

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

Measles

Measles is an acute viral disease characterized by fever, cough, coryza, and conjunctivitis, followed by a maculopapular rash beginning on the face and spreading cephalocaudally and centrifugally. During the prodromal period, a pathognomonic enanthema (Koplik spots) may be present. Complications include otitis media, bronchopneumonia, laryngotracheobronchitis (croup), and diarrhea and occur commonly in young children and immunocompromised hosts. Acute encephalitis often results in permanent brain damage and occurs in approximately 1 of every 1,000 cases. Case-fatality rates are increased in children younger than 5 years and immunocompromised children. Sometimes, the characteristic rash does not develop in immunocompromised patients

Subacute sclerosing panencephalitis (SSPE) is a rare degenerative central nervous system disease characterized by behavioral and intellectual deterioration and seizures. Widespread measles immunization has led to the virtual disappearance of SSPE in the United States. The only natural host of measles virus is humans. Measles is transmitted by direct contact with infectious droplets or, less commonly, by airborne spread. Measles is one of the most highly communicable of all infectious diseases.

The childhood and adolescent immunization program in the United States has resulted in a greater than 99% decrease in the reported incidence of measles and interruption of endemic disease transmission since measles vaccine was first licensed in 1963.

From 1989 to 1991, the incidence of measles in the United States increased because of low immunization rates in preschool-aged children, especially in urban areas. Following improved coverage in preschool-aged children and implementation of a routine second dose of measles-mumps-rubella vaccine for children, the incidence of measles declined to extremely low levels (<1 case per 1 million population). The number of measles outbreaks (23 cases linked in time and space) that occurred ranged from 2 to 16 per year. In the first half of 2014, 514 measles cases from 16 outbreaks were reported in 20 states.

Forty-eight separate importations occurred; 81% were in unvaccinated people, 12% of those infected had an unknown vaccination status (78% of those were adults), and 7% of those infected were vaccinated (including 5% with 2 or more doses).

1. Koplik spot is a symptom specific only to measles.

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

2. Measles can result in a brain damage.

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

3. The most common complication of measles is the otitis.

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

4. The highest mortality from measles is among the newborns.

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

5. What are the most common complications of measles?

- A.** Otitis, bronchopneumonia, croup, diarrhoea
- B.** Acute encephalitis and death
- C.** Respiratory complications
- D.** Neurologic complications
- E.** -

6. Choose the correct statement.

- A.** Koplik spots may develop during measles in all kinds of patients
- B.** Koplik spots develop during measles only among immunocompromised patients
- C.** Koplik spots develop during measles only among children
- D.** Koplik spots develop during measles only among adults
- E.** -

7. What is subacute sclerosing panencephalitis (SSPE)?

- A.** A complication of measles that happens only in children
- B.** The disease that is often mistaken for measles
- C.** A complication of measles that happens only in adults
- D.** A complication of measles that happens only in newborns
- E.** -

8. Choose the correct statement.

- A.** Measles immunization has led to the disappearance of the SSPE
- B.** Measles immunization has led to the disappearance of measles itself
- C.** Measles immunization has led to the disappearance of the respiratory and neurologic complications
- D.** Measles immunization has led to the disappearance of all its complications
- E.** -

9. What is the most common way of measles transmission?

- A.** Droplet
- B.** Contact
- C.** Oral
- D.** Airborne
- E.** -

10. What categories of people most often have measles during measles outbreaks?

- A.** Unvaccinated
- B.** Vaccinated with only one dose
- C.** Adults
- D.** Elderly people
- E.** -

11. A patient was diagnosed with a monogenic hereditary disease. Name this disease:

- A.** Hemophilia
- B.** Hypertension
- C.** Peptic ulcer disease of the stomach
- D.** Poliomyelitis
- E.** Hymenolepiasis

12. A woman complains of painful chewing, especially when she moves her lower jaw backwards. What muscles are affected?

- A.** Posterior bundles of the temporal muscles
- B.** Anterior bundles of the temporal muscles
- C.** Medial pterygoid muscles
- D.** Lateral pterygoid muscles
- E.** Masseter muscles

13. A 40-year-old male has hearing

impairment and paresis of facial muscles resulting from a blow to his head. He was diagnosed with a hematoma of cerebellopontine angle. What nerves had been damaged?

- A. VII, VIII pairs of cranial nerves
- B. V, VI pairs of cranial nerves
- C. VIII, IX pairs of cranial nerves
- D. IX, X pairs of cranial nerves
- E. —

14. A 33-year-old patient complains of an impairment of skin sensitivity in the medial part of the dorsal and palmar surface of hand. Which nerve is damaged?

- A. *N. ulnaris*
- B. *N. radialis*
- C. *N. medianus*
- D. *N. musculocutaneus*
- E. *N. cutaneus antebrachii medialis*

15. An excessive bone tissue loss is often observed in older people, which indicates osteoporosis development. What bone tissue cells are activated, resulting in the development of this disease?

- A. Osteoclasts
- B. Osteoblasts
- C. Macrophages
- D. Tissue basophils
- E. Osteocytes

16. The process of aging in humans is associated with decreased synthesis and secretion of pancreatic juice and its lower trypsin content. It results in disturbed breakdown of:

- A. Proteins
- B. Phospholipids
- C. Polysaccharides
- D. Nucleic acids
- E. Lipids

17. A patient has been prescribed pyridoxal phosphate. What processes are corrected with this drug?

- A. Transamination and decarboxylation of amino acids
- B. Oxidative decarboxylation of keto acids
- C. Deamination of amino acids
- D. Synthesis of purine and pyrimidine bases
- E. Protein synthesis

18. An ophthalmologist suspects blennorrhoea (gonococcal conjunctivitis) in a child with signs of suppurative keratoconjunctivitis. What laboratory diagnostics should be conducted to confirm the diagnosis?

- A. Microscopy and bacteriological analysis
- B. Serum diagnostics and allergy test
- C. Biological analysis and phagodiagnosics
- D. Biological analysis and allergy test
- E. Microscopy and serum diagnostics

19. A patient with ciliary arrhythmia and a history of bronchial asthma should be prescribed an antiarrhythmic drug. What antiarrhythmic drug is contraindicated in this case?

- A. Anaprilin (Propranolol)
- B. Ajmaline
- C. Verapamil
- D. Nifedipine
- E. —

20. Premature babies often develop respiratory distress syndrome. This pathology is caused by the deficiency of a certain component of the blood–air barrier. Name this component:

- A. Surfactant
- B. Capillary endothelium
- C. Endothelial basement membrane
- D. Alveolar basement membrane
- E. Alveolocytes

21. A patient being treated for viral B hepatitis developed signs of hepatic failure. What changes in the

blood test that indicate a protein metabolism disorder will most likely be observed in this case?

- A. Absolute hypoalbuminemia
- B. Absolute hyperalbuminemia
- C. Absolute hyperfibrinogenemia
- D. Blood protein composition is unchanged
- E. Absolute hyperglobulinemia

22. A patient with acute retention of urine has been brought to an admission room. During examination a doctor found out that the patient has urethral obturation caused by pathology of the surrounding organ. Name this organ:

- A. Prostate
- B. Testicle
- C. Seminal vesicle
- D. Spermatic cord
- E. Epididymis

23. What factor results in maximal dilation of the gemomicrocirculatory pathway vessels and their increased permeability?

- A. Histamine
- B. Endothelin
- C. Vasopressin
- D. Noradrenaline
- E. Serotonin

24. A child presents with dry cough. What non-narcotic antitussive drug can relieve the patient's condition?

- A. Glaucine hydrochloride
- B. Codeine phosphate
- C. Morphine hydrochloride
- D. Potassium iodide
- E. *Althaea officinalis* roots

25. After examination, the signs of acromegaly were detected in a patient. What endocrine gland is involved in this pathological process?

- A. Adenohypophysis
- B. Neurohypophysis
- C. Pineal gland
- D. Adrenal glands
- E. Thyroid gland

26. A 45-year-old female patient has neurosis with irritability, insomnia, amotivational anxiety. What tranquilizer will be able to eliminate all symptoms of the disease?

- A. Diazepam
- B. Paracetamol
- C. Piracetam
- D. Caffeine-sodium benzoate
- E. Levodopa

27. A 25-year old woman is admitted to the hospital because of a 6-week history of double vision and difficulty to talk after prolonged speaking. Her husband reports fluctuating droopy eyelids in the morning and evening. An immunologic assay detects the presence of circulating autoantibodies against the certain receptors at the neuromuscular junction. Disturbed binding of which of the following neurotransmitters is the most likely cause of this patient's symptoms?

- A. Acetylcholine
- B. Epinephrine
- C. Dopamine
- D. Serotonin
- E. γ -aminobutyric acid (GABA)

28. After the transfusion of the concentrated red blood cells the patient developed posttransfusion shock. What is the leading mechanism of acute renal failure in this case?

- A. Glomerular filtration disorder
- B. Tubular reabsorption disorder
- C. Tubular secretion disorder
- D. Urinary excretion disorder
- E. Impairment of the renal incretory function

29. During a surgery on the right side of the neck, excursion of the right diaphragmatic dome was disturbed. This disturbance occurred because of the damage to the following nerve:

- A.** Right phrenic nerve
- B.** Left phrenic nerve
- C.** Right transverse cervical nerve
- D.** Left transverse cervical nerve
- E.** Supraclavicular nerve

30. Microscopic examination of the leftovers of the canned meat eaten by a patient with severe food toxicoinfection detected the following: gram-positive bacilli with subterminal staining defect and changed configuration, generally resembling a tennis racket. What causative agent was detected?

- A.** *C. botulinum*
- B.** *S. aureus*
- C.** *E. coli*
- D.** *S. enteritidis*
- E.** *P. vulgaris*

31. Lab rats were used to study the effect of a certain vitamin on the body. Deficiency of this vitamin has resulted in a disturbed reproductive function and skeletal muscle dystrophy. What vitamin is it?

- A.** *E*
- B.** *B₂*
- C.** *A*
- D.** *K*
- E.** *D*

32. Cytogenetic analysis allowed to determine the patient's karyotype — 47, XY, +21/46, XY. Name this condition:

- A.** Mosaicism
- B.** Deletion
- C.** Translocation
- D.** Genocopy
- E.** Phenocopy

33. A 40-year-old patient suffers

from intolerance of dairy food products. This condition has likely developed due to insufficiency of the following digestive enzyme:

- A.** Lactase
- B.** Lipase
- C.** Maltase
- D.** Invertase
- E.** Amylase

34. In the uterine cavity an embryo was found that was not attached to the endometrium. What stage of embryonal development is it?

- A.** Blastocyst
- B.** Zygote
- C.** Mulberry body
- D.** Neurula
- E.** Gastrula

35. Treatment of a patient with hereditary form of immunodeficiency involved gene therapy: the enzyme gene was introduced into the cells of the patient by means of a retrovirus. What property of the genetic code allows to use retroviruses as vectors of functional genes?

- A.** Universality
- B.** Specificity
- C.** Collinearity
- D.** Continuity
- E.** Redundancy

36. Calcification of dental tissues is significantly influenced by osteocalcin protein which has an ability to bind calcium ions due to the presence of the following modified amino acid residues in the polypeptide chain:

- A.** γ -carbon glutamine
- B.** Alanine
- C.** γ -aminobutyric
- D.** Carboxy asparagine
- E.** δ -aminopropionic

37. Microscopy of dental plaque revealed unicellular organisms. Their cytoplasm had two distinct layers, barely visible core, wide

pseudopodia. The patient is most likely to have:

- A. *Entamoeba gingivalis*
- B. *Lambli*a
- C. *Trichomonas tenax*
- D. *Entamoeba histolytica*
- E. *Entamoeba coli*

38. A dentist used a solution of potassium permanganate as an antiseptic. This preparation has a bactericidal effect because of:

- A. Atomic oxygen
- B. Potassium oxide
- C. Manganese oxide
- D. Potassium
- E. Potassium hydroxide

39. A tourist, who had been to one of the Far East countries, was hospitalized into the therapeutics unit with suspected pneumonia. Examination of his sputum and feces detected there lung fluke eggs. What food products are the most likely cause of lung fluke infestation?

- A. Insufficiently thermally processed freshwater crabs
- B. Insufficiently thermally processed beef
- C. Insufficiently thermally processed eggs
- D. Insufficiently thermally processed pork
- E. Raw fruits and vegetables

40. A patient was diagnosed with peptic ulcer disease of the stomach and prescribed an antibacterial treatment. This treatment will be aimed against the following causative agent:

- A. *H. pylori*
- B. *E. coli*
- C. *St. aureus*
- D. *Cl. perfringens*
- E. *Cl. trachomatis*

41. A 67-year-old man was delivered to a cardiology department with

complaints of periodical pains in his heart, dyspnea caused by even slight exertion, cyanosis, and edemas. ECG shows additional excitations of heart ventricles. Name this type of rhythm disturbance:

- A. Extrasystole
- B. Bradycardia
- C. Tachycardia
- D. Flutter
- E. Fibrillation

42. During physical and emotional strain, a person is less sensitive to pain. This phenomenon occurs due to activation of the:

- A. Antinociceptive system
- B. Thyroid function
- C. Nociceptive system
- D. Adrenal function
- E. Parasympathetic system

43. Cells of sensory spinal ganglions are a part of reflex arches. What type of neurons are these cells?

- A. Pseudounipolar
- B. Multipolar
- C. Bipolar
- D. Unipolar
- E. —

44. Ulcer disease of the duodenum has been detected in a 38-year-old man. A treatment was prescribed, after which the patient considered himself to be healthy. However, half a year later the patient developed pain in the epigastrium, heartburn, and insomnia. The patient's condition can be estimated as a:

- A. Relapse
- B. Remission
- C. Development of chronic disease
- D. Latent period
- E. —

45. Dentists have high risk of contracting viral hepatitis type B in the course of their duties and therefore are subject to mandatory

vaccination. What vaccine is used in such cases?

- A.** Recombinant vaccine
- B.** Chemical vaccine
- C.** Inactivated vaccine
- D.** Anatoxin
- E.** Live vaccine

46. There is a 7-year-old child with complains of cough, lacrimation, rhinitis, skin rash, photophobia and three-day-long fever as high as 38°C. Physical examination has revealed the following: conjunctivitis; bright red maculopapular rash covering the skin of face, neck and torso; hyperemic pharynx; serous purulent secretions from the nose; dry rales in the lungs. What is the most probable diagnosis?

- A.** Measles
- B.** Scarlet fever
- C.** Rubella
- D.** Adenovirus infection
- E.** Chicken pox

47. To test teeth sensitivity, they are sprayed with cold or hot water. What structure of cerebral cortex provides subjective estimation of this thermal test?

- A.** Posterior central gyrus
- B.** First temporal convolution
- C.** Precentral gyrus
- D.** Middle frontal gyrus
- E.** Central fissure

48. Autopsy of the body a 58-year-old man, who had been suffering from rheumatic heart disease and died of cardiopulmonary decompensation, revealed gray

diffuse film- and fiber-shaped coating in his pericardium. What type of inflammation is characteristic of this pericarditis?

- A.** Croupous fibrinous
- B.** Serous
- C.** Hemorrhagic
- D.** Diphtheritic fibrinous
- E.** Suppurative

49. During examination of the patient's oral cavity, a dentist noticed deformation of the teeth and a crescent indentation on the upper right incisor. The teeth are undersized, barrel-shaped — tooth cervix is wider than its edge. The patient uses a hearing aid, suffers from visual impairment. What type of syphilis affects teeth in such a way?

- A.** Late congenital
- B.** Primary
- C.** Early congenital
- D.** Secondary
- E.** Neurosyphilis

50. A girl presents with high fever and sore throat. Objectively, the soft palate is swollen, the tonsils are covered with gray films. The films are firmly attached and leave deep bleeding lesions when removed. What is the most likely disease in this case?

- A.** Pharyngeal diphtheria
- B.** Pseudomembranous (Vincent's) tonsillitis
- C.** Lacunar tonsillitis
- D.** Infectious mononucleosis
- E.** Necrotic tonsillitis