism of glucose. You begin your report with the statement that the use of glucose by the cells is preceded by absorbtion through the plasma membrane from the extracellular matrix into cell. Which of the following hormones is most likely responsible for the glucose uptake by the cell ?
A. Thyroxine.
B. Glucagon.
C. Glucose-6-phosphatase.
D. Epinephrine.
E. *Insulin.

12. High resistance of "winter-swimmers" (so-called "walruses") to low temperatures is explained by the increased production of certain hormones that stimulate the processes of biological oxidation and heat formation in the cells through the uncoupling of mitochondrial electron transfer and the oxidative phosphorylation. Choose the name of these hormones from the following list:
A. Glucagon.
B. Adrenaline and noradrenaline.
C. *Thyroid hormones.
D. Insulin.
E. Corticosteroids.

13. A newborn develops dyspepsia after the milk feeding. When the milk is substituted by the glucose solution the dyspepsia symptoms disappear. The newborn has the subnormal activity of the following enzyme:
A. Amylase
B. Maltase
C. Invertase
D. Isomaltase
E. *Lactase

14. Carnitine is recommended to a sportsman as a preparation that increases physical activity and improves achievements. What biochemical process is mostly activated under the action of carnitine?
A. *Transport of fatty acids into mitochondria
B. Ketone bodies synthesis
C. Lipids synthesis
D. Tissue respiration
E. Steroid hormones synthesis

15. Emotional stress causes activation of hormon-sensitive triglyceride lipase in the adipocytes. What secondary mediator takes part in this process?
A. Diacylglycerol
B. Ions of Ca^{2+}
C. Cyclic guanosine monophosphate
D. *Cyclic adenosine monophosphate
E. Adenosine monophosphate