

I. Read the text and answer 10 questions to it.

Candidiasis

Mucocutaneous infection results in oropharyngeal (thrush) or vaginal or cervical candidiasis; intertriginous lesions of the gluteal folds; paronychia; and onychia. Dysfunction of T lymphocytes, other immunologic disorders are associated with chronic mucocutaneous candidiasis. Chronic or recurrent oral candidiasis can be the presenting sign of HIV infection or primary immunodeficiency. Esophageal and laryngeal candidiasis can occur in patients who are immunocompromised. Disseminated or invasive candidiasis occurs in very low birth weight neonates and, in immunocompromised or debilitated hosts, can involve virtually any organ or anatomic site and be rapidly fatal. Like other *Candida* species, *C. albicans* is present on skin and in the mouth, intestinal tract, and vagina of immunocompetent people. Vulvovaginal candidiasis is associated with pregnancy, and newborns can acquire the organism in utero, during passage through the vagina, or postnatally. Person-to-person transmission occurs rarely. Factors such as extreme prematurity, neutropenia, or treatment with corticosteroids increase the risk of invasive infection. Patients receiving broad-spectrum antimicrobial agents, especially extended-spectrum cephalosporins, carbapenems, and vancomycin have increased susceptibility to infection. Postsurgical patients can be at risk, particularly after cardiothoracic or abdominal procedures. The presumptive diagnosis of mucocutaneous candidiasis or thrush can usually be made clinically, but other organisms or trauma can also cause clinically similar lesions. Yeast cells and pseudohyphae can be found in *C. albicans*-infected tissue and are identifiable by microscopic examination of scrapings. A definitive diagnosis of invasive candidiasis requires isolation of the organism from a normally sterile body site (eg, blood, cerebrospinal fluid, bone marrow) or demonstration of organisms in a tissue biopsy specimen.

1. The parents of a newborn came for medical and genetic counseling. Their baby is suspected to have Edwards syndrome that manifests as micrognathia, microstomia, and a short upper lip. What testing methods are necessary to clarify the diagnosis?

- A. Cytogenetics
- B. Biochemistry
- C. Clinical genealogy
- D. Dermatoglyphics
- E. Immunogenetics

2. Candidiasis affects only mucous membranes of the body.

- A. False
- B. True
- C. Not given
- D. -
- E. -

3. Oral candidiasis is always a symptom of HIV infection.

- A. False
- B. True
- C. Not given
- D. -
- E. -

4. A baby has microcephaly. Doctors believe that this condition is caused by the baby's mother taking actinomycin D during her

pregnancy. What germ layers have been affected by this teratogen?

- A. Ectoderm
- B. Endoderm
- C. Mesoderm
- D. Endoderm and mesoderm
- E. All the germ layers

5. The patients in the ICU have a high possibility of developing candidiasis.

- A. Not given
- B. True
- C. False
- D. -
- E. -

6. Choose the correct statement.

- A. In some cases, candidiasis can lead to death
- B. Candidiasis itself is not dangerous
- C. Candidiasis – is always the symptom of more serious illness
- D. Candidiasis occurs only in neonates
- E. -

7. Choose the correct statement.

- A. Pregnant women often have candidiasis
- B. Newborns often give candidiasis to their mothers
- C. Candidiasis cannot happen in pregnant women
- D. The onset of vulvovaginal candidiasis happens during the passage of the new-born through the vagina
- E. -

8. Choose the correct statement.

A. Getting infected from contact with an infected person is not very common

B. People who suffer from candidiasis often infect other people

C. People who suffer from candidiasis never infect other people

D. People who suffer from candidiasis can't infect other people

E. -

9. What factors increase the risk of getting candidiasis?

A. Prematurity, neutropenia, or treatment with corticosteroids

B. Cytotoxic chemotherapy and asthma

C. Allergy and neutropenia

D. Treatment with corticosteroids and NSAIDs

E. -

10. What patients have a higher risk of getting infected with candidiasis?

A. Patients who underwent surgery

B. Patients who stay in the hospital

C. Patients who had contact with the infected person

D. Patients who are taking any drugs

E. -

11. How can a definitive diagnosis of invasive candidiasis be made?

A. By finding Candida in the tissue that is normally sterile

B. Clinically

C. Microscopically

D. By performing endoscopy

E. -

12. Candidiasis can indicate a problem with the immune system

- A.** True
- B.** False
- C.** Not given
- D.** -
- E.** -

13. A 10-day-old baby has undergone a surgery for cleft upper lip («hare lip»). A split upper lip is caused by:

- A.** A non-union of the frontal and maxillary processes of the first branchial arch
- B.** A non-union of the tori palatini on the maxillary processes of the first branchial arch
- C.** A non-union of the second branchial arch
- D.** A non-union of the third branchial arch
- E.** A non-union of the maxillary and mandibular processes of the first branchial arch

14. A puncture material obtained from myeloid tissue of a 6-year-old child contains cells with pyknosis and cellular enucleation that occur in the process of their differentiation. What type of hematopoiesis can be characterized by these morphological changes?

- A.** Erythropoiesis
- B.** Thrombopoiesis
- C.** Granulopoiesis
- D.** Lymphopoiesis
- E.** Monopoiesis

15. In histogenesis of bone tissue, two ways of its development are possible. What stages are not characteristic of membranous osteogenesis?

- A.** Formation of epiphyseal centers of ossification
- B.** Formation of osteogenic buds within mesenchyme
- C.** Osteoid stage
- D.** Formation of reticulofibrous bone
- E.** Replacement of reticulofibrous bone tissue with lamellar bone tissue

16. In the peripheral zone of the pulp, the cell activity is temporarily inhibited for certain reasons. What dental tissue is at risk of developing a deficiency of its physiological regeneration in this case?

- A.** Dentin
- B.** Enamel
- C.** Pulp
- D.** Cellular cementum
- E.** Acellular cementum

17. For early detection of a pregnancy, a urinalysis is performed. What hormone is likely to indicate pregnancy, if it is present in the woman's urine?

- A.** Chorionic gonadotropin
- B.** Estriol
- C.** Aldosterone
- D.** Testosterone
- E.** Progesterone

18. A baby has a delay in eruption of the first teeth. What vitamin is deficient in this baby?

- A.** D_3
- B.** A
- C.** K
- D.** PP
- E.** E

19. Hyposalivation, observed in sialolithiasis, and both acute and chronic inflammations of the salivary glands, causes the development of:

- A.** Caries
- B.** Fluorosis
- C.** Stomatitis
- D.** Gingivitis
- E.** Pulpitis

20. Salivary α -amylase catalyzes the hydrolysis of α -1,4-glycosidic bonds of starch. What ions function as its activators?

- A.** Sodium ions
- B.** Potassium ions
- C.** Copper ions
- D.** Lead ions
- E.** Zinc ions

21. A hospitalized person has severe headache, nuchal rigidity, recurrent vomiting, and increased sensitivity to light stimuli. The patient has been diagnosed with meningitis and referred for a spinal tap. Where is the needle inserted for a spinal tap?

- A.** Between L3 and L4 vertebrae
- B.** Between L1 and L2 vertebrae
- C.** Between Th12 and L1 vertebrae
- D.** Between L5 vertebra and the base of the sacrum
- E.** Between Th11 and Th12 vertebrae

22. After a facial injury, the patient has a hematoma on the cheek. What salivary gland is likely to have its outflow blocked by this hematoma?

- A.** Parotid
- B.** Sublingual
- C.** Submandibular
- D.** Labial
- E.** Buccal

23. Due to the presence of a malignant tumor on the tongue, the patient has been referred for its surgical removal. Where is it easy to find the lingual artery and ligate it?

- A.** Pirogov triangle
- B.** Carotid triangle
- C.** Omoclavicular triangle
- D.** Omotrapezoid triangle
- E.** Omotracheal triangle

24. Experimental studies of membrane ionic currents in the dynamics of action potential development have shown that the ionic current that causes the repolarization phase can be classified as:

- A.** Passive potassium current
- B.** Passive sodium current
- C.** Active chlorine current
- D.** Active potassium current
- E.** Active sodium current

25. During the examination of a pregnant woman, a dentist detected 3 round formations on her oral mucosa. The formations appeared 3 days ago. They have a white-gray surface with a red rim and are up to 1 cm in diameter. What is the diagnosis in this case?

- A.** Aphthous stomatitis
- B.** Leukoplakia
- C.** Catarrhal stomatitis
- D.** Necrotizing ulcerative stomatitis
- E.** Gangrenous stomatitis

26. When extracting a tooth, the dentist destroys the bonds between the cementum of the dental root and the tooth socket. What structure is it?

- A.** *Periodontium*
- B.** *Gingiva*
- C.** *Pulpa dentis*
- D.** *Dentinum*
- E.** *Cementum*

27. During an examination of a 10-year-old child, a dentist detected numerous brown spots with a smooth surface but without enamel defects, located all over the surface of the dental crowns. What is the

most likely dental pathology in this child?

- A. Fluorosis
- B. Enamel erosion
- C. Enamel hypoplasia
- D. Acid-induced necrosis of enamel
- E. Spot stage of caries

28. The patient's leukogram is as follows: leukocytes — $14 \cdot 10^9/L$; myeloblasts — 71%; promyelocytes, myelocytes, and metamyelocytes — 0%; band neutrophils — 6%, segmented neutrophils — 13%; lymphocytes — 7%, monocytes — 3%. What is the patient's blood pathology?

- A. Myeloblastic leukemia
- B. Neutrophilic leukocytosis
- C. Chronic myeloid leukemia
- D. Lymphoblastic leukemia
- E. Chronic lymphocytic leukemia

29. The patient's blood has a C-reactive protein that chemically can be classified as a glycoprotein. What pathology does it indicate?

- A. Rheumatism
- B. Leucopenia
- C. Thrombocytopenia
- D. Anemia
- E. Porphyria

30. Histology of the diaphysis of a tubular bone shows basophilic cells with developed organelles of synthesis located on its surface under a layer of fibers. These cells take part in regeneration of bone tissue. In what layer of the diaphysis are they located?

- A. Periosteum
- B. Bone proper
- C. Layer of osteons
- D. Layer of external general lamellae
- E. Layer of internal general lamellae

31. A patient has arterial

hypertension with signs of angina pectoris. The patient has been prescribed an antianginal drug that is a calcium antagonist. Name this drug.

- A. Amlodipine
- B. Metoprolol
- C. Anaprilin (Propranolol)
- D. Pentoxifylline
- E. Molsidomine

32. Biochemical analysis of amino acid composition of freshly synthesized polypeptides shows that in the process of translation, in each of these proteins the first amino acid is always the same one. Name this amino acid.

- A. Methionine
- B. Serine
- C. Histidine
- D. Phenylalanine
- E. Isoleucine

33. An 11-month-old child has delayed teething, misaligned teeth, dry oral mucosa, and cracks appearing in the corners of the mouth with subsequent suppuration. This condition is likely to be associated with a deficiency of vitamin:

- A. A
- B. D
- C. E
- D. K
- E. C

34. A patient, who was taking a highly effective anti-tuberculosis drug, has developed gynecomastia at the end of the treatment course. What drug has caused this side effect?

- A. Isoniazid
- B. Rifampicin
- C. Ciprofloxacin
- D. Ethambutol
- E. Florimycin sulfate (Viomycin sulfate)

35. During a selection for revaccination with the BCG vaccine, a schoolboy has undergone the Mantoux test that turned out to be negative. What does this test result indicate?

- A. Absence of cellular immunity to tuberculosis
- B. Presence of cellular immunity to tuberculosis
- C. Absence of humoral immunity to tuberculosis
- D. Absence of antitoxic immunity to tuberculosis
- E. Presence of humoral immunity to tuberculosis

36. Name the sequence of special functional DNA segments and structural genes that encode synthesis of a certain group of proteins that belong to one metabolic series.

- A. Operon
- B. Regulator gene
- C. Operator
- D. Promoter
- E. Terminator

37. Name the change in the nucleotide sequence of a gene that is associated with the rotation of a certain DNA segment by 180°.

- A. Inversion
- B. Deletion
- C. Duplication
- D. Translocation
- E. Repair

38. A patient, who has overdosed on a narcotic substance, is unconscious and has hypothermia, hypotension, and persistent miosis.

What aid would be most effective and ensure the patient's survival in this case?

- A. Naloxone
- B. Nitrazepam
- C. Mesaton (Phenylephrine)
- D. Aethimizolum (Methylamide)
- E. Omeprazole

39. A patient has been hospitalized into the intensive care unit in a severe condition. It is known that he mistakenly took sodium fluoride that blocks cytochrome oxidase. What type of hypoxia has developed in the patient?

- A. Tissue hypoxia
- B. Hemic hypoxia
- C. Cardiovascular hypoxia
- D. Hypoxic hypoxia
- E. Respiratory hypoxia

40. The most important thing in the specific treatment of anaerobic infections is the timely administration of the serum that contains specific antibodies. In this case, the serum aims to neutralize:

- A. Exotoxin
- B. Toxoid
- C. Antitoxin
- D. Enterotoxin
- E. Anaerobic bacteria

41. A 38-year-old woman has developed a bronchial asthma attack. What broncholytic that is a β_2 -adrenergic agonist would be effective for providing emergency aid in this case?

- A. Salbutamol
- B. Adrenaline
- C. Ipratropium bromide
- D. Platyphyllinum
- E. Atropine

42. A patient with a malignant tumor has been prescribed a narcotic analgesic for pain relief.

What is the mechanism of analgesic action of such drugs?

- A.** Activation of opiate receptors
- B.** Inhibition of cholinergic receptors
- C.** Activation of D2 dopamine receptors
- D.** Inhibition of serotonergic receptors
- E.** Inhibition of histaminergic receptors

43. As a result of the blockage of the common bile duct (detected radiologically), the flow of bile into the duodenum has stopped. What process can be expected to become disturbed in this case?

- A.** Emulsification of lipids
- B.** Absorption of proteins
- C.** Hydrolysis of carbohydrates
- D.** Hydrochloric acid secretion in the stomach
- E.** Inhibition of salivary secretion

44. Examination of the oral cavity shows marked edema and hyperemia of the gums, supragingival and subgingival calculus, and formation of pocket-like cavities filled with structureless masses and food debris in the area of the dentogingival junction. These pockets produce purulent discharge, when pressed. X-ray shows resorption of the bone tissue in the tooth sockets. What is the diagnosis in this case?

- A.** Periodontitis
- B.** Fluorosis
- C.** Periodontosis
- D.** Hypertrophic gingivitis
- E.** Acute purulent periostitis

45. A 45-year-old woman with hypoparathyroidism came to a dentist. What renal function is likely to be impaired in this patient?

- A.** Reduction of calcium reabsorption in the distal tubules
- B.** Reduction of calcium filtration in the renal glomeruli
- C.** Reduction of vitamin B6 synthesis
- D.** Increase of prostaglandin synthesis
- E.** Increase of urokinase synthesis

46. Preventive examination of a 9-year-old girl has revealed one matte white spot (chalk-like and lacking its natural luster) on the enamel in the cervical region on the vestibular surface of her tooth 21. The girl has no subjective complaints. What is the most likely diagnosis in this case?

- A.** Initial caries
- B.** Superficial caries
- C.** Fluorosis
- D.** Enamel hypoplasia
- E.** Dental erosion

47. What is caused by an absolute deficiency of vitamin K in the body?

- A.** Hypocoagulation
- B.** Disturbed platelet adhesion
- C.** Intestinal dysbiosis
- D.** Hypercoagulation
- E.** —

48. A patient complains of an extremely runny nose and lost sense of smell. Where in the nasal cavity are located the receptors of the olfactory analyzer?

- A.** Superior nasal meatus
- B.** Middle nasal meatus
- C.** Inferior nasal meatus
- D.** Common nasal meatus
- E.** Choanae

49. During an accident on a nuclear submarine, a conscript soldier received a radiation dose of 5 Gy. He complains of headache, nausea, and dizziness. What changes in the

leukocyte count can be expected after such irradiation?

- A.** Neutrophilic leukocytosis
- B.** Agranulocytosis
- C.** Anemia
- D.** Lymphocytosis
- E.** Leukopenia

50. For caries prevention, dentists recommend limiting the intake of simple carbohydrates. What is the role of a cariogenic diet in the

pathogenesis of defects of hard dental tissues?

- A.** Decrease of pH in the oral cavity
- B.** Disorders of calcium and phosphorus metabolism
- C.** Saturation of dental enamel with fluorine
- D.** Formation of chelating substances
- E.** Activation of remineralization process