1. A 52-year-old woman came to a neurologist with complaints of the loss of sensitivity in the skin of the right half of her face in the area of the lower eyelid, nasal bridge, and upper lip. What nerve branch is damaged in this case?

a. Ophthalmic division of the trigeminal nerve
b. Mandibular division of the trigeminal nerve
c. Greater petrosal nerve, a branch of the facial nerve
d. Maxillary division of the trigeminal nerve
e. Chorda tympani, a branch of the facial nerve

2. A 42-year-old female comes to the physician 2 days after the sudden onset of pain and swelling of her right knee. She has had no injury. Examination of the right knee shows warmth, erythema, and effusions. Laboratory studies show an increase in the concentration of acute phase reactants. Which of the following is the most appropriate pharmacotherapy for this patient?

a. Opioids
b. Sulfonamides
c. Antibiotics
d. Antidepressants
e. Nonsteroidal anti-inflammatory drugs (NSAIDs)

3. Among the amino acids that contain a hydroxyl group, one is of the greatest importance in the formation of the structure of collagen and the organic matrix of the tooth. What is this amino acid?

a. Homoserine
b. Threonine
c. Oxyproline
d. Tyrosine
e. Serine

4. A 66-year-old male is brought to the emergency department with central chest pain for 1 hour. He rates his pain as severe, dull in character and it is associated with profuse sweating and shortness of breath. Physical examination reveals a blood pressure of 100/70 mm Hg, pulse --- 115/min, oxygen saturation of 95% on room air. An electrocardiogram is done and shows ST elevation in leads II, III and avF which is consistent with an acute myocardial infarction. The patient is given oral aspirin, sublingual nitroglycerine and intravenous morphine. Which of the following is the most likely mechanism of action of morphine?

a. Adenylyl cyclase activator
b. Acetylcholinesterase inhibitor
c. Opioid receptors agonist
d. Histamine receptor antagonist
e. Phosphodiesterase inhibitor

5. 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. Inactivated vaccine
b. Recombinant vaccine
c. Chemical vaccine
d. Live vaccine
e. Anatoxin

6. A 6-year-old girl with diphtheria is administered an intravenous injection of diphtheria antitoxin. Ten days after the initial administration of drug, she develops a pruritic rash, fever, and arthralgias. Which of the following is the most likely diagnosis?

a. Atopy
b. Allergic contact dermatitis
c. Serum sickness
d. Anaphylaxis
e. Delayed type hypersensitivity

7. 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. Redundancy

b. Universality

c. Specificity

d. Continuity

e. Collinearity

8. Filopodia of megakaryocytes pass through the pores of the sinusoidal capillaries of the red bone marrow into the lumen of blood vessels, where they are fragmented into individual laminae. What blood corpuscles are formed this way?

a. Platelets

b. Reticulocytes

c. Erythrocytes

d. Lymphocytes

e. Monocytes

9. Examination of an oral cavity shows puffy gums, pus between teeth and gums, contact bleeding. The dentist suspects gum infection that damages the soft tissue and destroys the bone that supports the teeth. This pathology can cause teeth to loosen or lead to tooth loss. Which of the following is the most likely diagnosis?

a. Galvanosis

b. Acute sialadenitis

c. Xerostomia

d. ---

e. Periodontitis

10. A patient cannot lift the lowered mandible. What muscles fail to perform their function in this case?

a. Epicranius muscle

b. Mimic muscles

c. Orbicularis oris muscle

d. Masticatory muscles

e. Levator anguli oris muscle

11. 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. Aldosterone

b. Chorionic gonadotropin

c. Testosterone

d. Progesterone

e. Estriol

12. 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. Rubella

b. Adenovirus infection

c. Measles

d. Scarlet fever

e. Chicken pox

13. 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. Dental erosion
c. Superficial caries
d. Fluorosis
e. Enamel hypoplasia

14. What infectious-allergic disease is associated with the development of bilateral diffuse or focal non-purulent inflammation of the glomerular apparatus of the kidneys with characteristic renal and extrarenal symptoms?
a. Polycystic kidney disease
b. Nephrolithiasis
c. Pyelonephritis
d. Glomerulonephritis
e. Nephrosclerosis

15. A baby has a delay in eruption of the first teeth. What vitamin is deficient in this baby?
a. PP
b. A
c. E
d. D_{3
e. K

16. A 10-year-old boy is brought to the physician by his parents because of fever, cough, and fatigue. He has been admitted to the hospital five times because of pneumonia. Attempts to induce immunity using the pneumococcal vaccine have failed. The first hospitalization was at the age of 12 months. Laboratory findings show marked reduction in all classes and subclasses of serum immunoglobulins. Which of the following immune cells is most likely to be reduced in the peripheral blood of this patient?
a. Neutrophils
b. NK-cells
c. Macrophages
d. B-cells
e. T-cells

17. A 6-year-old child with suspected active tuberculosis has undergone Mantoux test. What immunobiological substance was administered for this purpose?
a. BCG vaccine
b. DT vaccine
c. DPT vaccine
d. Tuberculin
e. Tularin

18. 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. Tubular reabsorption disorder
b. Impairment of the renal incretory \\ function
c. Tubular secretion disorder
d. Glomerular filtration disorder
e. Urinary excretion disorder

19. 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. Ethambutol
b. Isoniazid
c. Rifampicin
d. Ciprofloxacin
e. Florimycin sulfate (Viomycin sulfate)

20. 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. Verapamil
b. Anaprilin (Propranolol)
c. Nifedipine
d. ---
e. Ajmaline

21. 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. Thrombocytopenia
c. Porphyria
d. Anemia
e. Leucopenia

22. 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. A
b. D
c. E
d. K
e. B_2

23. A previously healthy 8-year old boy is brought to the emergency department by his parents because of fever and progressively worsening sore throat and dysphagia. Physical examination shows pharyngeal erythema with tender left and right cervical lymphadenopathy. Contrast-enhanced computed tomography (CT) shows fluid accumulation in the retropharyngeal space. A diagnosis of retropharyngeal abscess is suspected. Which of the following fasciae is most likely involved in this process?
a. Temporal fascia
b. Buccopharyngeal fascia
c. Parotid fascia
d. Masseteric fascia
e. ---

24. All of the teeth in the mouth together are referred to as the dentition. Humans have two dentitions throughout life: one during childhood, called the primary dentition, and one that will hopefully last throughout adulthood, called the permanent (secondary) dentition. The first permanent molars usually begin their eruption by/at:
a. Birth
b. Four to five years of age
c. Twelve months of age
d. ---
e. Six to seven years of age

25. The liquidator of the consequences of the accident at the Chornobyl nuclear power plant received an ionizing radiation dose of 6 Gray. What changes in the leukocyte formula can be expected in this patient in 10 days?
a. Lymphocytosis
b. Basophilia
c. Leukocytosis with lymphocytopenia
d. Agranulocytosis
e. Eosinophilia

26. In the experiment an investigator reveals that glucose is actively taken up by cells (except brain cells). Moreover, gluconeogenesis in liver is stimulated and glycogen synthesis in liver and muscles is increased. Which of the following hormones is most likely responsible for these changes?
a. Triiodothyronine (T3)
b. Somatostatin

c. Insulin
d. Aldosterone
e. Glucagon

27. A 56-year-old woman comes to the emergency department complaining of severe abdominal pain for the last several hours. The pain is cramp-like in nature, constant and has worsened over time. She gives a history of episodic right upper abdominal pain for the past few months, mostly after consuming fatty foods, radiating to the tip of the scapula. Ultrasound of the gallbladder shows hyperdense structures with an acoustic shadow (gallstones) and a thickened wall. Which of the following processes is most likely disturbed in presence of the stone in the gallbladder?
a. Hydrochloric acid (HCl) secretion in stomach
b. Inhibition of saliva secretion
c. Proteins digestion to amino acids
d. Emulsification of lipids
e. Carbohydrates digestion to monosaccharides

28. A girl provisionally diagnosed with Turner syndrome made an appointment with a genetic consultancy. What genetic method of diagnostics can confirm this diagnosis?
a. Dermatoglyphics
b. Genealogy
c. Hybridology
d. Biochemistry
e. Sex chromatin identification

29. 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 sodium current
b. Active potassium current
c. Active chlorine current
d. Passive potassium current
e. Active sodium current

30. Examination of a 40-year-old woman detected increased basal metabolism. What hormone levels are excessive in this woman, causing her pathological condition?
a. Thyrocalcitonin
b. Somatostatin
c. Glucagon
d. Triiodothyronine
e. Aldosterone

31. A patient has made an appointment with a dentist. A cavity was detected in the softened dentin of his premolar. A narrow layer of dentin remains between the carious cavity and the pulp. What is the most likely diagnosis in this case?
a. Fluorosis
b. Superficial caries
c. Deep caries
d. White spot lesion
e. Median caries

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. Phenylalanine
b. Serine
c. Methionine
d. Isoleucine
e. Histidine

33. 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. Omotrapezoid triangle

c. Carotid triangle

d. Omoclavicular triangle

e. Omotracheal triangle

34. 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. Amylase

b. Invertase

c. Maltase

d. Lactase

e. Lipase

35. A 49-year-old man comes to his physician with complaints of moderate headaches and profuse sweating. He mentions that his coworkers have made comments about his apparent increase in gloves and boots size. He says that since he joined his company 10 years ago he has changed the size of clothes at least 4 times. Physical examination shows hyperhidrosis, noticeable large pores, hypertrichosis, widely spaced teeth and prognathism. Which of the following is the most likely cause of this pathology?

a. ---

b. Excess secretion of vasopressin

c. Excess secretion of growth hormone

d. Decreased secretion of insulin

e. Decreased secretion of glucocorticoids

36. When examining the patient's oral cavity, the dentist noticed a significant tremor of the tongue. Exophthalmos is observed in the patient, as well. The doctor advised the patient to consult an endocrinologist. During the examination, the diagnosis of Basedow's disease was made. This condition is mainly caused by the hyperfunction of certain cells. Name these cells.

a. Endocrinocytes of the zona glomerulosa of the adrenal cortex

b. Parathyrocytes

c. Parafollicular cells

d. Thyrocytes

e. Endocrinocytes of the zona fasciculata of the adrenal cortex

37. During examination of the patient's oral cavity, a dentist noticed deformation of the teeth and a crescent indentation on the upper right inscisor. 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. Neurosyphilis

c. Early congenital

d. Secondary

e. Primary

38. A 37-year-old male was admitted to a hospital complaining of abdominal pain, difficulty in swallowing and breathing, constipation, and nausea. He developed respiratory failure and required endotracheal intubation and ventilation. Two days before, the patient consumed dried salted fish bought from an artisanal producer. Laboratory investigation for infectious pathogen was performed using Kitt-Tarozzi's method. Observation under a bright field microscopy revealed the presence of typical microorganisms with <<tennis racket>> appearance. Which of the following is the most likely diagnosis?

a. Nontyphoidal Salmonella infection

b. Typhoid fever

c. Cholera

d. Shigella infection

e. Botulism

39. 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. Piracetam
b. Diazepam
c. Levodopa
d. Caffeine-sodium benzoate
e. Paracetamol

40. 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 third 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 frontal and maxillary processes of the first branchial arch
e. A non-union of the maxillary and mandibular processes of the first branchial arch

41. An 11-year-old boy comes to the pediatric dentist with the chief complaint of <<not being able to close his left eye or smile>>. Examination reveals the disappearance of the nasolabial fold, the left eyebrow sagging, and partial inability to close the left eye. Which of the following nerves is most likely affected?

a. Trigeminal nerve
b. Glossopharyngeal nerve
c. Accessory nerve
d. Facial nerve
e. Hypoglossal nerve

42. Blood testing of a 35-year-old patient shows the following: Hb --- 58 g/L, erythrocytes --- 1.3·10^12/L, color index --- 1.3, leukocytes --- 2.8·10^9/L, platelets --- 1.1·10^9/L, reticulocytes --- 2%, ESR --- 35 mm/hour. Polysegmented neutrophils, Jolly bodies, Cabot rings, and megalocytes can be detected. What type of anemia is it?

a. Hemolytic anemia
b. B_12 and folate deficiency anemia
c. Hypoplastic anemia
d. Iron deficiency anemia
e. Posthemorrhagic anemia

43. Some diseases of the small intestine are associated with dysfunction of exocrinocytes with acidophilic granules (Paneth cells). Where are these cells located?

a. On the lateral surfaces of the intestinal villi
b. In the apical parts of the intestinal villi
c. In the apical parts of the intestinal crypts
d. At the crypt-villus junction
e. At the bottom of the intestinal crypts

44. Bacteriology of the stools of a person, who works as a chef at a restaurant and has no clinical manifestations of the disease, resulted in growth of small colonies with a metallic sheen on a bismuth sulfite agar. What microorganisms are likely in this case?

a. Staphylococci
b. Escherichia
c. Streptococci
d. Shigella
e. Salmonella

45. As a result of an injury, an area of the oral cavity was damaged. This area can be divided into the maxillary, intermediate, and mandibular zones. What part of the oral cavity is damaged?

a. Tongue
b. Soft palate

c. Lip
d. Cheek
e. Hard palate

46. 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. Presence of cellular immunity to tuberculosis
b. Absence of antitoxic immunity to tuberculosis
c. Absence of cellular immunity to tuberculosis
d. Absence of humoral immunity to tuberculosis
e. Presence of humoral immunity to tuberculosis

47. A 45-year-old woman with hypoparathyroidism came to a dentist. What renal function is likely to be impaired in this patient?
a. Increase of prostaglandin synthesis
b. Reduction of calcium filtration in the renal glomeruli
c. Reduction of vitamin B6 synthesis
d. Reduction of calcium reabsorption in the distal tubules
e. Increase of urokinase synthesis

48. A 60-year-old patient presents with impaired perception of high-frequency sounds. What structures of the auditory analyzer are impaired in this case, causing such changes?
a. Cochlear basilar membrane near the oval window
b. Cochlear basilar membrane near the helicotrema
c. Eustachian tube
d. Tympanic membrane
e. Middle ear muscles

49. A 35-year-old woman is brought to the physician because of a 4-month history of progressive weakness of both lower limbs. She notes difficulty climbing stairs and complains of lethargy and loss of muscle bulk. Her diet consists primarily of <<polished>> rice. A diagnosis of dry beriberi is suspected. Deficiency of which of the following vitamins is most likely to be detected in her blood?
a. Vitamin B_1 (thiamine)
b. Vitamin C (ascorbic acid)
c. Vitamin B_6 (pyridoxine)
d. Vitamin B_3 (niacin)
e. Vitamin B_2 (riboflavin)

50. 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. Inhibition of histaminergic receptors
b. Inhibition of serotonergic receptors
c. Activation of opiate receptors
d. Activation of D2 dopamine receptors
e. Inhibition of cholinergic receptors

51. A 43-year-old cattle farm worker is brought to the surgeon with fever, malaise, and inflamed lesions on his hands and arms. He reports that about 2 weeks before his presentation at the hospital he noticed small, painless, pruritic papules that quickly enlarged and developed a central vesicle. The vesicles developed into erosion and left painless necrotic ulcers with black, depressed eschar. Gram's staining of the ulcer reveals gram-positive spore-forming bacilli. Which of the following diseases is the most likely cause of these findings?
a. Plague
b. Chickenpox
c. Anthrax
d. Syphilis
e. Tularemia

52. An ophthalmologist suspects blennorrhea (gonococcal conjunctivitis) in a child with signs of

suppurative keratoconjunctivitis. What laboratory diagnostics should be conducted to confirm the diagnosis?

a. Serum diagnostics and allergy test
b. Biological analysis and \\ phagodiagnostics
c. Biological analysis and allergy test
d. Microscopy and serum diagnostics
e. Microscopy and bacteriological \\ analysis

53. A man with infertility requested medical genetic counseling. One Barr body was detected in the nuclei of most of the cells in his buccal mucosal epithelium. What is the likely cause of this pathological condition?

a. Triple X syndrome
b. Triple Y syndrome
c. Down syndrome
d. Klinefelter syndrome
e. Turner syndrome

54. A 28-year-old female patient dies of progressive respiratory failure after she was diagnosed with comminuted fracture of the right hip. Prior to her death she developed severe hypoxemia, neurologic abnormalities, and petechial rash. At autopsy, examination of pulmonary microvasculature shows intraluminal orange sudanophilic droplets. Which of the following complications is the most likely cause of this patient's death?

a. Tumor embolism
b. Air embolism
c. Thromboembolism
d. Amniotic fluid embolism
e. Fat embolism

55. 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. Parasympathetic system
e. Adrenal function

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

a. Lateral pterygoid muscles
b. Posterior bundles of the temporal \\ muscles
c. Medial pterygoid muscles
d. Masseter muscles
e. Anterior bundles of the temporal \\ muscles

57. Name the specific phase of action potential, characteristic of typical cardiomyocytes:

a. Slow repolarization (plateau)
b. Systolic repolarization
c. Slow diastolic repolarization
d. Rapid systolic depolarization
e. Rapid diastolic depolarization

58. A patient has a dysfunction of the parotid salivary gland. What nerve increases its secretion?

a. N. petrosus minor
b. N. auricularis minor
c. N. auricularis major
d. N. petrosus major
e. N. petrosus profundus

59. After examination, the signs of acromegaly were detected in a patient. What endocrine gland is

involved in this pathological process?
a. Adenohypophysis
b. Thyroid gland
c. Adrenal glands
d. Pineal gland
e. Neurohypophysis

60. 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. P. vulgaris
d. E) coli
e. S. enteritidis

61. The patient's ability to perceive a bitter taste is disturbed. What lingual papillae are affected in this case?
a. Papillae filiformes
b. Papillae conicae
c. Papillae foliatae
d. Papillae fungiformes
e. Papillae vallatae

62. Name the change in the nucleotide sequence of a gene that is associated with the rotation of a certain DNA segment by 180°.
a. Translocation
b. Inversion
c. Duplication
d. Deletion
e. Repair

63. 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. Aethimizolum (Methylamide)
b. Omeprazole
c. Naloxone
d. Mesaton (Phenylephrine)
e. Nitrazepam

64. During the extraction of a carious tooth, the dental surgeon found a gray-pink soft-elastic nodule 1.3 cm in diameter in the area of the dental root. Microscopically, the nodule is represented by granulation tissue with lymphocytes, plasma and mast cells, macrophages, xanthoma cells, and fibroblasts. What pathological neoplasm can be suspected in this case?
a. Granulating periodontitis
b. Eosinophilic granuloma
c. Simple granuloma
d. Cystogranuloma
e. Epithelial granuloma

65. A dentist used a solution of potassium permanganate as an antiseptic. This preparation has a bactericidal effect because of:
a. Atomic oxygen
b. Manganese oxide
c. Potassium
d. Potassium oxide
e. Potassium hydroxide

66. 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 L5 vertebra and the base of the sacrum
b. Between Th12 and L1 vertebrae
c. Between L1 and L2 vertebrae
d. Between Th11 and Th12 vertebrae
e. Between L3 and L4 vertebrae

67. 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. Hemorrhagic
b. Suppurative
c. Croupous fibrinous
d. Diphtheritic fibrinous
e. Serous

68. The patient's leukogram is as follows: leukocytes --- $14 · 10^{9$/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. Chronic lymphocytic leukemia
b. Lymphoblastic leukemia
c. Chronic myeloid leukemia
d. Neutrophilic leukocytosis
e. Myeloblastic leukemia

69. Serological diagnostics of influenza requires the measurement of an increase in the titer of antibodies to the pathogen in the patient's blood serum. How many times should the titer of antibodies in the paired serum samples increase for the result to be considered credible?

a. 2 times
b. 4 times or more
c. By half
d. ---
e. 3 times

70. A 25-year-old patient has been hospitalized with the diagnosis of syphilis. After testing, it was determined that the patient was hypersensitive to bicillin-5. What can be used as a replacement of this drug?

a. Levomycetin (Chloramphenicol)
b. Biseptol (Co-trimoxazole)
c. Streptomycin
d. Ampicillin
e. Tetracycline

71. 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. All the germ layers
b. Mesoderm
c. Endoderm
d. Ectoderm
e. Endoderm and mesoderm

72. Replication is one of the reactions of matrix synthesis. What new molecule is formed from a DNA molecule in the process of replication?

a. rRNA
b. Pro-mRNA
c. tRNA

d. mRNA
e. DNA

73. Calcification of the intercellular substance of bone tissue is accompanied by the deposition of hydroxyapatite crystals along the collagen fibers. This process requires the presence of alkaline phosphatase in the intercellular matrix. Which of the following cells most likely produces this enzyme?
a. Chondroblast
b. Osteoblast
c. Osteocyte
d. Osteoclast
e. Chondrocyte

74. At autopsy, section of the right ovary shows a round lesion 2.5 cm in diameter with a clear serous fluid, surrounded by a smooth glistening membrane. Which of the following macroscopic lesions best represents the autopsy findings?
a. Cyst
b. Ulcer
c. Infiltrate
d. Nodule with central necrosis
e. Nodule

75. In histogenesis of bone tissue, two ways of its development are possible. What stages are not characteristic of membranous osteogenesis?
a. Replacement of reticulofibrous bone tissue with lamellar bone tissue
b. Formation of epiphyseal centers of ossification
c. Formation of osteogenic buds within mesenchyme
d. Osteoid stage
e. Formation of reticulofibrous bone

76. A 50-year-old patient suddenly developed headache, dizziness, and nausea. Blood pressure --- 220/110 mm Hg. During the intravenous administration of a 0.1% hygronium solution (trepirium iodide), the patient's condition improved. What is the mechanism of action of this drug?
a. Angiotensin-converting enzyme blockade
b. Activation of alpha_2-adrenoceptors
c. Blockade of beta_1-adrenoceptors
d. Blockade of ganglionic nicotinic receptors
e. Blockade of Ca^·++ channels