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ТЕСТОВЫЕ ЗАДАНИЯ ПО ПАТОФИЗИОЛОГИИ

методическое пособие для студентов

TESTS ON PATHOPHYSIOLOGY

manual for students

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Методическое пособие предназначено для подготовки студентов, обучающихся на языке-посреднике в рамках учебного курса патофизиологии. Пособие содержит тестовые вопросы с вариантами ответов для контроля знаний в рамках учебных модулей и экзаменов по патофизиологии.

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TEST # 1

GENERAL TERMS OF PATHOPHYSIOLOGY

1. What is etiology?
a. a study of mechanisms of diseases
b. a study of causes of diseases
c. a study of stages of diseases
2. Typical pathologic processes are the following except…
a. fever b. hypoxia c. inflammation d. gastric ulcer
3. Typical pathologic processes are the following except…
a. hypoxia b. inflammation c. atherosclerosis
4. The sequence of events that take place from the time of initial injury until the expression of a disease is defined as…
a. pathogenesis b. etiology c. reactivity
5. The specifity of disease is determined by…
a. risk factors b. a cause of a disease c. reactivity of the body
6. Pathophysiology deals with...
a. the altered structure of tissues during diseases
b. functional changes that occur with disease
c. chemical processes in healthy cell
7. Intrinsic etiologic factor is…
a. bacteria b. poison c. inheritance
8. Definition of health by WHO…
a. state of complete physical, and social well-being
b. state of complete physical, mental, and social well-being and not merely the absence of disease
c. mental and social well-being and not merely the absence of disease
9. Which statement is correct?
a. the immaturity of the infant increases the ability to adapt to the changes in health status
b. the decline in functional reserve in the elderly increases the ability to adapt to the changes in health status
c. adaptation is less effective when changes in health status occur suddenly rather than gradually
10. A complex of events that reinforces itself through a feedback loop toward greater instability is known as…
a. etiology b. vicious circle c. pathogenesis d. adaptation
11. Which statement is wrong?
a. a symptom is noted by the person with a disorder
b. a sign is a manifestation that is noted by an observer
c. a syndrome is a specific sign of a disease
12. A subjective complaint that is noted by the person with a disorder …
a. a symptom b. a sign c. typical pathologic processes
13. A manifestation that is noted by an observer
a. a symptom b. a sign c. typical pathologic processes
14. A compilation of symptoms that is characteristic of a disease
a. a syndrome b. a sign c.typical pathologic processes

15. A period during which there is a decrease in symptoms…
a. complication b. remission c. syndrome
16. Remission is a…
a. lesions or impairments that follow or are caused by a disease
b. aggravation of symptoms and severity of the disease
c. temporal relief of disease
17. The period when the disease is not clinically evident is known as…
a. the latent stage b. incubation period c. both are correct
18. The period of the disease when general, nonspecific symptoms are present…
a. the peak stage b. the latent stage c. the prodromal stage
19. Inflammatory diseases, allergic, neoplasia... is a classification according to:
a. etiologic factor b. pathogenesis c. affected organ or organ system
20. Infectious, congenital, traumatic diseases...is a classification according to:
a. etiologic factor b. pathogenesis c. affected organ or organ system
21. Reactivity is defined as a feature that determines...
a. etiologic factor
b. differential diagnosis
c. quantitative and qualitative pattern of reaction
22. Factors that predispose to a particular disease…
a. are referred to as risk factors
b. are referred to as typical pathologic processes
c. are referred to as intrinsic etiologic factors
23. Operated stomach is an example of…
a. incomplete recover
b. complete recover
c. exacerbation

STRESS AND ADAPTATION

1. The alarm stage of the stress reaction is characterized by…
a. decreased cortisol levels
b. stimulation of the sympathetic nervous system and the HPA axis
c. systemic tissue damage
2. The resistance stage of the stress reaction is characterized by…
a. maintained cortisol levels
b. stimulation of the sympathetic nervous system
c. signs of "wear and tear"
3. Signs of "wear and tear" are present during…
a. the alarm stage of the stress
b. the resistance stage of the stress
c. the exhaustion stage of the stress
4. Brief and controllable periods of stress are known as…
a. distress b. eustress c. superstress
5. The cerebral cortex is involved in stress response with …

a. emotional components
b. vigilance, cognition, and focused attention
c. ANS activity and modulated skeletal muscle tone
6. Which component of the stress response modulates mental alertness, ANS activity and skeletal muscle tone?
a. the limbic system b. the thalamus c. the reticular activating system
7. Central to the neural component of the neuroendocrine response to stress is …
a. the hypothalamus b. cerebral cortex c. the locus ceruleus
8. The locus ceruleus is populated with neurons that produce…
a. cortisol b. norepinephrine c. acetylcholine
9. Central to the endocrine component of the neuroendocrine response to stress is…
a. corticotropin-releasing factor
b. norepinephrine
c. adrenocorticotropic hormone
10. Physiologic effect of the corticotropin-releasing factor is…
a. a decrease in insulin release and an increase in glucagon release
b. increased sodium absorption by the kidney
c. stimulation of ACTH release from anterior pituitary
11. Among physiologic effects of the cortisol is…
a. increased activity of neurons in locus ceruleus
b. a decrease in immune cells and in inflammatory mediators
c. vasoconstriction of blood vessels
11. Among physiologic effects of the cortisol is…
a. increased activity of neurons in locus ceruleus
b. potentiation of actions of epinephrine and glucagon
c. relaxation of bronchial smooth muscle
12. Among physiologic effects of catecholamines is…
a. increased glycogenolysis b. decreased glyconeogenesis c. decreased proteolysis
13. Among physiologic effects of catecholamines is…
a. decrease in heart rate
b. decrease in cardiac contraction
c. relaxation of bronchial smooth muscle
14. Which hormones are decreased in stress?
a. thyroid -stimulating hormone
b. reproductive hormones
c. both
15. The basic meaning of stress response is…
a. an attempt to adapt to stimuli
b. facilitation of vegetative functions
c. inhibition of cognition and attention

CELL INJURY AND DEATH

1. Cellular membranes and intercellular connections are primarily damaged during…
a. biologic injury b. mechanical injury c. injury from nutritional imbalances

2. Coagulation of blood vessels and tissue proteins occurs…
a. with intense heat b. with biologic injury c. with lead toxicity
3. Disruption of impulses in excitable tissues occurs…
a. during chemical injury b. during biological injury c. during electrical injury
4. Resistance to electrical current varies from the greatest to the least in the following order…
a. bone, tendons, skin, muscles, blood, nerves
b. nerves, blood, bone, fat, tendons, skin
c. muscles, skin, bone, fat, tendons, nerves
5. Radiation affects cells by causing…
a. ice crystal formation b. ionization of molecules and atoms in the cell
c. disturbance of intercellular connections
6. Ionizing radiation affects cells by causing…
a. disruption of the osmotic and ionic balance b. production of free radicals c. deficiency of a single nutrient or vitamin
7. Nonionizing radiation includes the following except…
a. ultrasound b. laser energy c. gamma rays
8. Which of injurious agents are able to replicate and continue their injurious effects?
a. mechanical forces b. ionizing radiation c. biological factors
9. Incorporation into cells DNA synthetic machinery is the feature of…
a. viruses b. bacteria c. lead
10. Effects of free radicals include…
a. lipid peroxidation b. oxidative modification of proteins c. DNA effects d. all of them
11. Oxidative stress is a condition in which…
a. the generation of antioxidants exceeds the ability to neutralize them
b. the generation of free radicals exceeds the ability to neutralize them
c. the generation of free acids exceeds the ability to neutralize them
12. Which statement is correct?
a. free radicals are not produced in nondamaged cells
b. all intracellular proteins are oxidation-sensitive
c. mitochondria are a primary site of production of free radicals
13 Defenses against free radicals include...
a. superoxide dismutase b. catalase c. both
14. Water soluble cytosolic chain-breaking antioxidant is...
a. vitamin C b. vitamin E c. glutamine
15. The major lipid-soluble antioxidant present in all cellular membranes is...
a. vitamin E b. vitamin B c. asparagin
16. The main source of free radicals is...
a. oxygen b. hydrogen c. carbogen
17. The net result of lipid peroxidation is the following except…
a. increased membrane fluidity
b. Na+ and Ca++ leakage out of the cell
c. loss of membrane protein activities

18. One of the earliest effects of reduced ATP is...
a. the failure of the energy-dependent sodium/potassium membrane pump
b. release of hydrolytic enzymes c. a continued loss of ribonucleic acid
19. What happens with impaired function of K\Na pump?
a. sodium leaves the cell b. sodium and water accumulate in the cell
c. calcium leaves the cell
20. Which enzymes are activated with the increased intracellular calcium level?
a. the phospholipases responsible for damaging the cell membrane
b. proteases that damage the cytoskeleton and membrane proteins
c. endonucleases that fragment chromatin
d. a and b
e. a, b, c
21. Cell adaptation to the injury includes…
a. acidosis b. activation of anaerobic ATP resysthesis c. increased membrane permeability
22. Cell adaptation to the injury includes…
a. alkalosis b. activation of the antioxidative systems c. hyperhydration of the cell
23. Cell adaptation to the injury includes the following except…
a. activation of buffer systems b. activation of hydrolases c. decrease of the cell functional activity
24. Cell adaptation to the injury includes…
a. activation of anaerobic ATP resysthesis in the cytosol
b. increase of the cell functional activity
c. hypotrophy
25. Cell adaptation to the injury includes…
a. aregeneration b. activation of the antioxidative systems c. inhibition of buffer systems
26. Apoptotic cell death is characterized by...
a. uncontrolled autodigestion of cell components
b. activation of endogenous enzymes-caspases
c. cell swelling
27. Apoptotic cell death is characterized by…
a. controlled energy dependent autodigestion of cell components b. inactivation of caspases c. initiation of the inflammatory response
28. Apoptotic cell death is characterized by…
a. relaxation of the cytoskeletal actin
b. swelling of the cytoplasmic organelles
c. disruption and clumping of nuclear DNA
29. Which statement is correct?
a. in the intrinsic pathway of apoptosis, increased mitochondrial permeability promotes the release of cytochrome C
b. in the extrinsic pathway of apoptosis, increased mitochondrial permeability is the initiating event

c. in the mitochondria-mediated pathway of apoptosis, members of the tumor necrosis factor superfamily bind to cell-surface «death receptors»
30. Example of apoptosis linkage to pathologic processes is…
a. destruction of cells during embryonic development
b. hormonedependent involution of tissues
c. suppression of apoptosis in the growth of cancers
31. Necrosis involves...
a. regulated enzymatic digestion of cell components
b. energy dependent activation of caspases
c. release of the products of cell death into the intracellular space
32. Necrosis involves…
a. Unregulated enzymatic digestion of cell components
b. Condensation of the cytoplasmic organelles c. Cell shrinkage

GENERAL MECHANISMS OF HYPOXIA

1. Extrinsic hypoxia can result from…
a. an inadequate amount of oxygen in the air
b. anemia c. lung edema
2. Respiratory hypoxia can result from…
a. eschimia b. bronchial astma c. eritrocytosis
3. Circulatory hypoxia can result from…
a. thrombosis b. bronchitis c. an inadequate amount of oxygen in the air
4. Impaired oxygen delivery to the tissue is the characteristic of...
a. Ischemia
b. Extrinsic hypoxia
c. Respiratory hypoxia
5. Arterial oxygen tension (PaO_2) and content (CaO_2) normal, the venous oxygen tension is reduced in…
a. respiratory hypoxia
b. circulatory hypoxia
c. anemic hypoxia
6. Arterial oxygen tension (PaO_2) and content (CaO_2) normal, the venous oxygen tension is increased in…
a. respiratory hypoxia
b. anemic hypoxia
c. histotoxic hypoxia
7. Tachycardia, polycytemia are…
a. the result of hypoxic cell injury
b. compensatory reactions
c. not specific signs of hypoxia
8. Immediate adaptive changes seen in hypoxia are the following except…
a. angiogenesis b. hyperventilation c. peripheral vasoconstriction
9. Long-term adaptation to hypoxia involves…
a. hypoventilation b. ascitis c. cardiac hypertrophy

10. Peripheral arterial chemoreceptors are primary sensors of…
a. Hypoxemia b. Hypercapnia c. Acidosis d. Alkalosis
11. Central chemoreceptive elements respond to changes in…
a. Amount of dissolved oxygen b. Hydrogen ion concentration c. Amount of bound oxygen
12. Blood centralization reaction is characterized by…
a. vasodilation in skin, skeletal muscle and the splanchnic area
b. vasodilation of coronary and skeletal muscle vessels
c. vasodilation of coronary vessels and vasoconstriction in skin, and the splanchnic area
13. Which statement is correct?
a. highly vulnerable to hypoxia are proximal tubule epithelium cells
b. relatively resistant to hypoxia are neurons
c. highly vulnerable to hypoxia are cardiac myocytes
d. all are correct
e. a and c are correct
14. Dissolved oxygen molecules are registered as…
a. CaO_2 b. PaO_2 c. SaO_2
15. Which statement is correct?
a. the amount of dissolved oxygen in the plasma is determined by hemoglobin content
b. the amount of dissolved oxygen in the plasma is determined by lung architecture
c. alveolar PO_2 is determined by PaO_2
16. Determinants of SaO_2 for a given PaO_2 are…
a. hemoglobin content, erythrocytes number
b. temperature, pH c. alveolar ventilation, gas diffusion
17. Oxygen dissociation curve describes…
a. the relationship between $PaCO_2$ and PaO_2.
b. the relationship between PvO_2 and PaO_2.
c. the relationship between SaO_2 and PaO_2.
18. Oxygen content is determined almost entirely by …
a. alveolar ventilation, gas diffusion
b. hemoglobin content and SaO_2
c. the amount of dissolved oxygen
19. Determine the type of hypoxia if: $PaO_2\downarrow$, $SaO_2\downarrow$ $CaO_2\downarrow$?
a. respiratory b. circulatory c. anemic
20. Determine the type of hypoxia if: $PaO_2\rightarrow$,$SaO_2\rightarrow$, $CaO_2\downarrow$?
a. respiratory b. circulatory c. anemic
21. Determine the type of hypoxia if: $PaO_2\rightarrow$, $SaO_2\rightarrow$, $CaO_2\rightarrow$?
a. respiratory b. circulatory c. Anemic

ACID-BASE DISORDERS

1. pH of extracellular body fluids is maintained within range of ...
a. 7.3 -7.35 b. 7.35 - 7.45 c. 7.4 -7.5

2. Addition or loss of nonvolatile acid or alkali to or from the extracellular fluid is called...
a. metabolic disorder b. respiratiry disorder c. decompensated disorder
3. Metabolic acidosis is...
a. an elevation of pH b. a decrease in HCO_3^- levels c. increased HCO_3^- levels
4. Metabolic alkalosis is a...
a. decrease in $HCO3^-$ levels b. reduction in pH c. increased HCO_3^- levels
5. Alterations in the pCO_2 are called...
a. respiratory disorders b. metabolic disorders c. compensated disorders
6. An increase or decrease in alveolar ventilation involves...
a. metabolic disorders b. disadaptive state c. respiratory disorders
7. Respiratory alkalosis together with a primary metabolic acidosis is…
a. a result of overproduction of bases
b. compensatory increase in ventilation
c. the sign of severity of the disease
8. Which statement is correct?
a. the lungs can compensate for respiratory acidosis
b. the kidneys can compensate for metabolic acidosis that occurs because of renal failure
c. renal mechanisms can be used to compensate for respiratory-induced changes in pH
9. Which statement is correct?
a. the kidneys can compensate for metabolic acidosis that occurs because of renal disease
b. the lungs can compensate for respiratory acidosis that is caused by lung disease
c. the body can use respiratory mechanisms to compensate for metabolically induced changes in acid-base balance
10. Metabolic acidosis can be caused by...
a. increased production of nonvolatile metabolic acids
b. increased acid secretion by the kidney
c. excessive return of bicarbonate by the kidney
11. Metabolic acidosis can be caused by…
a. decreased production of nonvolatile metabolic acids
b. increased acid secretion by the kidney
c. excessive loss of bicarbonate
12. Which statement is correct?
a. acute lactic acidosis is the most common type of respiratory acidosis
b. lactic acidosis develops when there is excess production of lactic acid
c. lactic acid is produced by the aerobic metabolism of glucose
13. Which statement is correct?
a. acute lactic acidosis is one of the most common types of metabolic acidosis
b. lactic alkalosis develops when there is excess production of lactic acid
c. respiratory acidosis develops when there is diminished lactic acid removal from the blood
14. An overproduction of ketoacids occurs...

a. when carbohydrate stores are adequate
b. when the body uses available carbohydrates as a fuel
c. when fatty acids are mobilized and ketone production exceeds tissue use
15. Ketoacidosis develops...
a. when carbohydrate stores are inadequate
b. when the body can use available carbohydrates as a fuel
c. when fatty acids are not mobilized from adipose tissue
16. Which statement is wrong?
a. kidney disease is the most common cause of chronic metabolic acidosis
b. the kidneys normally conserve HCO_3^- and secrete H+ ions into the urine
c. in renal failure, there is increase of glomerular and tubular function
17. Which statement is correct?
a. skeletal diseases are the most common cause of chronic metabolic acidosis
b. the liver normally conserves HCO_3^- and secretes H^+ ions
c. in renal failure, there is retention of nitrogenous wastes and metabolic acids
18. Which statement is wrong?
a. the respiratory system compensates for a decrease in pH by increasing ventilation
b. manifestations related to respiratory compensatory mechanisms occur early in the course of metabolic acidosis
c. in situations of acute metabolic acidosis, the respiratory system compensates by decreasing ventilation
19. Manifestations of metabolic acidosis include...
a. increased neuronal excitability b. declined level of consciousness
c. decreased ventilation
20. Manifestations of metabolic acidosis include...
a. depressed neuronal excitability and neural activity b. cardiac contractility and cardiac output increases c. the heart becomes more responsive to catecholamines
21. Which statement is wrong?
a. metabolic alkalosis exists with a loss of H^+ ions, net gain in HCO_3^- ions
b. metabolic alkalosis is the second most common acid-base disorder
c. metabolic alkalosis is characterized by a plasma pH below 7.35
22. The cause of metabolic alkalosis is:
a. decreased ventilation b. vomiting c. diabetus mellitus
23.The cause of metabolic alkalosis in hospitalized patients is…
a. removal of gastric secretions through use of nasogastric suction
b. pneumonia c. physical activity
24. Plasma pH above 7.45, plasma HCO_3^- above 29 mmol/L and base excess above 3 mmol/L are characteristics of...
a. metabolic alkalosis b. metabolic acidosis c. respiratory acidosis
25. The kidney regulates pH by…
a. excreting excess H^+ ions b. reabsorbing or regenerating Ca+ ions
c. excreting glucose
26. Respiratory acidosis occurs as a result of…
a. an acute or chronic conditions that impair effective alveolar ventilation

b. increased respiratory drive c. kidney disease
27. Respiratory acidosis occurs as a result of…
a. an acute conditions that impair liver function b. decreased respiratory drive c. increased ventilation
28. Plasma pH below 7.35 and an arterial pCO_2 above 50 mm Hg refers to…
a. metabolic acidosis b. respiratory acidosis c. respiratory alkalosis
29. An increase in CO_2 production can result from…
a. fever b. sepsis c. burns d. All are correct
30. Which statement is wrong?
a. elevated levels of CO_2 produce vasodilation of cerebral blood vessels
b. irritability, muscle twitching can occur with acute respiratory acidosis
c. decreased pCO_2 can occur with respiratory acidosis
31. Which statement is wrong?
a. respiratory alkalosis may occur as the result of central stimulation of the medullary respiratory center b. vomiting can cause respiratory alkalosis
c. mechanical ventilation can cause respiratory alkalosis
32. The pH above 7.45, arterial pCO_2 below 35 mm Hg are manifestations of…
a. respiratory alkalosis b. respiratory acidosis c. metabolic acidosis
33. Which statement is wrong?
a. the signs of respiratory alkalosis are associated with hyperexcitability of the nervous system
b. the signs of respiratory alkalosis are associated with a decrease in cerebral blood flow
c. a decrease in the CO_2 content of the blood causes dilation of cerebral blood vessels
34. The intratubular buffer system is…
a. the hemoglobin buffer system b. the ammonia buffer system
c. the protein buffers

DISORDERS OF WATER AND ELECTROLYTE BALANCE

1. The fluid in the intracellular compartment constitutes…
a. 60% of body weight. b. 20% of body weight c. 40% of body weight
2. The fluid in the vascular compartment constitutes…
a. 14% of body weight b. 24% of body weight c. 4% of body weight
3. The interstitial fluid compartment constitutes…
a. 25% of body weight. b. 5% of body weight c. 15% of body weight.
4. The ICF volume is regulated by…
a. organic compounds and by solutes that move between the ECF and ICF
b. solutes that move between the ECF and ICF
c. acids and bases that move between the ECF and ICF
5. Which statement is correct?
a. the membrane in most cells is freely permeable to proteins
b. the membrane in most cells is freely permeable to water
c. the membrane in most cells is freely permeable to glucose
6. Situations that impair the Na^+/K^+-ATPase pump causes

a. cell shrinkage b. cell swelling c. accumulation of potassium in the cell
7. The transfer of water between the vascular and interstitial compartments occurs …
a. at the arterioles level and is governed by osmotic forces
b. at the capillary level and is governed by the Starling forces
c. at the venules level and is governed by oncotic forces
8. The capillary filtration pressure…
a. pushes water out of the cell into the interstitial spaces
b. pushes water out of the capillary into the interstitial spaces
c. pulls water into the capillary out of the interstitial spaces
9. The capillary colloidal osmotic pressure…
a. pulls water into the interstitial spaces
b. pushes water out of the capillary
c. pulls water back into the capillary
10. The tissue colloidal osmotic pressure…
a. pulls water out of the interstitial spaces into the capillary
b. pulls water out of the capillary into the interstitial spaces
c. pushes water out of the cell
11. The capillary filtration pressure…
a. reflects the arterial and venous pressures
b. reflects the precapillary and postcapillary resistances
c. both are correct
12. A rise in arterial or venous pressure…
a. increases capillary pressure
b. decreases capillary pressure
c. decreases capillary permeability
13. A decrease in arterial resistance or increase in venous resistance…
a. increases capillary pressure
b. decreases capillary pressure
c. decreases oncotic pressure
14. An increase in arterial resistance or decrease in venous resistance…
a. decreases capillary pressure
b. increases capillary pressure
c. increases oncotic pressure
15. The capillary colloidal osmotic pressure is…
a. the osmotic pressure generated by potassium
b. the osmotic pressure generated by the plasma proteins
c. the osmotic pressure generated by the plasma acids
16. Edema can be defined as…
a. swelling produced by expansion of the interstitial fluid volume
b. swelling produced by expansion of cellular mass
c. swelling produced by expansion of proliferating tissue
17. Edema becomes evident when the interstitial volume has been increased by…
a. 0.5 to 1 L. b. 2.5 to 3 L c. 1,5 to 1,7 L

18. The physiologic mechanisms that contribute to edema formation include factors that…
a. increase the capillary filtration pressure
b. increase the capillary colloidal osmotic pressure
c. decrease capillary permeability.
19. The physiologic mechanisms that contribute to edema formation include factors that…
a. decrease the capillary filtration pressure
b. decrease the capillary colloidal osmotic pressure
c. decrease capillary permeability
20. The physiologic mechanisms that contribute to edema formation include factors that…
a. decrease the capillary filtration pressure
b. increase the capillary colloidal osmotic pressure
c. increase capillary permeability
21 The physiologic mechanisms that contribute to edema formation include factors that…
a. increase the capillary colloidal osmotic pressure
b. decrease capillary permeability
c. produce obstruction to lymph flow
22. The localized edema occurs with…
a. allergic or inflammatory conditions b. congestive heart failure
c. kidney diseases
23. Thrombophlebitis produces…
a. generalized edema b. localized edema c. ascytis
24. The release of histamine causes…
a. dilation of the precapillary sphincters and arterioles b. increase of oncotic pressure
c. increase in osmotic pressure
25. Generalized edema is common in conditions such as…
a. inflammations b. congestive heart failure c. thrombophlebitis
26. Decreased sodium and water excretion by the kidneys leads to…
a. a decrease in capillary volume and pressure
b. an increase in extracellular volume, with an increase in capillary volume
c. the movement of fluid into the capillary
27. Which statement is correct?
a. plasma albumin has approximately twice lesser osmotically active molecules as globulin
b. plasma albumin has almost six times lesser osmotically active molecules as fibrinogen
c. the concentration of albumin is greater than that of the globulins and fibrinogen
28. Which statement is wrong?
a. albumin has approximately twice as many osmotically active molecules as globulin
b. albumin has almost six times as many osmotically active molecules as fibrinogen
c. the concentration of albumin is lower than that of the globulins and fibrinogen

29. In persons with severe liver failure…
a. impaired synthesis of albumin results in the increase in colloidal pressure
b. impaired synthesis of albumin results in a decrease in colloidal pressure
c. impaired synthesis of bile results in a decreased vascular permeability
30. Edema due to a decrease in capillary colloidal pressure…
a. tends to affect tissues in dependent parts of the body
b. tends to affect the face as well as the legs and feet
c. tends to affect lungs
31. Among the conditions that increase capillary permeability are…
a. burn injury, inflammation, and immune responses
b. diarrhea and vomiting
c. anemias and polycytemias
32. Which statement is correct?
a. edema of the brain or lungs is an acute, life-threatening condition
b. edema of the low extremities is an acute, life-threatening condition
c. edema of the brain or lungs is not the life-threatening condition.
33. Which statement is wrong?
a. diuretic therapy commonly is used to treat edema
b. albumin can be administered intravenously to treat edema
c. red blood cells can be infused to treat edema
34. Which statement is correct?
a. albumin can be administered intravenously to treat edema
b. folic acid can be used to treat edema
c. vasopressin can be administered to treat edema
35. Which statement is correct?
a. diuretic therapy is used to treat edema
b. desmopressin is used to treat edema
c. histamine is used to treat edema
36. The extracellular fluid contains…
a. large amounts of sodium and chloride
b. large amounts of bicarbonate
c. large quantities of potassium, magnesium, phosphate
37. The intracellular fluid contains…
a. large amounts of calcium
b. large amounts of sodium, chloride and phosphate
c. large amounts of potassium.
38. Which statement is correct?
a. it is the concentration of potassium that controls ECF osmolality
b. it is the concentration of sodium that controls ECF osmolality
c. it is the concentration of calcium that controls ECF osmolality
39. The mechanism protecting the ECF volume:
a. alterations in hemodynamic variables b. alterations in potassium balance
c. alterations in calcium balance

40. The mechanism protecting the ECF volume:
a. alterations in potassium balance b. alterations in sodium balance
c. alterations in glucose balance
41. Isotonic disorders usually are …
a. confined to the ECF compartment b. confined to the ICF compartment
c. distributed between the ECF and ICF
42. Isotonic disorders produces…
a. a contraction or expansion of vascular fluids b. a contraction or expansion of cellular fluids c. a contraction or expansion of muscles
43. Body needs for sodium usually can be met by…
a. 500 mg/day b. 1000 mg/day c. 50 mg/day
44. Extracellular sodium content is …
a. 13,5-14,5 mEq/L b. 135 - 145 mEq/L c. 1350-1450 mEq/L
45. Which statement is not correct?
a. sodium functions mainly in regulating cellular volume
a. sodium functions mainly in regulating extracellular volume
b. sodium functions mainly in regulating vascular volume
46. The rate at which the kidney excretes or conserves sodium is…
a. coordinated by the sympathetic nervous system
b. coordinated by the parasympathetic nervous system
c. coordinated by the central nervous system
47. The rate at which the kidney excretes or conserves sodium is…
a. coordinated by renin-angiotensin-aldosterone system
b. coordinated by the parasympathetic nervous system
c. coordinated by the central nervous system
48. Aldosterone acts at the level of the cortical collecting tubules of the kidneys…
a. to increase potassiun reabsorption b. to increase calsium reabsorption
c. to increase sodium reabsorption
49. There are two main physiologic mechanisms that assist in regulating body water…
a. thirst and antidiuretic hormone b. sympathetic and parasympathetic nervous system c. insulin and glucagon
50. Which statement is correct?
a. thirst is primarily a regulator of water intake and ADH a regulator of water output
b. thirst and antidiuretic hormone are regulators of sodium balance c. thirst and antidiuretic hormone are regulators of water output
51. The stimulus for true thirst is…
a. cellular hyperhydration b. an increase in extracellular osmolality
c. an increase in blood volume
52. Stimule for true thirst based on water need:
a. cellular hyperhydration b. a decrease in blood volume c. decrease in serum osmolality
53. ADH is synthesized in the…
a. supraoptic and paraventricular nuclei of the hypothalamus b. paratyroid glands c. neurohypophysis

54. ADH exerts its effects through …
a. three types of vasopressin (V) receptors b. V1 and V2 receptors
c. V receptors, which are located in skeletal muscle
55. Vasopressin V1 receptors are located in…
a. the vascular smooth muscle b. the tubular cells of the cortical collecting duct c.the bone marrow
56. Vasopressin V2 receptors are located in…
a. the vascular smooth muscle b. tubular cells of the cortical collecting duct c. the liver cells
57**.** Isotonic fluid volume disorders are brought about by…
a. proportionate changes in both sodium and water
b. decreases of sodium content
c. decreases in water content
58**.** Hypotonic hyponatremia causes…
a. cellular swelling b. cellular shrinkage c. vascular overloading
59. The manifestations of hypotonic hyponatremia are largely related to…
a. the high concentration of sodium in ECF
b. the decreased serum osmolality
c. the movement of water from the ICF to the ECF compartment
60. The manifestations of hypernatremia are caused by…
a. the extracellular fluid loss b. cellular swelling c. vascular overloading
61. Hypernatremia leads to…
a. the cellular dehydration b. the cellular swelling
c. the increased extracellular volume

TEST # 2

INFLAMMATION

1. The inflammation is:
a. the response of tissues to damage;
b. an increase of the pathogens propagation in the organism;
c. the increase of human body temperature
2. Beneficial effects of the local inflammation include the following except…
a. dilution of toxins; b. stimulation of immune response; c. swelling;
d. entry of antibodies
3. The systemic effects of acute inflammation include:
a. tumor; b. dolor; c. edema; d. hematological changes
4. The increased erythrocyte sedimentation rate (ESR) is a consequence of…
a. the decrease of negative charge on the erythrocytes;
b. changes in protein ratio in peripheral blood;
c. an increase of the plasma viscosity; d. all are correct
5. The initial phase of inflammation is…
a. vascular stage; b. proliferation; c. alteration
6. The rubor in the acute inflammation is due to the…

a. fever; b. hypoxia;
c. accumulation of fluid in the extra vascular space;
d. dilation of small blood vessels within the damaged area
7. The harmful effects of inflammation include the following except…
a. distruction of normal tissues; b. swelling;
c. hypersensitivity reactions; d. entry of antibodies
8. The local manifestations of acute inflammation were initially described by:
a. Mechnikov; b. Galen; c. Celsus
9. Tissue damage occurs in…
a. alteration b. vascular stage of inflammation c. proliferation
10. Primary alteration is due to the…
a. direct action of the pathogens;
b. increased vascular permeability;
c. enzymes and mediators released into the extracellular space
11. Secondary alteration is due to the…
a. direct action of pathogenic factors;
b. increased vascular permeability;
c. enzymes and mediators released into the extracellular space
12. The physical agents inducing alteration are the following except…
a. trauma; b. radiation; c. burns; d. dead tissues
13. Tissue damage could be induced by:
a. histamine and serotonin released from mast cells;
b. prostaglandins, leukotrienes released from phagocytes;
c. lysosomal enzymes, radicals and nitric products released from neutrophils, macrophages, and other inflammatory cells;
d. complement system activation; e. bradykinine
14. The mediators involved in increased vascular permeability are the following except…
a. histamine; b. serotonin; c. kinines; d. noradrenaline
15. A swelling in acute inflammation is due to the…
a. accumulation of fluid in the extra vascular space; b. physical mass of the inflammatory cells migrating into the area; c. vessel vasoconstriction
16. The extravascular factor inducing the venous (passive) hyperemia is…
a. activation of proteins with the coagulate activities (prothrombine, fibrinogen); b. an increase of the blood viscosity as a result of exudation;
c. an exudate
17. The intravascular factors inducing the venous hyperemia are the following except…
a. activation of the pro-coagulative proteins (prothrombine, fibrinogen);
b. an increase of the blood viscosity as a result of exudation;
c. an exudate
18. The manifestations of an acute inflammatory response include…
a. infiltration with macrophages, lymphocytes, and fibroblasts;
b. vasodilation, increased capillary permeability and influx of neutrophils;
c. antibody synthesis; d. phagocytosis; e. all are correct
19. The margination is…
a. the aggregation of leukocytes along the vessel walls;

b. the release of mediators and enzymes from the leukocytes;
c. an increased erythrocyte sedimentation rate.
20. Margination occurs as:
a. leukocytes passage through the capillary walls;
b. migration of the leukocytes to the tissue spaces;
c. leukocytes movement along the periphery of blood vessels.
21. The chemical mediator known to induce the pain…
a. bradikynine; b. histamine; c. heparin
22. The chemotactic factors for neutrophils are the following except…
a. bacterial components e.g. simple peptides;
b. C3a, C5a components of the complement system;
c.endogenous metabolite of arachidonic acid -leukotriene B4; d. heparin
23. Histamine induces:
a. complement activation; b. increased dilatation and permeability of blood vessels; c. vasoconstriction; d. wound healing
24. There is the following sequence of events in the cellular stage of inflammation…
a. margination, emigration, chemotaxis, phagocytosis;
b.chemotaxis, margination, emigration, phagocytosis ;
c.chemotaxis, emigration, margination, phagocytosis ;
d. phagocytosis, chemotaxis, margination, emigration.
25. Cells, which are the main sources of lysosomal enzymes…
a. mast cells and basophils; b. fibroblasts; c. lymphocytes; d. neutrophils and macrophages
26. The phagocytosis is the process of…
a. the movement of leukocytes from the vessel lumen into the damaged area;
b. release of lysosomal enzymes to the extracellular space; c. ingestion of solid particles; d. the passage of white blood cells across the vessel wall
27. Oxygen-dependent mechanisms of phagocytosis involve…
a. hydrogen peroxide; b. superoxide anions (O_2^-);
c. hydroxyl radicals (^-OH); d. all are correct
28. Oxygen-independent mechanisms of phagocytosis include…
a. the NADPH oxidase system; b. myeloperoxidase (MPO;) c. none of them
29. The metabolic burst is…
a. release of arachidonic acid products (prostaglandins, leukotrienes) from phagocytes;
b. an increased metabolism in phagocytes; c. generation of toxic oxygen and nitrogen products in phagocytes; d. all are correct
30. The opsonization is the process of…
a. the antigen presentation; b. enhanced binding of phagocyte to the antigen due to antibody or complement; c. the synonym of phagocytosis; d. release of the bactericidal components from phagocytes
31. The opsonins are the substances, which increase…
a. vascular permeability; b. secondary alteration; c. binding of phagocytes to the subject of phagocytosis; d. all are correct
32. Chemotaxis is the process of…
a. the movement of leukocytes from the vessel lumen into the damaged area;
b. release of lysosomal enzymes to the extracellular space;

c. ingestion of solid particles; d. tissue damage
33. Neutrophilia occurs in…
a. allergic disorders and parasitic infections; b. chronic infections (e .g. tuberculosis); c. viral infections; d. pyogenic infections and tissue destruction
34. Lymphocytosis occurs in…
a. allergic disorders and parasitic infections; b. chronic infections (e .g. tuberculosis); c. viral infections; d. pyogenic infections and tissue destruction
35. Eosinophils play the key role in…
a. removing necrotic cells, foreign material and bacteria; b.parasitic infections and hypersensitivity; c. release of mediators acting locally e.g. histamine; d. in wound healing
36. Pyrexia is…
a. the systemic effect of acute inflammation; b. the local effect of acute inflammation; c. both are correct
37.Digestion of the normal tissues in inflammation is due to the increased activities of…
a. lysosomal enzymes (collagenases and proteases); b. histamine release
c. activation of complement system; d. cytokine synthesis (IL-1, IL-6)
38. Serous exudate represents:
a. fluid low in protein content that result from plasma entering the inflammatory site;
b. fluid containing pus, composed of degraded white blood cells, proteins, and tissue debris;
c. fluid containing fibrinogen and forming a thick and sticky meshwork; d. the fluid resulting from a significant leakage of red cells from the capillaries
39. Fibrinous exudate is…
a. a form of exudate with fibrin deposition;
b. a form of transudate with fibrin deposition;
c. both are correct
40. Hemorrhagic exudate represents:
a. fluid low in protein content that results from plasma entering the inflammatory site;
b. containing pus, composed of degraded white blood cells, proteins, and tissue debris;
c. fluid containing fibrinogen and form a thick and sticky meshwork; d. the fluid as a result significant leakage of red cells from the capillaries
41. The example of purulent exudates is:
a. abscess; b. tumor; c. ulcer; d. all are correct
42. The low protein fluid emanating from the intravascular compartment due to an imbalance of the hydrostatic forces is…
a. an exudate; b. transudate; c. plasma ultrafiltrate; d. all are correct
43. The exudation is a characteristic feature of …
a. acute inflammatory response; b. chronic inflammatory response;
c. both inflammatory responses
44. Purulent exudate represents…
a. fluid low in protein content that results from plasma entering the inflammatory site; b. fluid containing pus, composed of degraded white blood cells, proteins, tissue debris; c. fluid containing fibrinogen and forming a thick and sticky meshwork
45. Neutrophils play the key role in…

a. removing necrotic cells, foreign material and bacteria; b. parasitic infections and hypersensitivity; c. release of mediators acting locally e.g. histamine in wound healing.

46. The acute-phase inflammatory proteins are synthesized in the…

a. liver; b. spleen; c. bone marrow

47. The common activity of the acute phase proteins (ACP) is…

a. opsonization of the pathogens and particles; b. an ability to induce the fever; c. induction of the tissue damage (alteration); d. induce an increase of the vascular permeability

48. The manifestations of the chronic inflammatory response are due to:

a. infiltration with macrophages, lymphocytes, and fibroblasts; b. the influx of inflammatory cells such as neutrophils; c. vasodilation and increased capillary permeability

49. The mediators synthesized from arachidonic acid through the lipoxygenase metabolic pathway:

a. histamine; b. complement components; c. prostaglandins; d. leukotrienes; e. kinines; f. all are correct

50. The mediators synthesized from arachidonic acid through the cycloxygenase metabolic pathway:

a. histamine; b. complement components; c. prostaglandins; d. leukotrienes; e. kinines; f. all are correct

51. The tissue-derived inflammatory mediators, which are synthesized *de novo* …

a. kinines; b. eicosanoids (PGs and LTs) and PAF; c. histamine and serotonin; d. lysosomal constituents

52. Histamine is generally produced by…

a. erythrocytes; b. monocytes and macrophages; c. mast cells and basophils; d. all are correct

53. The vasoactive amines include:

a. prostaglandines and leukotrienes; b. kinines; c. complement system; d. histamine and serotonin

54. Which statement is wrong?

a. histamine induces smooth muscle construction; b. histamine induces vasodilatation of the arterioles; c. histamine stimulates the production of acid by parietal cells; d. histamine increases vascular permeability;

e. histamine causes vasoconstriction of the arterioles

55. Clinical effects of histamine include the following except:

a. gastric secretion; b. increase of the vascular permeability and vasodilatation; c. increase of the body temperature; d. the abnormal function of cardiovascular system

56. Histamine induces:

a. activation of complement; b. increased dilatation and permeability of blood vessels; c. vasoconstriction; d. wound healing

57. The most common factor involved in histamine release from mast cells is the:

a. binding of IgE-Ag complex to the cellular surface; b. adhesion of leukocytes to endothelial cells; c. phagocytosis; d. all are correct.

58. The «slow reactive substance of anaphylaxis» (SRS-A) represents:

a. vasoactive amines acting slower than usually; b. the mixture of leukotrienes C4, D4 and E4; c. mediators released in delayed inflammatory reactions and chronic inflammation only; d. all are correct

59. The plasma-derived inflammatory mediators are the following except:
a. kynin system; b. clotting system; c. eicosanoids; d. fibrinolytic system; e. complement cascade.
60. The tissue-derived inflammatory mediators are the following except:
a. kinin system; b. vasoactive amines: histamine and serotonin; c. platelet activating factor (PAF); d. eicosanoids - arachidonic acid metabolites; e. cytokines
61. The chemical mediators known to be implicated as intermediates in the hypothalamic production of fever:
a. complement system; b. prostaglandins E1 and E2; c. leukotrienes C4, D4 and E4; d. histamine and serotonin
62. Synthesis of platelet-activating factor in platelets is mediated by…
a. heparin; b. component of the complement system C5a;
c. endogenous arachidonic acid metabolites leukotrienes; d. thrombin
63. The component of the complement system providing the opsonization is:
a. C3a; b. C3b; c. C5a; d. C5-9 complex
64. The activity of C56789 complex is related to…
a. pore formation with the following lysis of the target cells;
b. stimulation of arachidonic acid metabolism; c. both are correct
65. The ability to act as an anaphylatoxins is specific for the following complement components:
a. C3a, C5a; b. C3b, C5b c. C1; d. C5-9 complex
66. The formation of the pores in target cells can be due to the activity of….
a. histamine; b. C5b complement component ; c. Leukotrienes ; d. C5-9 complex
67. The mediators involved in body temperature regulation are:
a. kinines; b. complement system; c. histamine and serotonin; d. prostaglandins
68. Labile cells are those that:
a. normally stop dividing when growth ceases, but capable of undergoing regeneration when confronted with an appropriate stimulus;
b. cannot undergo mitotic division and cannot regenerate; once destroyed, they are replaced with fibrous scar tissue;
c. that continue to divide and replicate throughout life, replacing cells that are continually being destroyed
69. Labile cells represent…
a. nerve cells, skeletal cells, and cardiac muscle cells;
b. hepatocytes, endothelial cells, fibroblasts, renal tubular cells;
c. epithelial cells of the skin, oral cavity, vagina, and cervix; the columnar epithelium of the gastrointestinal tract, uterus, and fallopian tubes; d. all are correct
70. Stable cells are those that:
a. normally stop dividing when growth ceases, but capable of undergoing regeneration when confronted with an appropriate stimulus;
b. cannot undergo mitotic division and cannot regenerate; once destroyed, they are replaced with fibrous scar tissue;
d. that continue to divide and replicate throughout life, replacing cells that are continually being destroyed

71. Stable cells represent…
a. nerve cells, skeletal cells, and cardiac muscle cells;
b. hepatocytes, endothelial cells, fibroblasts, renal tubular cells;
c. epithelial cells of the skin, oral cavity, vagina, and cervix; the columnar epithelium of the gastrointestinal tract, uterus, and fallopian tubes; d. all are correct
72. Permanent cells are those that:
a. normally stop dividing when growth ceases, but capable of undergoing regeneration when confronted with an appropriate stimulus;
b. cannot undergo mitotic division and cannot regenerate; once destroyed, they are replaced with fibrous scar tissue;
c. that continue to divide and replicate throughout life, replacing cells that are continually being destroyed
73. Permanent cells represent …
a. nerve cells, skeletal cells, and cardiac muscle cells;
b. hepatocytes, endothelial cells, fibroblasts, renal tubular cells;
c. epithelial cells of the skin, oral cavity, vagina, and cervix; the columnar epithelium of the gastrointestinal tract, uterus, and fallopian tubes; d. all are correct
74. There are the following phases in the wound remodeling:
a. inflammatory phase, proliferative phase, and maturational or remodeling phase;
b. maturational or remodeling phase, inflammatory phase, proliferative phase;
c. inflammatory phase, maturational or remodeling phase, proliferative phase;
75. The resolution of the acute inflammation is a consequence of:
a. minimal tissue damage and/or rapid destruction of the causal agent;
b. substantial tissue damage and large amounts of fibrin, which cannot be removed completely; c. pus formation
76. The suppuration of the acute inflammation is a consequence of:
a. minimal tissue damage and/or rapid destruction of the causal agent;
b. substantial tissue damage and large amounts of fibrin, which cannot be removed completely; c. pus formation
77. The pathogens usually involved in the suppuration are :
a. *Staphylococcus aureus* ; b. *Streptococcus pyogenes*;
c. coliform organisms d. all are correct
78. Abscesses typically have…
a. the necrotic and eroded area with surrounding sub-epithelial inflammation,
b. fibroblastic proliferation, scarring, and accumulation of chronic inflammatory cells
c. a central necrotic core containing purulent exudates surrounded by a layer of neutrophils and the fibrous wall d. an area containing atypic and high-speed proliferating cells
79. Histological appearances in chronic inflammation include:
a. dilatation of small blood vessels within the damaged area;
b. a mixed inflammatory cell infiltrate containing predominantly macrophages, lymphocytes and plasma cells; c. accumulation of fluid in the extra vascular space;
d. a mixed inflammatory cell infiltrate containing predominantly neutrophils and eosinophils

80. The chronic inflammation is a consequence of…
a. invasion of the intracellular pathogens b. prolonged exposure to toxins or mechanical irritation c. acute inflammation d. large extracellular pathogens like many fungi, parasites e. all are correct
81. The resolution of the acute inflammation reflects the processes, in which…
a. lost tissues are replaced by proliferation of cells of the same type, which reconstruct the normal architecture;
b. dead material is removed by phagocytosis and the tissues are left with their original architecture c. lost tissues are replaced by a fibrous scar, which is produced from granulation tissues
82. Systemic factors influencing the wound healing include the following except:
a. persisting infection, foreign material or other stimulus to inflammation; b. age; c. metabolic diseases e.g. renal failure, diabetes mellitus d. catabolic state associated with malignancies
83. The organization (tissue repair) of the acute inflammation reflects the processes, in which…
a. lost tissues are replaced by proliferation of cells of the same type, which reconstruct the normal architecture; b. dead material is removed by phagocytosis and the tissues are left with their original architecture; c. lost tissues are replaced by a fibrous scar, which is produced from granulation tissues
84. Accumulation of macrophages and lymphocytes in areas of chronic inflammation is a consequence of…
a. continued recruitment from the circulation; b. local proliferation; c. prolonged survival and immobilization in the inflamed area; d. all are correct

85. The diseases associated with granulomatous inflammation are the following except:
a. tuberculosis; b. rheumatoid arthritis; c. silicosis and other pneumoconioses; d. lobal pneumonia
86. The regeneration of the acute inflammation reflects the processes, in which…
a. lost tissues are replaced by proliferation of cells of the same type, which reconstruct the normal architecture; b. dead material is removed by phagocytosis and the tissues are left with their original architecture; c. lost tissues are replaced by a fibrous scar, which is produced from granulation tissues
87. Scar contraction is much greater, and re-epithelialization is less complete in the: a. wound healing by primary intention; b. wound healing by secondary intention; c. suppuration
86. Areas of granulomatous inflammation commonly undergo:
a. necrosis; b. apoptosis; c. scar formation; d. healing by primary intention
88. Langhans-type giant cells are usually observed in tissues during…
a. acute inflammation, accomplished with serous exudate (e.g pneumonia);
b. granulomatous inflammation (e.g. tuberculosis); c. acute inflammation, accomplished with purulent exudates; d. abscess e. wound healing with primary intension; f. wound healing with secondary intension
89. The clusters of fragile newly-formed capillary blood vessels which proliferate and grow into damaged tissue along with fibroblasts at an early stage of the repair process

are named…
a. resolution ; b. granulation tissues ; c. granulomatosis inflammation; d. suppuration
90. The essential components of a granuloma are:
a. epithelioid cells, usually with a surrounding zone of lymphocytes;
b. neutrophils mixed with fibroblasts and tissue mast cells;
c. intracellular pathogens (e.g. Micobacteria) surrounded with monocytes; d. pus, containing eosinophils and tissue debris
91. Connective tissues, blood vessels, extracellular matrix, and nerve fibers represent:
a. stromal tissues; b. parenchymal tissues; c. both are correct
92. The granulomatous inflammation represents:
a. the clusters of fragile newly-formed capillary blood vessels which proliferate and grow into damaged tissue along with fibroblasts at an early stage of the repair process;
b. the aggregates of particular types of chronic inflammatory cells: macrophages, lymphocytes; c. wound healing by secondary intension; d. caseous necrosis
93. The appearance of the multinucleate giant cells in the granulomas is a result of…
a. increased monocyte and macrophage proliferation and cell division b. fusion of epithelioid macrophages without nuclear or cellular division c. both are correct
94. The exudation is a characteristic feature of…. a. acute inflammatory response b. chronic inflammatory response c. both inflammatory responses
96. The epithelioid cells that essentially persist in granuloma are derived from..:
a. blood monocytes; b. epithelial cells; c. both cell types
97. Substantial tissue damage and large amount of fibrin are able to induce:
a. resolution b. organization c. suppuration d. chronic inflammation

FEVER

1. The synonym of the fever is:
a. hypoxia b. pyrexia c. anorexia
2. Cytokines known to cause the elevation of body temperature are:
a. IL-1, 6, TNF-α b. histamine, serotonine c. prostaglandins (PGE1 and PGE2)
d. CM-CSF, M-CSF, G-CSF, IL-3 e. all are correct
3. The mechanisms contributing in raise and maintaining a higher than normal temperature are:
a. shivering and rigors b. peripheral vasoconstriction c. all are correct
4. Shivering and rigors are triggered to:
a. reduce heat loss b. increase heat loss c. generate heat from muscle activity
5. Heat loss may be achieved by:
a. sweating b. vasodilatation c. evaporation d. all are correct
6. What statement is wrong? Peripheral vasoconstriction is able to:
   a. rise of the body temperature b. decrease of the body temperature c. reduce heat loss by shunting blood internally
7. The thermoregulatory center is located in:
   a. bone marrow b. hypothalamus c. cerebellum d. spinal cord
8. Heat loss is involved in the…
a. raise of the body temperature b. decrease of the body temperature c. both are correct

9. Antipyretics are also known as…
a. NSAID's (non-steroid anti-inflammatory drugs); b. SAID's (steroid anti-inflammatory drugs); c. hypotensive drugs; d. all are correct
10. The ability of antipyretics to reduce increased body temperature is due to….
a. inhibition of shivering and rigors; b. inhibition of peripheral vasoconstriction; c. inhibition of cyclooxygenase; d. increased sweating and vasodilation.
11. The normal level of body temperature is:
a. $<35^0$ C ($<95^0$ F) b. $<36.6^0$ C ($<98^0$ F) c. 36.6 - 37.2^0 C (98 - 99^0 F) d. $>37.2^0$ C ($>99^0$ F) e. $>41.6^0$ C ($>107^0$ F)
12. The level of the subnormal body temperature is:
a. $<35^0$ C ($<95^0$ F) b. $<36.6^0$ C ($<98^0$ F) c. 36.6 - 37.2^0 C (98 - 99^0 F) d. $>37.2^0$ C ($>99^0$ F) e. $>41.6^0$ C ($>107^0$ F)
13. Pyrexia is characterized by the following level of the body temperature:
a. $<35^0$ C ($<95^0$ F) b. $<36.6^0$ C ($<98^0$ F) c. 36.6 - 37.2^0 C (98 - 99^0 F) d. $>37.2^0$ C ($>99^0$ F) e. $>41.6^0$ C ($>107^0$ F
14. Hyperpyrexia is characterized by the following level of the body temperature: a. $<35^0$ C ($<95^0$ F) b. $<36.6^0$ C ($<98^0$ F) c. 36.6 - 37.2^0 C (98 - 99^0 F) d. $>37.2^0$ C ($>99^0$ F) e. $>41.6^0$ C ($>107^0$ F)
15. Hypothermia is characterized by the following level of the body temperature:
a. $<35^0$ C ($<95^0$ F) b. $<36.6^0$ C ($<98^0$ F) c. 36.6 - 37.2^0 C (98 - 99^0 F) d. $>37.2^0$ C ($>99^0$ F) e. $>41.6^0$ C ($>107^0$ F)
16. Which statement is correct?
a. body temperature has a diurnal variation, lowest in the early morning and highest in the late afternoon and evening
b. body temperature has a diurnal variation, highest in the early morning and lowest in the late afternoon and evening
c. body temperature is stable and has no variations
17. The substances known to induce the fever are called as:
a. phlogogens b. pyrogens c. antigens d. allergens
18. Pyrogens are generally classified into the following groups:
a. exogenous and endogenous; b. extracellular and intracellular;
c. plasma- and tissue-derived d. pathogenic and non-pathogenic
19. Exogenous pyrogens are mostly derived from:
a. phagocytes (e.g. monocytes, macrophages); b. microbes, microbial products or toxins c. hypothalamus d. bone marrow
20. The action of exogenous pyrogens is due to:
a. direct action to the thermoregulatory center; b. release of endogenous pyrogens; c. vasoconstriction and decrease of the heat loss; d. all are correct
21. The exogenous pyrogenes generally are:
a. glycoproteins; b. lipopolysaccharides; c. polypeptides; d. all are correct
22. The activity of the endogenous pyrogens is due to:
a. direct action to the thermoregulatory center; b. release of exogenous pyrogens; c. vasoconstriction and decrease of the heat loss; d. all are correct
23. An intermediate molecules, stimulated by the cytokine to cause pyrexia are…
a. prostaglandins E1 and E2; b. leukotrienes C4, D4, E4; c. platelet-activating factors (PAF); d. all are correct
24. The chemical mediators known to be implicated as intermediates in the

hypothalamic production of fever:
a. complement system; b. prostaglandins E1 and E2; c.leukotrienes C4, D4 and E4; d. histamine and serotonin
25. Cytokines known to cause the elevation of body temperature are:
a. IL-1, 6, TNF-α; b. histamine, serotonin; c. prostaglandins (PGE1 and PGE2); d. CM-CSF, M-CSF, G-CSF, IL-3; e. all are correct
26. Host defense mechanisms are enhanced by a…
a. raised temperature; b. decreased temperature; c. normal temperature
26. Remittent fever is generally observed in:
a. tuberculosis; b. acute pneumonia; c. Sepsis; d. Malariae; e. all are correct
27. Intermittent fever is generally observed in:
a. tuberculosis; b. acute pneumonia; c. sepsis; d. malariae; e. all are correct
28. Hectic fever may be observed in:
a. tuberculosis; b. acute pneumonia; c. sepsis; d. malaria; e. all are correct
29. The most common side effect of fever in children is…
a. cardiac and pulmonary failure; b. febrile convulsions; c. liver failure d. acidosis
30. The pyrotherapy is generally used in the treatment of:
a. acute inflammatory processes; b. chronic diseases; c. both are correct

ALLERGY

1. The term "allergy" was originally defined as "an altered capacity of the body to react to foreign substances" by:
a. Clemens Von Pirquet ; b. Edward Jenner ; c. Louis Paster ;
d. Robert Kox
2. Hypersensitivity reactions are classified by Gell and Coombs into:
a. 2 types; b. 3 types; c. 4 types d. 5 types
3. Exogenous allergens are the following except:
a. pollens; b. drugs; c. infectious agents d. thyroid glands
4. Non-damaged tissues may be involved in triggering allergic reactions as an:
a. exogenous allergens; b. primary endogenous allergens; c. secondary endogenous allergens; d. gaptens; e. all are correct
5. Damaged tissues may be involved in triggering of allergic reactions serving as an:
a. exogenous allergens; b. primary endogenous allergens;
c. secondary endogenous allergens; d. gaptens; e. all are correct
6. Substances requiring the additional transformation to be the complete allergens are termed as:
a. exogenous allergens; b. primary endogenous allergens; c. secondary endogenous allergens; d. gaptens; e. all are correct
7. Choose the allergen, which can serve as a gapten:
a. pollen; b. drugs (antibiotics); c. food; d. house dust
8. Arrange the stages of allergic reactions in correct sequences from first to last:
a. biochemical phase, immunology phase (sensitization), pathophysiological (symptomatic) phase;
b. pathophysiological phase, immunology phase (sensitization), biochemical phase;
c. immunology phase (sensitization), pathophysiological phase, biochemical phase

d. immunology phase (sensitization), biochemical phase, pathophysiological phase

9. Synthesis of antibodies occurs in the following step of the allergic reactions:

a. sensitization; b. biochemical; c. pathophysiological; d. all are correct

10. The synthesis and release of inflammatory mediators occurs in the following step of the allergic reactions:

a. sensitization; b. biochemical; c. pathophysiological; d. all are correct

11 The clinical manifestations of allergic reactions are observed during the following stage:

a. sensitization; b. biochemical; c. pathophysiological; d. all are correct

12. Sensitization is required for the:

a. anaphylactic reactions; b. anaphylactoid reactions; c. both are correct

13. The sensitization phase is absent in the following processes except:

a. passive sensitization; b. active sensitization; c. anaphylactoid reactions

14. The formation of immune complex (Ag-Ab) is observed in the following step of allergic reactions:

a. sensitization; b. biochemical; c. pathophysiological; d. all are correct

15. Types I, II and III hypersensitivity reactions are classified as:

a. cell-mediated reactions; b. antibodies-mediated reactions; c. anaphylactoid reactions; d. all are correct

16. IgM and IgG are involved in the following types of the hypersensitivity reactions except: a. type I; b. type II; c. type III

17. Type IV hypersensitivity reactions are classified as:

a. cell-mediated reactions; b. antibodies-mediated reactions; c. anaphylactoid reactions; d. all are correct

18. IgE is produced by:

a. eosinophils; b. mast cells and basophils; c. plasma cells; d. monocytes and macrophages

19. Biological role of IgE is the:

a. defense against *Micobacterium tuberculosis* b. defense against parasites c. viruses protection d. all are correct

20. Features of allergens, favoring the IgE production are:

a. low dose and molecular weight, transmucosal delivery; b. high dose and molecular weight, parenteral delivery;

c. all are correct

21. Early-phase of IgE-mediated allergic reaction is related to the…

a. synthesis of Abs b. release of mediators form mast cells and/or basophils c. influx of inflammatory cells (e.g. eosinophils) d. all are correct

22. Late-phase reaction of IgE-mediated allergic reaction is related to the:

a. synthesis of Abs b. release of mediators form mast cells and/or basophils c. influx of inflammatory cells (e.g. eosinophils) d. all are correct

23. Substances involved in tissue damage in late-phase IgE-mediated reactions include the following except:

a. major basic protein (MBP) b. eosinophil cationic protein (ECP) c. eosinophil peroxidase d. collagenase

24. IgE production requires:

a. Th1-cells, producing IFN-γ and IL-2 b. Th2-cells, producing IL-4 , 5 and IL-13

c. h3-cells, producing TGF-α

25. High-affinity IgE (FcεRI) receptor is expressed on:
a. T-lymphocytes b. B-lymphocytes and plasma cells c. platelets d. basophils and mast cells e. all cell types indicated above
26. Low-affinity IgE (FcεRII) receptor is expressed on:
a. T-lymphocytes b. B-lymphocytes and plasma cells c. platelets d. eosinophils e. all cell types indicated above
27. IgE is involved in the following type of the hypersensitivity reactions…
a. type I b. type II c. type III d. type IV
28. Primary or initial-phase response of type I hypersensitivity reactions is characterized by:
a. degranulation of basophils and mast cells with the following vasodilation, vascular leakage, and smooth muscle contraction b. infiltration of tissues with eosinophils and other acute and chronic inflammatory cells as well as tissue destruction in the form of epithelial cell damage c. all are correct
28. Secondary or late-phase response of type I hypersensitivity reactions is characterized by:
a. degranulation of basophils and mast cells with the following vasodilation, vascular leakage, and smooth muscle contraction
b. infiltration of tissues with eosinophils and other acute and chronic inflammatory cells as well as tissue destruction in the form of epithelial cell damage c. all are wrong
29. Primary or initial-phase response of type I hypersensitivity reactions usually occurs within:
a. few seconds of exposure to antigen b. 5-30 min of exposure to antigen c. 1 hour of exposure to antigen d. 1-3 days of exposure to antigen
30. Cytokines secreted by Th2 lymphocytes promote the following effects except:
a. IgE production; b. chemotaxis of the eosinophils; c. increased numbers of mucosal mast cells; d. increased vascular permeability
31. Factors involved in the development of extrinsic asthma include the following except:
a. atopy; b. airway hyperactivity; c. aberrant arachidonic acid metabolism
32. Aberrant arachidonic acid metabolism might be a causative factor of:
a. atopic asthma; b. intrinsic asthma; c. occupational asthma; d. aspirin-induced asthma; e. asthma of infancy
33. Asthma of infancy is generally associated with:
a. aberrant arachidonic acid metabolism; b. viral infections; c. atopy;
d. all are correct
34. The common allergens identified in patients with atopic asthma include the following except:
a. the house dust mite; b. pollen (grass and trees); c. fungal spores especially *Aspergillus fumigatus*; d. cat salivary antigens; e. non-steroid anti-inflammatory drugs
35. The agents triggering airway hypersensitivity include the following except:
a. upper respiratory tract infection b. smoking c. emotion d. cold air and exercise e. fever

36. Non-specific airway hyperactivity can be demonstrated by:
a. bronchial provocation tests with increasing concentrations of the allergen
b. bronchial provocation tests with increasing concentration of either methacholine or histamine c. both are correct
37. A patient is having an acute asthma attack with inspiratory wheezing. This is classified as a:
a. type III hypersensitivity reaction b. type I hypersensitivity reaction c. type II hypersensitivity reaction d. type IV hypersensitivity reaction
38. Skin allergy tests to detect specific IgE are useful in predicting of:
a. anaphylactic reactions b. anaphylactoid reactions c. both are correct
39. The mechanism underlying de-sensitization after anaphylaxis is:
a. the absence of mediators in cells involved in allergic reactions
b. significant decrease of receptor(s) sensitivities to allergic mediators c. the blockage of interactions between Ag and Abs
40. The mechanism underlying specific de-sensitization used in therapy of atopic diseases is related to:
a. elimination of allergen(s) b. stabilization of mast cell membrane
c. synthesis of blocking Abs d. all are wrong
41. The class of blocking Abs sensitized during the specific de-sensitization therapy:
a. IgA b. IgE c. IgG2 d. IgG4 e. IgD
42. De-sensitization period usually occurs after:
a. acute attack of atopic bronchial asthma; b. anaphylactic shock;
c. serum sickness; d. atopic dermatitis; e. all are wrong
43. The differences between anaphylactic and anaphylactoid reactions are related to:
a. presence (or absence) of immunology phase; b. types of secreted mediators;
c. symptomatic (pathophysiologic) phase
44. High amounts of the provoking agent are required for the development of:
a. anaphylactic reactions; b. anaphylactoid reactions; c. all are correct
45. There are the following causes of anaphylactoid reactions except:
a. NSAID's; b. anesthetics; c. blood components (gamma globulin); d. house dust
46. The clinical features of anaphylaxis include:
a. urticaria b. flushing c. pruritus d. all are correct
47. Anaphylaxis is a:
a. syndrome consisting of rash, lymphadenopathy, arthralgias, that appeared 7 or more days after injections of horse antisera;
b. systemic life-threatening hypersensitivity reaction characterized by a fall in blood pressure secondary to vasodilation;
c. delayed-type hypersensitivity disorder initiated by re-exposure to an allergen to which a person had previously become sensitized
48. The patient with sneezing and itchy, watery eyes is diagnosed with allergic rhinitis. This hypersensitivity reaction is caused by:
a. binding of an allergen to a specific IgE on the surface of a mast cells; b. binding of an allergen to a specific IgA on the surface of a basophils; c. binding of a histamine to an allergen; d. binding of a mast cells to histamine
49. The term atopic reactions refers to a:

a. genetically determined hypersensitivity to common environmental allergens mediated by an IgE-mast cell reactions; b. a group of disorders that are caused by a breakdown in the ability of the immune system to differentiate between self and non-self antigens; c. both are wrong

50. Genetically determined hypersensitivity to common environmental allergens mediated by an IgE-mast cell reactions are termed as:

a. anaphylaxis; b. anaphylactoid reactions; c. atopy; d. all are correct

51. The activity of sodium cromoglycate is due to…

a. blockage of IgE synthesis; b. blockage of mast cell degranulation; c. interaction with histamine receptors; d. all are correct

52. Which blood type is characterized by the absence of red cell antigens A and B:

a. type I (OO); b. type II (AA and/or AO); c. type III (BO and BB); d. type IV (AB)

53. The patients called as an "universal donors" have the following blood type:

a. type I (OO); b. type II (AA and/or AO); c. type III (BO and BB); d. type IV (AB)

54. The people with blood type I are called as an "universal donors" because of:

a. decreased blood viscosity; b. increased numbers of red blood cells; c. absence of red cell antigens; d. absence of haemolysins; e. all are correct

55. ABO incompatibility leads to the:

a. intravascular haemolysis of transfused red cells; b. intravascular haemolysis of host red cells; c. all are correct

56. Which blood type is characterized by absence of serum Abs (haemolysins) to the antigens A and B:

a. type I (OO); b. typeII (AAand/or AO); c. type III (BO and BB); d. type IV (AB)

57.

57. Which blood type is characterized by absence the antigens A and B and presence of serum Abs (haemolysins)

a. type I (OO); b. type II (AA and/or AO); c. type III (BO and BB); d. type IV (AB)

58. The major severe complications representing the ABO incapability are the following except: a. acute renal failure b. disseminated intravascular coagulation (DIC) c. anaphylactic shock

59. The development of Rhesus disease is possible during pregnancy in:

a. Rhesus (Rh) positive women and Rh negative baby; b. Rhesus (Rh) negative women and Rh positive baby; c. Rhesus (Rh) positive women and baby; d. Rhesus (Rh) negative women and baby

60. The most immunogenic Ag in Rh system is:

a. D antigen; b. C antigen; c. E antigen; d. all are correct

61. Prevention of Rhesus disease include:

a. administration of anti-rhesus (anti-D) Ig to Rh-positive mothers following the birth of a Rh-negative infant; b. administration of anti-rhesus (anti-D) Ig to Rh-positive mothers following the birth of a Rh-positive infant; c. administration of anti-rhesus (anti-D) Ig to Rh-negative mothers following the birth of a Rh-positive infant; d. all are correct

62. Rhesus disease in newborns represents the rhesus incompatibility between mother and baby which can be due to:

a. production of anti-Rh D Abs in rhesus positive mother towards a rhesus positive baby; b. production of anti-Rh D Abs in rhesus positive baby towards rhesus negative

mother; c. production of anti-Rh D Abs in rhesus negative mother towards a rhesus positive baby; d. all are correct

63. Autoimmune hemolytic anemia, hemolytic disease of newborn and Goodpasture's disease are classified as a:

a. Type III hypersensitivity reaction; b. Type I hypersensitivity reaction; c. Type II hypersensitivity reaction; d. Type IV hypersensitivity reaction

64. The Coombs test is used in the investigation of:

a. serum sickness; b. anaphylactic shock; c. hemolytic anemia; d.all are correct

65. The principle of the Coombs' test is that:

a. the addition of IgE to the mast cells will result in the release of mediators measured by spectrophotometer b. the addition of rabbit anti-human IgG to the patient's blood will result in aggregation of the patient's red cells if the red cells are coated in autoreactive IgG c. all are correct

66. The side effect of the antirabies serum administration is the development of:

a. anaphylactic shock; b. bronchial asthma; c. hemolytic anemia; d. serum sickness

67. The antigens involved in the serum sickness are the following except:

a. anti-lymphocyte globulin; b. streptokinase; c. penicillin; d. antirabies serum

68. Development of post-streptococcal glomerulonephritis is a consequence of:

a. trapping immune complexes in the glomeruli; b. mast cells degranulation in the glomeruli; c. eflux of monocytes and lymphocytes from glomeruli; d. all are correct

69. The inhalation of high doses of some allergens hay dust or mold spores (e.g. thermophilic actinomycetes) is able to induce:

a. bronchial asthma; b. allergic extrinsic alveolitis (farmer's lung) ;

c. anaphylactic shock; d. all are correct

70. High doses of some allergens hay dust or mold spores (e.g. thermophilic actinomycetes) are able to induce:

a. IgG antibody response; b. IgE antibody response; c. IgA antibody response; d. all are correct

71. Arthus reaction, systemic lupus erythematosis, serum sickness and rheumatoid arthritis are classified as a:

a. type III hypersensitivity reaction; b. type I hypersensitivity reaction; c. type II hypersensitivity reaction; d. type IV hypersensitivity reaction; e. all are correct.

72. The pathogenesis of Arthus phenomenon is related to:

a. the diffusion of IgG Abs to the site of injected Ag with the following formation of immune complexes and enhanced vascular permeability;

b. immune complex-induced mast cells degranulation and enhanced vascular permeability; c. activation of the complement cascade intravascularly inducing lysis of red blood cells

73. A patient is diagnosed with an immune complex allergic disorder. This type of disorder is mediated by:

a. inhibition of antibody-antigen complex; b. activation of complement; c. formation of soluble antibody-antigen complexes; d. inhibition of complement

74. The reactions accomplished with activation of complement system are the following except:

a. type III hypersensitivity reaction; b. type I hypersensitivity reaction; c. type II hypersensitivity reaction

75. The examples of the local type III hypersensitivity reaction are the following except:

a. allergic extrinsic alveolitis; b. subacute bacterial endocarditis; c. chronic viral hepatitis; d. Arthus reaction; e. allergic rhinitis
76. The patient is diagnosed with contact dermatitis. This type of hypersensitivity reaction is caused by:
a. mast cell degranulation b. formation of IgG and IgM antibodies; c. activation of complement; d. release of cytokines
77. Tuberculosis, contact dermatitis and transplant rejections are classified as a:
a. type III hypersensitivity reaction; b. type I hypersensitivity reaction; c. type II hypersensitivity reaction; d. type IV hypersensitivity reaction

TEST # 3

IMMUNODEFICIENCIES

1. Adaptive immune response exhibits:
a. recognition of conserved patterns on the microbe;
b. ability to "remember" the pathogen and quickly produce a height ened immune response on subsequent encounters with the same agent; c. all are correct
2. Innate immune response is…
a. non-specific and mediated by phagocytes (macrophages, neutrophils), natural killer cells and dendritic cells; b. specific to microbe or antigen and mediated by T and B lymphocytes; c. synonym of immunology tolerance; d. all are wrong.
3. Humoral immunity is mediated by:
a. the mol ecules in the blood and is the principal defense against an extracellular microbes and toxins; b. specific subsets of T-lymphocytes and defends against an intracellular microbes such as viruses; c. all are correct.
4. The first circulating immunoglobulin to appear in response to an antigen and the first antibody type made by a newborn is:
a. IgG b. IgD c. IgM d. IgA e. IgE
5. The newborn has immunity from his mother. The only immunoglobulin that crosses into the placenta is:
a. IgG b. IgD c. IgM d. IgA IgE
6. The mother is breastfeeding her infant. The infant is receiving:
a. innate immunity b. active immunity c. cellular immunity
d. passive immunity
7. Secretory immunoglobulin found in saliva, tears, bronchial, gastrointestinal, prostatic and vaginal secretions is…
a. IgG; b. IgD; c. IgM; d. IgA; e. IgE
8. The immunoglubulin which binds to basophils and mast cells and is involved in inflammation, allergic responses, and combating parasitic infections:
a. IgG; b. IgD; c. IgM; d. IgA; IgE
9. Cellular immunity is mediated by:
a. the mol ecules in the blood and is the principal defense against extracellular microbes and toxins b. specific T lymphocytes and defends against intracellular microbes such as viruses c. all are correct
10. T-cell receptor (TCR) recognizes a processed antigen peptide…

a. by membrane-bound immunoglobulin molecules that can bind a specific epitope; b. in association with a self-recognition protein, called a major histocompatibility complex (MHC) molecule; c. both mechanisms are involved

11. B-cell receptor (BCR) recognizes a processed antigen peptide…

a. by membrane-bound immunoglobulin molecules that can bind a specific epitope; b. in association with a self-recognition protein, called a major histocompatibility complex (MHC) molecule; c. both mechanisms are involved

12. Cells serving as regulators of immune response after being activated on the recognition of antigen in association with class II MHC molecules are:

a. B-lymphocytes; b. helper (CD4)T-cells; c. cytotoxic (CD8) T cells; d. dendritic cells

13. Which cell targets cell surfaces, such as virus-infected or cancer-transformed, after the recognition of class I MHC-antigen complexes on target cell surfaces?

a. B-lymphocytes; b. helper (CD4)T-cells; c. cytotoxic (CD8) T cells;
d. dendritic cells.

14. Disorders of T-cell function impair the ability:

a. to orchestrate the immune response ($CD4^+$ helper T cells);
b. to protect against fungal, protozoan ($CD8^+$ cytotoxic T cells);
c. to protect against viral, and intracellular bacterial
infections ($CD8^+$ cytotoxic T cells); d. to protect against oncogenic viruses and tumors; e. all are correct.

15. Disorders of B-cell function impair the ability to defend against:

a. oncogenic viruses and tumors; b. microorganisms and toxins circulating in the body fluids (IgM and IgG) or entering the body through the mucosal surface of the respiratory or gastrointestinal tract (IgA); c. viral and intracellular bacterial infections

16. High susceptibility to the diseases caused by extracellular pathogens can be a consequence of:

a. humoral immunodeficiency disorders; b. cellular immunodeficiency disorders; c. all are correct

17. High susceptibility to the diseases caused by intracellular pathogens can be a consequence of:

a.humoral immunodeficiency disorders; b.cellular immunodeficiency disorders; c. all are correct

18.The most frequent type of primary immunodeficiencies, accounting for 70% of all primary immunodeficiency disorders is:

a. humoral (B-cell) immunodeficiency; b. cell-mediated (T-cell) immunodeficiency; c. combined T- and B-cell immunodeficiency

19. Primary humoral immunodeficiency disorders are genetic disorders of:

a. dendritic cells; b. T-lymphocytes; B lymphocytes; d. mast cells

20. Primary humoral immunodeficiency disorders can interrupt:

a. production of one or all of the immunoglobulins b. recognition of general patterns of microbes and antigens c. immunology tolerance d. all are correct

21.Disorders that can be classified as a primary humoral immunodeficiencies are the following except:

a. transient hypogammaglobulinemia of infancy

b. X-linked hypogammaglobulinemia
c. Selective deficiency of IgG, IgA, IgM
d. X-linked hyper IgM syndrome
22. The central defect of X-Linked Agammaglobulinemia is:
a. inability of T cells to signal B cells to undergo isotype switching to IgG and IgA; thus, they produce only IgM
b. embryonic defect resulting in the partial or complete failure of development of the thymus and parathyroid glands
c. the block of differentiation of pre-B cells, creating an absence of mature circulating B cells and plasma cells d. all are correct
23. Persons with X-Linked Agammaglobulinemia are susceptible to:
a. meningitis, sinus and pulmonary infections with encapsulated organisms such as *S. pneumoniae, H. influenzae* type b, S. *aureus,* and *Neisseria meningitides*
b. certain malignancies and cancer development c. acute viral infections
24. Diagnosis of X-Linked Agammaglobulinemia is based on:
a. low or absence of serum immunoglobulins;
b. hypocalcemia and tetany that develops in the first 24 hours of life;
c. low IgG and IgA levels with normal or, more frequently, high IgM serum concentrations;
d. absent reaction to a battery of skin test antigens, including *Candida* and the tuberculin test, even when infected with *Mycobacterium tuberculosis*
25. Secondary humoral immunodeficiency disorders can be a consequence of:
a. nephrotic syndrome b. malignancies c. acute viral infections
d. all are correct
26. The central defect of DiGeorge syndrome is:
a. inability of T cells to signal B-cells to undergo isotype switching to IgG and IgA; thus, they produce only IgM
b. embryonic defect resulting in the partial or complete failure of development of the thymus and parathyroid glands; c. the block of differentiation of pre-B cells,creating an absence of mature circulating B cells and plasma cells; d. all are correct
27. X-linked hyper IgM syndrome is classified as:
a. primary humoral immunodeficiency disorder;
b. primary cellular immunodeficiency disorder;
c. secondary humoral immunodeficiency disorder;
d. secondary cellular immunodeficiency disorder;
e. combined severe immunodeficiency disorder
28. The central defect of hyper-IgM syndrome is:
a. inability of T cells to signal B cells to undergo isotype switching to IgG and IgA; thus, they produce only IgM;
b. embryonic defect resulting the partial or complete failure of development of the thymus and parathyroid glands;
c. the block of differentiation of pre-B cells, creating an absence of mature circulating B cells and plasma cells; d. all are correct

29. Persons with hyper-IgM syndrome are susceptible to:
a. acute viral infections; b. malignancies; c. recurrent pyogenic infections including otitis media, sinusitis, tonsillitis, and pneumonia
30. Certain malignancies such as Hodgkin's disease and other ymphomas are able to induce:
a. primary humoral immunodeficiency;
b. primary cellular immunodeficiency;
c. secondary humoral immunodeficiency;
d. secondary cellular immunodeficiency
31. Acute viral infections (measles, cytomegalovirus) are able to induce:
a. primary humoral immunodeficiency;
b. primary cellular immunodeficiency;
c. secondary humoral immunodeficiency;
d. secondary cellular immunodeficiency;
e. combined severe immunodeficiency
32. The main cell-target for HIV:
a. monocytes b. mast cells c. CD4+ T-lymphocytes d. CD8+ T-lymphocytes e. B-lymphocytes
34. Cells gradually declined during HIV-infection and AIDS development are…
a. monocytes b. mast cells c. CD4+ T-lymphocytes d. CD8+ T-lymphocyte e. B-lymphocytes
35. HIV carries its genetic information in:
a. ribonucleic acid (RNA) b. deoxyribonudeic acid (DNA) c. all are correct
36. Severe combined immunodeficiency syndrome (SCIDS) represents the state due to:
a. mutations in the gene encoding the common gamma chain shared by receptors for many of the cytokines that direct the differentiation and maturation of both T and B lymphocytes; b. deficiency in adenosine deaminase (ADA), which leads to accumulation of toxic metabolites that kill dividing and resting T cells; c. all are correct
37. Autosomal recessive SCIDS represents the state due to:
a. mutations in the gene encoding the common gamma chain shared by receptors for the cytokines involved in the differentiation and maturation of both T and B lymphocytes; b. deficiency of adenosine deaminase (ADA), which leads to accumulation of the toxic metabolites killing the dividing and resting T cells; c. both mechanisms are correct.
38. X-linked SCIDS represents the state due to:
a. mutations in the gene encoding the common gamma chain shared by receptors for the cytokines that direct the differentiation and maturation of both T and B-lymphocytes; b. deficiency in adenosine deaminase (ADA), which leads to the accumulation of the toxic metabolites killing both dividing and resting T-cells; c. both mechanisms are correct.
39. Ataxia-Telangiectasia is:
a. Humoral (B-cell) immunodeficiency; b. Cell-mediated (T-cell) immunodeficiency
c. combined T- and B-cell immunodeficiency
40. The defects of Ataxia-Telangiectasia include:

a. absolute lymphopenia and reduced levels of IgA, IgE, and IgG2; b. selective suppression of immunoglobulin synthesis; c. low IgG and IgA levels with normal or, more frequently, high IgM serum concentrations; d. high levels of IgE in serum.

41. Persons with ataxia-telangiectasia are susceptible to:

a. recurrent upper and lower respiratory tract infections and an increased risk for the development of malignancies; b. allergic and parasite diseases; c. viral infections.

42. Absolute lymphopenia can be observed in:

a. Ataxia-Telangiectasia; b. Wiskott-Aldrich syndrome; c. Chediak-Higashi syndrome; d. Hereditary angioneuratic edema; e. all are correct.

43. Persons with Wiskott-Aldrich syndrome are susceptible to:

a. recurrent bacterial infections; b. bleeding episodes or symptoms (low platelet counts); c. varicella infection; d. development of malignancies of the mononuclear phagocytic system, including Hodgkin's lymphoma and leukemia e. all are correct

44. The central defect of Chediak-Higashi syndrome is:

a. inability of T cells to signal B cells to undergo isotype switching to IgG and IgA; thus, they produce only IgM;

b. embryonic defect resulting in the partial or complete failure of development of the thymus and parathyroid glands;

c. differentiation blockage of the pre-Bcells, creating an absence of the mature circulating B cells and plasma cells;

d. the defect in a gene encoding a protein involved in the intracellular vesicle formation thereby leading to the failure of the proper fusion between the lysosomes and phagosomes

45. Defect in a gene encoding a protein involved in intracellular vesicle formation, which causes a failure to fuse lysosome with phagosomes leads to the development of…

a. Ataxia-Telangiectasia; b. Wiskott-Aldrich syndrome; c. Chediak-Higashi syndrome; d. all are correct

46. Impaired intracellular killing due to the deficiencies in the enzymes glucose-6-phosphate dehydrogenase and myeloperoxidase is observed in:

a. hereditary angioneuratic edema; b. chronic granulomatous disease; c. Chediak-Higashi syndrome; d. X-linked or Bruton's agammaglobulinemia

47. High susceptibility to infection caused by Neisseria meningitis can be due to:

a. C3 component activation defect; b. defects in the membrane-attack components of complement (C5-9); c. the defects in maturation and differentiation of B-cells; d. all are correct.

48. Decay-accelerating factors and CD59 are known to:

a. protect a person's own cell surfaces from complement activation destroy their own red blood cells; b. opsonize the extracellular pathogens thereby facilitating the recovery; c. activate antigen presentation by dendritic cells thereby facilitating the immune response.

49. The development of hereditary angioneurotic edema is due to the:

a. absence of functional C1 inhibitor; b. deficiencies in the terminal components of complement (C5 through C9); c. impaired phagocytosis as a consequence of the

deficiency of the enzymes glucose-6-phosphate dehydrogenase and nyeloperoxidase; d. all are correct

50. Absence of B-cells (CD19/20) in the peripheral blood is usually observed in:
a. Transient hypogammaglobulinemia of infancy (THI), b. X-linked agammaglobulinemia (Bruton's disease); c. common variable immunodeficiency (CVID); d. all are correct.

51. The amount of B-cells (CD19/20) in peripheral blood remains normal, whereas serum Igs are decreased in:
a. X-linked agammaglobulinemia (Bruton's disease); b. common variable immunodeficiency (CVID); c. all are correct.

52. Undetectable levels of the serum immunoglobulins is usually observed in:
a. X-linked agammaglobulinemia (Bruton's disease); b. common variable immunodeficiency (CVID); c. X-linked hyper-IgM-syndrome; d. all are correct.

53. The amount of B-cells (CD19/20) in peripheral blood remains normal in:
a. X-linked agammaglobulinemia (Bruton's disease); b. common variable immunodeficiency (CVID); c. all are correct.

54. Poor titer response to vaccination with polysaccharide antigens, but not to the protein antigens, is characteristic feature of:
a. X-linked agammaglobulinemia (Bruton's disease); b. common variable immunodeficiency (CVID); c. selective IgG2 deficiency; d. all are correct.

55. The differentiation of B-cells into the plasma cells is blocked during**:**
a. Transient hypogammaglobulinemia of infancy (THI), b. X-linked agammaglobulinemia (Bruton's disease); c. common variable immunodeficiency (CVID); d. all are correct.

56. Persistent (i.e. for life) infusion of pooled human IgG Abs (every 3–4 weeks) is a treatment option for:
a. Transient hypogammaglobulinemia of infancy; b. X-linked hypogammaglobulinemia (Bruton's disease); c. selective IgA deficiency; d. all are correct.

57. Poor titer response to vaccination with polysaccharide and protein antigens (e.g. pneumococci, tetanus, and diphtheria) is typical for:
a. common variable immunodeficiency (CVID); b. selective IgG2 deficiency; c. all are correct; d. All are wrong

58. 40-years old patient has the history of the recurrent otitis media and pulmonary infections during the last 10 years. The doctor must think about the following condition: a) transient hypogammaglobulinemia of infancy; b. X-linked hypogammaglobulinemia (Bruton's disease); c. common variable immunodeficiency (CVID); d. all are correct.

59. The maturation of pre-B-cells blocked due to the mutations of Btk is a typical for:
a. transient hypogammaglobulinemia of infancy; b. X-linked hypogammaglobulinemia; c. common variable immunodeficiency (CVID); d. all are correct.

60. Parathyroid gland abnormalities and low blood calcium level are usually observed

in:
a. common variable immunodeficiency (CVID); b. X-linked agammaglobulinemia (Bruton's disease); c. congenital thymic aplasia (Di George syndrome); d. all are wrong
61. Deficiency of the terminal complement components (C5-C9) makes the person susceptible to:
a. non-Hodgkin's lymphomas and leukemia; prolonged bleeding time; c. the recurrent systemic infections with Neisseria species (*N. meningitides* and N. *gonorrhoeae*); d.autoimmune diseases (SLE and SLE-like syndrome).
62. An increased radiosensitivity and high incidence of the malignances is typical for:
a. Wiskott-Aldrich syndrome; b. Ataxia-teleangiectasia; c. complement deficiency; d. all are correct
63. The significant reduction of serum immunoglobulins accompanied with normal amount of the circulating B lymphocytes may be due:
a. transient hypogammaglobulinemia of infancy;
b.X-linked hypogammaglobulinemia (Bruton's disease);
c. common variable immunodeficiency;
d. all are correct
64. Thymus transplantation might be considered as a treatment option for patients with:
a. Transient hypogammaglobulinemia of infancy (THI); b. common variable immunodeficiency (CVID); c. X-linked hyper-IgM-syndrome; d. Bruton's disease; e. Di George syndrome.
65. Immunoglobulin replacement therapy is usually required for patients with:
a. X-linked hyper-IgM syndrome; b. X-linked hypogammaglobulinemia (Bruton's disease); c. common variable immunodeficiency; d. all are correct
66. Nephrotic syndrome is usually associated with:
a. primary humoral (B-cell) immunodeficiency; b. secondary T-cell immunodeficiency; c. secondary humoral (B-cell) immunodeficiency;
d. all are wrong.
67. Failure to express CD40 ligand on activated T-cells is a characteristic finding of:
a. transient hypogammaglobulinemia of infancy; b. X-linked hypogammaglobulinemia (Bruton's disease); c. X-linked hyper IgM syndrome; d. congenital thymic aplasia (Di George syndrome).
68. The significant reduction of all classes of serum Igs together with circulating B lymphocytes is a typical for:
a. Wiskott-Aldrich syndrome; b. X-linked hypogammaglobulinemia (Bruton's disease); c. Common variable immunodeficiency; d. all are correct.
69. Underdevelopment of thymus gland is a common feature for:
a. common variable immunodeficiency (CVID); b. X-linked agammaglobulinemia (Bruton's disease); c. congenital thymic aplasia (Di George syndrome); d. all are wrong.
70. C1 esterase inhibitor (i.v.) treatment is required for the patients with:
a. Ataxia-Telangiectasia; b. Wiskott-Aldrich syndrome; c. Chediak-Higashi syndrome;

d. hereditary angioneuratic edema.
71. Partial albinism is observed in:
a. Ataxia-Telangiectasia; b. Wiskott-Aldrich syndrome; c. Chediak-Higashi syndrome; d. hereditary angioneuratic edema
72. Parathyroid gland abnormalities are observed during:
a. transient hypogammaglobulinemia of infancy; b. Chediak-Higashi syndrome; c. complement deficiency; d. congenital thymic aplasia (Di George syndrome).
73. The mutations in gene (Xq13) encoding the cytokine receptor common γ-chain (IL2RG) are typical for:
a. Chediak-Higashi syndrome; b. ADA deficiency; c. Wiskott-Aldrich syndrome; d. chronic granulomatous desease; e. X-SCID.
74. T(-)B(-)NK(-) is typical for:
a. Chediak-Higashi syndrome; b. ADA deficiency; c. Wiskott-Aldrich syndrome; d. Chronic granulomatous desease; e. X-SCID.
75. Non-malignant lymphohistiocytic lymphoma-like infiltration of the multiple organs is typical for:
a. Chediak-Higashi syndrome; b. ADA deficiency; c. Wiskott-Aldrich syndrome; d. A-T disease; e. X-SCID
76. T(-)B(+)NK(-) is typical for:
a. Chediak-Higashi syndrome; b. ADA deficiency; c. Wiskott-Aldrich syndrome; d. chronic granulomatous desease; e. X-SCID.
77. The reduced activity of the phagocytes to produce the oxygen components is usually observed in:
a. Chediak-Higashi syndrome; b. ADA deficiency; c. Wiskott-Aldrich syndrome; d. chronic granulomatous disease; e. X-SCID
78. Rapid activation and turnover of complement components can be due to:
a. recurrent infections; b. malignancies; c. increased of the immune complexes formation; d. malnutrition; e. liver dysfunction.
79. C1 esterase inhibitor deficiency can lead to:
a. hereditary angioneurotic edema; b. episodic attacks of localized edema; c. an uncontrolled production of the vasodilators; d. all are correct

MECHANISMS OF TUMORIGENESIS

1. "Benign" represents a tumor containing:
a. poorly differentiated cells; b. highly differentiated cells; c. stromal cells
2. Which statement is correct?
a. benign tumor grows by crab-like infiltration and is likely to metastasize;
b. tumor grows by crab-like infiltration and is likely to metastasize;
c. tumors are more likely to be encapsulated;
d. tumors are not likely to cause death unless its size or location interferes with vital function
3. Which statement is correct?
a. all tumors are cancerous;

b. lipoma is a malignant tumor;
c. sarcomas are cancers that derive from epithelial cells;
d. a leiomyosarcoma is a malignant tumors of smooth muscle.
4. Which statement is correct?
a. most cancers are caused by one factor; b. most cancers are caused by viruses; c. all tumors are cancerous; d. cancer cells are likely to infiltrate the other regions
5. Local tumors sign is:
a. crab-like infiltration; b. formation of metastasis; c. cachexia; d. inhibition of the immune response.
6. Cancer cells are likely to:
a. resemble the site of origin; b. to stay in one place; c. to infiltrate the other regions
7. Metaplasia represents:
a. a reversible, benign, but abnormal change of cell size; b. an irreversible, malignant changes in cells; c. the loss of cellular differentiation; d. all are correct.
8. Anaplasia represents:
a. a reversible, benign, but abnormal change of cell size; b. an irreversible, malignant changes in cells; c. the loss of cellular differentiation; d. all are correct
9. Hyperplasia represents:
a. a reversible, benign, but abnormal change of cell size; b. an irreversible, malignant changes in cells; c. the loss of cellular differentiation; d. all are wrong.
10. Endogenous carcinogens represent the following except:
a. steroids (in general, estrogens); b. intermediate products of aminoacids metabolism; c. polycylic aromatic amine hydrocarbons.
11. Epstein-Barr virus may be involved in the development of the following malignancies except:
a. nasopharyngeal carcinoma; b. squamous cell carcinoma of the cervix; c. Burkitt's lymphoma.
12. Epstein-Barr virus may be involved in the development of:
a. nasopharyngeal carcinoma; b. squamous cell carcinoma of the cervix; c. hepatocellular carcinoma; d. all are correct
13. Burkitt's lymphoma can be developed after the exposure to:
a. Epstein-Barr virus; b. hepatitis B virus; c. human T-cell leukemia virus; d. human papilloma virus; e. all are correct.
14. Squamous cell carcinoma of the cervix can be developed after the exposure to:
a. Epstein-Barr virus; b. hepatitis B virus; c. human T-cell leukaemia virus;
d. human papilloma virus; e. all are correct.
15. p53 is a:
a. proto-oncogene and increased activity of this gene increases the risk of cancer; b. proto-oncogene and decreased activity of this gene decreases the risk of cancer; c. anti-oncogene and decreased activity of this gene increases the risk of cancer; d. anti-oncogene and increased activity of this gene increases the risk of cancer.
16. The anti-tumor activity of p53 protein is realized through:
a. inhibition of cell-cell contacts between cancer cells; b. block of cancer cell cycle and induction of their programmed death (apoptosis); c. induction of hypoxia and tumor

necrosis; d. increased susceptibility of cancer cells to cytotoxic activity of CD8 lymphocytes and NK-killers.
17. The initiation step of carcinogenesis:
a. reversible mutation of DNA; b. precedes the promotion step of carcinogenesis; c. do not alter DNA but make it susceptible to the following mutagenesis; d. second stage of carcinogenesis.
18. Genome variant of the initiation step of carcinogenesis is:
a. activation of previously depressed pro-oncogene; b. point mutation of pro-oncogene; c. expression of oncogene.
19. Epigenetic variant of the initiation step of carcinogenesis is:
a. activation of previously depressed pro-oncogene; b. point mutation of the pro-oncogene; c. expression of the oncogene
20. Promotion stage of carcinogenesis represents:
a. the interactions between carcinogens and DNA sites (termed as a proto-oncogenes);
b. the interactions between tumor cells and growth factors; c. all are correct
21. Heyflick's limit characterizes:
a. cell's ability to undergo mitosis an unlimited times; b. the point mutation of DNA;
c. the ability of cancer cells to proliferate; d. restricted numbers of cell contacts between cancer cells.
22. What statement is wrong?
a. leukemias are malignant tumors of blood; b. cancer cells have decreased cohesiveness; c. cancer cells exhibit a higher degree of contact inhibition than normal cells; d. when cancer cells mutate early in differentiation, they are likely to be more malignant than cancer cells mutate late in differentiation.
23. Formation of metastasis is:
a. infiltration of tissues with cancer cells; b. uncontrolled high-speed proliferation of cancer cells; c. transfer of cancer cells from primary tumor and formation the secondary tumor; d. encapsulation of tumors.
24. The conditions facilitating metastasis formation:
a. hypoxia; b. chronic inflammation, trauma; c. immunodeficiency's; d. anemias.
25. Cancers are usually spread and metastasize via:
a. lymph vessels; b. blood vessels; c. *in situ.*
26. Sarcomas are usually spread and metastasize via:
a. lymph vessels; b. blood vessels; c. *in situ*.
27. Cells involved in recognition of tumor cells are:
a. dendritic cells; b. CD8 T-lymphocytes; c. NK-cells; d. all are true.
28. What statement is wrong? The oncolytic activity of TNF-α is mediated by:
a. activation of thrombosis with following ishemia and necrosis; b. increased synthesis of active oxygen products; c. stimulation of secretion of cytokines with high anti-tumor activity; d. respiratory enzymes deficit or mitochondrial dysfunction
29. Arrange in correct sequence the phases of the anti-tumor defenses:
a. anticarcinogenic, antimutational, anticellular; b. antimutational, anticarcinogenic, anticellular; c. anticellular, antimutational, anticarcinogenic; d. anticarcinogenic, anticellular, antimutational.

30. The anti-cellular phase of anti-tumor resistance includes:
a. recognition of cancer cells by cytotoxic lymphocytes and NK-killers; b. inhibition and inactivation of carcinogens (free oxygen radicals, hydroperoxides etc.); c. reparation of damaged DNA; d. activation of anti-oncogenes (onco-suppressors).
31. The anti-mutational step of anti-tumor resistance includes:
a. recognition of cancer cells by cytotoxic lymphocytes and NK-killers; b. inhibition and inactivation of carcinogens (free oxygen radicals, hydroperoxides etc.);
c. reparation of damaged DNA and activation of anti-ongogens (onco-suppressors).
32. The anti-carcinogenic resistance is mediated by the:
a. recognition of the cancer cells by cytotoxic lymphocytes and NK cells; b. inhibition and inactivation of the carcinogens (free oxygen radicals, hydroperoxides etc.);
c. DNA damage repair; d. activation of the anti-ongogens (onco-suppressors)
33. Biological carcinogens can be inactivated by:
a. immunoglobulins preventing their entry to the host cells; b. inactivation of oxygen radicals with antioxidant enzymes; c. physical and chemical fixation; d. all are correct.
34. Chemical carcinogens can be inactivated by:
a. immunoglobulins preventing their entry to the host cells; b. inactivation of oxygen radicals with antioxidant enzymes; c. physical and chemical fixation; d. all are correct.
35. Physical carcinogens can be inactivated by:
a. immunoglobulins preventing their entry to the host cells; b. inactivation of oxygen radicals with antioxidant enzymes; c. physical and chemical fixation; d. all are correct.
36. If DNA damage is unrepairable, p53 protein induces:
a. an increase of proliferation to repair DNA in the following S-phase; b. the stop of the cell cycle and induce a quiescence; c. apoptosis; d. all are wrong.
37. Mechanism of action of vinca alkaloids is due to:
a. DNA cross-linking or strand-breaking reactions in tumor cells; b. the incorporation into the nuclear acid synthesis and acting as antagonists of folid acide; c. inhibition of the microtubules polymerization resulting in the destruction of the mitotic spindle and arrest of cells in metaphase; d. prevention of the microtubule disassembly into the tubulin monomers and cell cycle arrest in anaphase; e. all are correct.
38. Adjuvant chemotherapy is known as:
a. a therapy given after surgery to reduce the likelihood of the cancer recurrence; b. a therapy given before surgery to downstage the tumor, allowing the surgery to be more successful (less invasive surgery can be performed); c. synonymous of the palliative therapy given to relieve the symptoms and reduce the suffering caused by cancer; d. all are correct.
39. Mechanism of action of aromatase inhibitors is due to:
a. DNA cross-linking or strand-breaking reactions in tumor cells; b. the incorporation into the nuclear acid synthesis and acting as antagonists of folid acide; c. inhibition of the microtubules polymerization resulting in the destruction of the mitotic spindle and arrest of cells in metaphase; d. prevention of the microtubule disassembly into tubulin monomers and cell cycle arrest in anaphase; e. all are wrong.
40. P-glycoprotein is known as a:

a. protein sensing a DNA damage induced by the cytotoxic drugs; b. multidrug resistance protein exerting substances from the cells; c. tumor-suppressor protein; d. all are correct.

41. Neo-adjuvant chemotherapy is known as:

a. a therapy given after surgery to reduce the likelihood of the cancer recurrence; b. a therapy given before surgery to downstage the tumor, allowing the surgery to be more successful (less invasive surgery can be performed); c. synonymous of the palliative therapy given to relieve the symptoms and reduce the suffering caused by cancer; d. all are correct.

42. Mechanism of action of cyclophosphamaide is due to:

a. DNA cross-linking or strand-breaking reactions in tumor cells; b. the incorporation into the nuclear acid synthesis and acting as antagonists of folid acide; c. inhibition of the microtubules polymerization resulting in the destruction of the mitotic spindle and arrest of cells in metaphase; d. prevention of the microtubules disassembly into tubulin monomers and cell cycle arrest in anaphase; e. all are correct.

43. pRb is known as a:

a. tumor-suppressor; b. an inhibitor of the transcription factors of the E2F-family, which are required to get into the S-phase; c. all are correct.

44. The ability of DNA oncoviruses to induce the tumor transformation is due to:

a. binding to and inactivation of the tumor-suppressor gene products (p53, pRb etc.); the insertion into the places which are adjacent to *c-onc* in host cell DNA; c. all are wrong.

45. Aromatase inhibitors are used as a 1st line drugs for the treatment of:

a. colon cancer in eldery patients; b. non-Hodgkin's lymphomas; c. breast cancer in the post-menopausal woman; d. all are correct.

46. Alpha-fetoprotein (AFP) is:

a. normally formed in the fetal liver and elevated with primary liver cancers; b. normally formed in the fetal intestinal tissue and associated with most of colorectal, pancreatic, and gastric tumors; c. normally produced by placenta and increased in respiratory tract and breast tumors; d. all are correct.

47. The oncogenes are:

a. mutated proto-oncogenes (*c-onc*); b. the viral sequences introduces into the host cell genome into the places adjacent to genes controlling cellular growth and proliferation (*c-onc*); c. all are correct.

48. Trastuzumab is:

a. a recombinant humanised monoclonal antibody directed against the HER2 receptor and therefore used for treatment of HER-positive breast cancer; b. chimeric anti-CD20 monoclonal antibody directed against B-lymphocytes and therefore used for treatment of the lymphomas; c. cytotoxic drug inducing DNA cross-links and death of cancer cells; d. aromatase inhibitor used in treatment of breast cancer in postmenopausal women; e. all are wrong.

49. Mechanism of action of the anti-metabolites is due to:

a. DNA cross-linking or strand-breaking reactions in tumor cells; b. the incorporation into the nuclear acid synthesis and acting as antagonists of the endogenous compounds

(e.g. folid acide, purines etc.); c. inhibition of the microtubules polymerization resulting in the destruction of the mitotic spindle and arrest of cells in metaphase; d. prevention of the microtubule disassembly into the tubulin monomers and cell cycle arrest in anaphase; e. all are correct.

50. What statement is wrong?

a. p53 senses DNA damage, induces G1 arrest and induces DNA repair; b. The cells with un-repairable DNA are directed to undergo apoptosis via p53 dependent mechanisms; c. over half of human malignant cells show loss of p53 gene; d. p53 is known as a viral oncogene because it often became inactivated by the viral proteins**.**

51. Carcino-embrionic antigen (CEA) is:

a. normally formed in the fetal liver and elevated in the primary liver cancers; b. normally formed in the fetal intestinal tissue and associated with most colorectal, pancreatic, and gastric tumors; c. normally produced by placenta and increased in respiratory tract and breast tumors; d. all are correct.

52. Tamoxifen is commonly used for the treatment of:

a. HER2-positive breast cancer; b. all types of breast cancers; c. non-Hodgkin's lymphomas; c. breast cancer in post-menopausal woman; d. estrogen-positive (ER+) breast cancer; e. all are correct.

53. p21 is a protein which:

a. acts downstream of p53 in involved in a cell-cycle arrest and apoptosis induction after DNA damage; b. known as a proto-oncogene; c. all are correct.

54. Mechanism of action of tamoxifen is due to:

a. DNA cross-linking or strand-breaking reactions in tumor cells; b. blockage of the extra-adrenal synthesis of estrogen; c. binding of estrogen to the intracellular receptors of estrogen sensitive cancer cells in breast tissue; d. prevention of the microtubules disassembly into tubulin monomers and cell cycle arrest in anaphase; e. all are correct.

55. Prostate-specific antigen (PSA) is:

a. differentiation antigen detectable in the prostate gland and elevated in prostate tumors; b. normally formed in the fetal intestinal tissue and increased specifically in prostate cancer; c. tumor-specific antigen detectable only in prostate tumors; d. all are correct.

56. What statement is wrong?

a. Cell cycle specific drugs are effective only for high growth fraction malignancies such as hematologic cancers; b. cell cycle non-specific drugs are effective for both low-growth (solid tumors) and high growth fraction malignancies; c. cell cycle non-specific drugs are effective only for high growth fraction malignancies.

57. Mechanism of action of aromatase inhibitors is due to:

a. DNA cross-linking or strand-breaking reactions in tumor cells; b. blockage of the extra-adrenal synthesis of estrogen; c. inhibition of the microtubules polymerization resulting in the destruction of the mitotic spindle and arrest of cells in metaphase; d. prevention of the microtubule disassembly into tubulin monomers and cell cycle arrest in anaphase; e. all are wrong.

58. Rituximab is:

a. the recombinant humanised monoclonal antibody directed against the HER2 receptor and therefore used for treatment of HER-positive breast cancer; b. a chimeric anti-CD20 monoclonal antibody directed against B-lymphocytes and therefore used for treatment of the lymphomas; c. a cytotoxic drug inducing DNA cross-links and death of cancer cells; d. the aromatase inhibitor used in treatment of breast cancer in postmenopausal women; e. all are wrong.
59. The ability of RNA oncoviruses to induce the tumor transformation is due to:
a. the insertion into the places which are adjacent to *c-onc* in host cell DNA; b. making a DNA-provirus containing viral oncogen (*v-onc*); c. all are correct

TEST # 4

BLOOD CELLS. THE COMPLETE BLOOD COUNT TEST

1. Which mechanism is true for anemia?
a. loss of red blood cells from the circulation is higher than the body's ability to replace them b. the hematopoietic tissues are activated c. blood turnover is decreased
2. Which mechanism is true for anemia?
a. the hematopoietic tissues are mulfunctioning b. blood production is increased c. neoplastic proliferation of the pluripotent cells of the bone marrow is taking place
3. Which symptom is not specific in anemia?
a. fatigue b. palpitation c. edema
4. Which symptom is not seen in anemia?
a. dizziness b. dim vision c. uremia
5. Common manifestations of all anemias are…
a. the signs of impaired oxygen transport b. jaundice c. impaired coagulation
6. Petechiae and purpura are seen in…
a. hemolytic anemia b. aplastic anemia c. iron deficiency anemia
7. Anisocytosis means…
a. irregular shape b. irregular size c. increased size
8. Poikilocytosis means…
a. irregular shape b. irregular size c. decreased size
9. Which factor can cause acquired hemolytic anemia?
a. drugs b. bacterial toxins c. both d. none of them
10. Defective synthesis of hemoglobin polypeptide chains causes…
a. sickle cell anemia b. aplastic anemia c. thalassemias
11. Abnormal substitution of an amino acid in the hemoglobin molecule causes…
a. aplastic anemia b. thalassemias c. sickle cell anemia
12. Sickle cell anemia results from…
a. inherited disorder of the red cell membrane
b. a point mutation in the p chain of the hemoglobin molecule
c. drug induced disorder of red blood cells
13. What is thalassemia?
a. inherited disorder of the red cell membrane

b. a group of disorders of hemoglobin α or the β chains synthesis
c. a point mutation in the p chain of the hemoglobin molecule
14. Intravascular hemolysis occurs as a result of…
a. complement fixation in transfusion reactions
b. abnormal red cells phagocytosis c. red cells apoptosis
15. Which type of antibodies causes red cell destruction?
a. Ig E b. Ig M c. Ig A
16. Extravascular hemolysis occurs as a result of…
a. abnormal red cells phagocytosis in the spleen.
b. complement fixation in mechanical injury c. red cells apoptosis
17. What test can be used to diagnose immune hemolytic anemias?
a. total blood count test b. bone marrow aspiration c. Coombs' test
18. Almost all types of hemolytic anemia are characterized by…
a. microcytic, hypochromic red cells b. normocytic, normochromic red cells c. hyperchromic red cells
19. The first day after acute blood loss red cells are…
a. hypochromic b. normochromic c. hiperchromic
20. 4-5 days after acute blood loss reticulocytes count is…
a. normal b. increased c. decreased
21. How to explain increased pulse rate in patient with aplastic anemia?
a. it is a cause of the disease b. it is a compensatory reaction
b. it has nothing common with anemia
22. Idiopathic aplastic anemia means…
a. anemia caused by viruses b. anemia of unknown reason
c. anemia caused by immune reaction
23. A reduction of all three hematopoietic cell lines arises in…
a. iron deficiency anemia b. hemolytic anemia c. aplastic anemia
24. Total blood count in aplastic anemia shows…
a. red cells of normal size and color b. increased reticulocyte number
c. hypochromic red cells
25. Iron balance is maintained by the absorption of…
a. 0.5 to 1.5 mg daily b. 0.1 to 0.5 mg daily c. 2.5 to 3.5 mg daily
26. Microcytic hypochromic anemia occurs with…
a. acute blood loss b. chronic blood loss c. B12 deficit
27. The red cells in iron deficiency anemia are…
a. macrocytic b. normocytic and hyperchromic c. microcytic and hypochromic
28. The usual reason for iron deficiency in adults is…
a. chronic blood loss b. bone marrow displasia c. enzyme deficit
29. Which statement is correct ?
a. in both iron deficiency and chronic disease anemia TIBC is increased
b. in both iron deficiency and chronic disease anemia ferritin is increased
c. in both iron deficiency and chronic disease anemia iron is decreased
30. Chronic disease anemia…

a. is similar to hemolysis with normochromic red cells
b. is similar to iron deficiency with microcytic, hypochromic red cells
c. is similar to B12 deficiency with macrocytic red cells
31. Megaloblastic anemias are caused by…
a. bone marrow fatty replacement b. abnormal nucleic acid synthesis
c. hemoglobinopathies
32. A high reticulocyte count indicates that…
a. the bone marrow is unable to produce mature cells
b. the bone marrow is responding to the need for increased red blood cell production
c. the red blood cells are produced in excess
d. all above mentioned mechanisms are correct
33. RBC-3.1 x 10^{12}/L, Hb-62 g/L, Rt-1%, microcytosis. The following values are most likely due to…
a. aplastic anemia b.iron deficiency anemia c.B12 deficiency anemia
d. leukemia
34. RBC-2.7 x 10^{12}/L, Hb-113 g/L, Rt-0,5%, macrocytosis. The following values are most likely due to…
aplastic anemia b.iron deficiency anemia c. B12 deficiency anemia
35. RBC-2.7 x 10^{12}/L, Hb-93 g/L, Rt-0%. The following values are likely due to…
a. aplastic anemia b. iron deficiency anemia c. B12 deficiency anemia d. blood loss
36. A person who is responding to treatment for anemia would be expected to have …
a. a high RBC count
b. a high reticulocyte count
c. a low reticulocyte count
37. Macrocytic hyperchromic anemia occurs with…
a. acute blood loss b. chronic blood loss c. B12 deficit
38. Absolute polycythemia is a rise in hematocrit due to…
a. the increase in total red cell mass b. the decrease in total red cell mass
b. a loss of plasma volume
39. In polycythemia vera, the manifestations are related to…
a. an increase in the red cell count, hemoglobin level and hematocrit
b. decrease in the red cell count and hemoglobin level
c. decreased hemoglobin level and hematocrit
40. A loss of plasma volume leads to…
a. absolute polycythemia b. relative polycythemia c. anemia
41. Secondary polycythemia results from…
a. a physiologic increase in the level of erythropoietin
b. neoplastic proliferation of blood cells c. blood loss
42. Leukocytosis is….
a. neoplastic proliferation of red blood cells
b. elevation of the white blood count c. elevation of lymphocyte count
43. One of major growth factors that act on committed progenitor cells…
a. vasopressin b. erythropoietin c. epinephrin

44. One of the major growth factors that act on committed progenitor cells...
a. histamine b. granulocyte-monocyte colony-stimulating factor c. aldosteron
45. One of the major growth factors that act on committed progenitor cells
a. vasopressin b. thrombopoietin c. bradykinin
46.Thrombocytes, are…
a. circulating cell fragments of the megakaryocytes b. derived from the lymphoid stem cell c. true cells
47. The neutrophils constitute…
a. 5% to 6% of the total number of white blood cells
b. 55% to 65% of the total number of white blood cells
c. 15% to 25% of the total number of white blood cells
48. Neutrophil granules contain…
a. complex polysaccharides b. foreign substances
c. enzymes and oxidizing agents
49. The lymphocytes constitute…
a. 2% to 3% of the white blood cells count
b. 20% to 40% of the white blood cells count
c. 12% to 13% of the white blood cells count
50. Antiparasitic defense of the human body is the function of…
a. eosinophils b. platelets c. neutrophils
51. Allergic reactions are characterized by…
a. eosinophilia b. lymphopenia c. neutropenia
52. “A left shift” indicates
a. the presence of neutrophils more mature than band neutrophils
b. the presence of neutrophils less mature than promyelocytes
c. the presence of neutrophils less mature than segmented neutrophils
53. Which statement is not correct?
a. high levels of neutrophils may indicate a depressed bone marrow
b. high levels of neutrophils may indicate an active inflammation
c. high levels of neutrophils may indicate leukemia
54. Acute viral infection is characterized by…
a. eosinophilia b. lymphocytosis c. basophilia
55. What is leukemoid reaction?
a. neoplastic proliferation of white blood cells b. neoplastic proliferation of red blood cells c. non-neoplastic very high leukocyte number
56. Which statement is wrong?
a. leukemia is a disease in which leukocytes proliferate in an uncontrolled fashion
b. leukemia is a disease in which leukocytes proliferate in the bone marrow
c. leukemia is a disease in which leukocytes proliferate only in lymph nodes
57. Which statement is not correct?
a. acute leukemia is characterized by blast cells that proliferate without undergoing the normal maturation process

b. in chronic leukemia the proliferating neoplastic cells are able to undergo nearly normal maturation,
c. in chronic leukemia the neoplastic cells are under control, that limits the process of proliferation
58. Which statement is correct?
a. the myeloblasts are the committed precursors of lymphocytes
b. the myeloblasts do not normally appear in the peripheral circulation
c. the myeloblasts are able to proliferate
59. Which statement is wrong?
a. the leukemic cells have a diminished capacity for cell differentiation
b. the leukemic cells expand at the expense of normal myeloid or lymphoid lines
c. the leukemic cells cannot suppress cell growth
60. Acute nonlymphoid leukemia is…
a. a bone marrow derived neoplasm composed of myeloblasts
b. a bone marrow derived neoplasm composed of myelocytes
c. a bone marrow derived neoplasm composed of lymphoblasts
61. What cells can be found in the blood count in acute nonlymphoid leukemia?
a. lymphoblasts b. myeloblasts c. metamyelocytes
62. What cells can be found in the blood count in acute lymphoid leukemia?
a. lymphoblasts b. myeloblasts c. metamyelocytes
63. Acute lymphoid leukemia is…
a. a bone marrow derived neoplasm composed of lymphocytes
b. a bone marrow derived neoplasm composed of lymphoblasts
c. a bone marrow derived neoplasm composed of myeloblasts
64. Which statement is correct?
a. 80% of patients with acute myeloid leukemia are children
b. 85% of patients with acute lymphoid leukemia are adults
c. acute myeloid and lymphoid leukemia rises in incidence from age 40
65. What cells can be found in the blood count in chronic lymphoid leukemia?
a. lymphoblasts b. myeloblasts c. lymphocytes
66. The so called Philadelphia chromosome is a…
a. translocation 19-2 b. translocation 9-22 c. translocation 29-12
67. Translocation 15-17 is most commonly seen in…
a. chronic lymphocytic leukemia
b. acute promyelocytic leukemia
c. acute myelocytic leukemia
68. What cells can be found in the blood count in chronic myeloid leukemia?
a. lymphoblasts b. pronormocytes c. myelocytes
69. Leukocytes 7.5 x 10^9/L Neutrophil (55%), Lymphocyte (25%), Monocyte (4%), Eosinophil (1%), Basophil (0%), Blasts (15%).
The following values are due to…
a. chronic lymphoid leukemia b.leukemoid reaction c. acute leukemia

70. Leukocytes 57 x 10^9/L Neutrophil (43%), Lymphocyte (52%), Monocyte (4%), Eosinophil (1%), Basophil (0%). The following values are due to…
a. chronic lymphoid leukemia b. allergic reaction c. acute leukemia
71. Leukocytes 57 x 10^9/L Neutrophil (43%), Lymphocyte (52%), Monocyte (4%), Eosinophil (1%), Basophil (0%).
The following values are due to…
a. chronic lymphoid leukemia b. allergic reaction c. acute leukemia
72. ET-1, AT II, PAF, TXA2…
a. are vasodilators, produced by endotheliocytes
b. are vasoconstrictors, produced by endotheliocytes
c.are vasodilators, produced by platelets
73. In the pathologic states tissue factor appears on…
a. the extravascular cells b. smooth muscle cells c. monocytes
74. During the initiation stage of the blood clotting…
a. large amounts of thrombin are generated b. small amount of thrombin is generated c. thrombin activates platelets
75. During the amplification stage of the blood clotting…
a. large amounts of thrombin are generated b. small amount of thrombin is generated c. thrombin activates platelets, F VII, X , IX
76. During the propagation stage of the blood clotting…
a. large amounts of thrombin are generated b. small amount of thrombin is generated c. thrombin activates platelets
77. An important mechanism of fibrinolytic system is…
a. generation of thrombin b. generation of plasmin c. generation of fibrin
78. Antithrombin is…
a. a clotting factor b. anticoagulant c. growth factor
79. Normal number of platelets in the blood count?
a. 20.000-40.000/mm^3 b. 200.000-400.000/mm^3 c. 2.000-4.000/mm^3
80. Thrombocytopenia is commonly characterized by…
a. petechiae, purpura b. deep tissue bleeding c. both are correct
81. Aplastic anemia is characterized by…
a. thrombocytopenia b. thrombocytosis c. leukocytosis
82. Which statement is wrong?
a. idiopathic thrombocytopenic purpura typically appears in young woman
b. idiopathic thrombocytopenic purpura presents antiplatelet antibody
c. idiopathic thrombocytopenic purpura presents defects of myelocytes
83. Platelets depletion can be present in …
a. thrombotic thrombocytopenic purpura b. disseminated intravascular coagulation c. both d. none of above mentioned
84. The most common inherited haemostatic disorder is…
a. Hemophilia A b. Von Willebrand' s disease c. Hemophilia B
85. Hemophilia A is a … a. acquired clotting disorder b. hereditary clotting disorder c. X – linked disorder of platelets

86. In von Willebrand' s disease…
a. platelet number is reduced b. platelet adhesion is impared
c. platelet number is increased
87. Which statement is wrong?
a. vitamin K deficiency can result from malnutrition
b. vitamin K deficiency can result from obstructive jaundice
c. vitamin K deficiency can result from anemia
88. A number of clotting factors cannot be produced in…
a. liver diseases b. kidney diseases c. heart diseases
89. Ecchymoses are…
a. large areas of hemorrhage b. point areas of hemorrhage
90. Which statement is wrong?
a. individuals with vascular fragility need not be injured before they bleed
b. individuals with vascular fragility need to be injured before they bleed
c. individuals with clotting disorders need to be injured before they bleed
91. Vessel walls are fragile and do not withstand normal pressures…
a. in hereditary clotting factors disorders b. in corticosteroid excess
c. in trombocytopenia
92. DIC means…
a. disseminated intravascular coagulation
b. defibrination syndrome
c. both are correct
93. Which statement is not correct?
a. bleeding may be the presenting symptom in a patient with acute DIC
b. hrombosis may be the presenting symptom in a patient with chronic DIC
c. decreased platelet production is the reason of bleeding in acute DIC
94. Acute DIC can be seen in the following cases except…
a. bile obstruction b. obstetric complications c. gram negative infection
95. Main factors of the arterial trombosis…
a. hypercoagulation, blood stasis
b. disruption of the endothelium, platelet activation
c. thrombophilia, abnormal blood flow
96. Main factors of the venous trombosis…
a. hypocoagulation, activated fibrinolysis
b. disruption of the endothelium, platelet activation
c. thrombophilia, abnormal blood flow
97.Thrombophilia is…
a term for inherited and acquired hypocoagulation disorders
b. a term for inherited and acquired platelets disorders
c. a term for inherited and acquired hypercoagulation disorders

TEST # 5

CARDIOVASCULAR DISORDERS

1. Normal sinus rhythm is defined by…
a. QRS largely regular, P must be positive in limb leads
b. P must be positive in II but negative in Avl
c. each and every QRS is preceded by a P, positive in II
2. Which statement is not correct?
a. in complete AV block the escape rhythm is always fast enough to prevent symptoms
b. partial atrioventricular block is usually asymptomatic
c. complete AV block can result in a slow and unreliable heart beats
3. Most commonly extrasystola arises from…
a. increased automaticity causing a more rapid heart rate
b. a reentrant circuit in abnormal cardiac tissue
c. spontaneous depolarizations causing tachycardia
4. Which statement is correct?
a. the border zone of a myocardial infarction can serve as the substrate for a reentrant circuit
b. reentry is the mechanism responsible for the heart blocks
c. any condition that gives rise to adjacent regions with the same conduction velocities can serve as the substrate for a reentrant circuit
5. Ventricular ectopics have the following characteristics except…
a. abnormally wide QRS complexes
b. the P wave has a n abnormal morphology
c. ST segment and T wave are opposite in polarity to the QRS
6. Which statement is not correct?
a. in ventricular fibrillation, the ventricle quivers but does not contract
b. in ventricular fibrillation there is no cardiac output
c. atrial fibrillation is a condition where there is disorganized electrical and mechanical activity
d. in atrial fibrillation there are no palpable or audible pulses
7. Risk factors for the development of atherosclerosis are the following except…
a. male sex b. age (after 40 years) c. decreased level of LDL
8. Risk factors for the development of atherosclerosis are the following except…
a. smoking b. hypotension c. diabetes
9. Risk factors for the development of atherosclerosis are the following except…
a. hypertension b. gastric ulcer c. hypercholesterolaemia
10. In descending order of frequency, the vessels affected by atherosclerosis are…
a. abdominal aorta, coronary arteries, popliteal arteries
b. descending thoracic aorta, internal carotid arteries
c. circle of Willis, coronary arteries, popliteal arteries
11. In descending order of frequency, the vessels affected by atherosclerosis are…
a. internal carotid arteries,circle of Willis
b. abdominal aorta, coronary arteries, popliteal arteries
c. popliteal arteries, descending thoracic aorta
12. One of the key roles of the endothelium is to regulate the production of…

a. prothrombotic factors b. antithrombotic factors c. both
13. Endothelium-borne vasodilator and platelet inhibitor is…
a. nitric oxide (NO) b. prostaglandin E c. ICAM
14. Endothelium-borne vasodilator and platelet inhibitor is…
a. prostacyclin b. serotonin c. angiotensin
15. Endothelial product that assist leukocytes in their 'homing' and infiltration…
a. vascular cell adhesion molecules (VCAM) b. histamine c. renin
16. Endothelial product that assist leukocytes in their 'homing' and infiltration…
a. prostacyclin b. intercellular adhesion molecules (ICAM) c. aldosteron
17. The early lesion, or fatty streak is characterised by…
a. macrophages and vascular smooth muscle cells full of oxidised LDL cholesterol
b. skeletal muscle cells full of oxidised LDL
c. platelets full of oxidised LDL
18. The early lesion, or fatty streak, is characterised by…
a. proliferating plasma cells b. foam cells within the vascular wall
c. basophile full of oxidized LDL cholesterol
19. Which statement is not correct?
a. stable plaque is prone to thrombotic complications
b. stable plaque produces clinical symptoms when it is large enough
c. unstable plaque is liable to rupture
d. unstable plaque contains large number of inflammatory cells
20. Fatty streaks do not compromise the vascular lumen due to…
a. their eccentricity b. compensatory vascular enlargement c. both
21. Eccentric vascular remodeling in atherosclerosis means…
a. neoplastic proliferation of vascular wall b. compensatory vascular enlargement
c. vascular smooth muscle atrophy
22. The formation of atheroma from fatty streaks depends on…
a. the proliferation of fibroblasts b. proliferation of platelets
c. proliferation of neutrophils
23. The atheromatous plaque is…
a. a mature atheromatous lesion b. an initial lesion c. a revascularization phenomenon
24. The cell, enhancing progression of atherothrombotic lesions is…
a. must cell b. plasma cell c. macrophage
25. A plaque is considered vulnerable when the lipid-core accounts for…
a. more than 90% of the whole b. more than 40% of the whole
c. less than 40% of the whole
26. Degradation of extracellular matrix in atheroma is due mainly to…
a. matrix metalloproteinases b. nucleases c. sodium citrate
27. Key to the onset of acute coronary syndrome (ACS) is…
a. fatty steak formation b. plaque disruption and subsequent thrombus formation
c. hypercholesterolemia
28. What cells are postulated as an important source of the TF in atheroma…
a. erythrocytes b. mast cells c. monocytes/macrophages
29. Calcification, rupture, thrombosis are the characteristics of

a. fatty steak b. plaque remodeling c. complicated atheroma
30. Complicated atheroma may cause the following except…
a. ischemic heart disease b. heart failure c. pericarditis
31. Complicated atheroma may cause the following except…
a. acute renal failure b. cerebrovascular disease c. myocarditis
32. Which statement is wrong?
a. lifestyle changes have no benefit in reducing coronary risk
b. anti-hypertensive drugs are successful in controlling side effects of atherosclerosis
c. keeping cholesterol in the normal range prevent the progression of atherosclerosis
33. The most common cause of coronary artery disease is…
a. atherosclerotic obstruction of vessels b. vasospasm c. embolism
34. Transient episodes of thrombotic occlusion of coronary vessels is seen….
a. in myocardial infarction b. in stable angina c. in unstable angina
35. Chest pain is thought to be mediated by…
a. sympathetic afferent fibers b. parasympathetic fibers c. both
36. The increased work of breathing is due to…
a. vomiting b. shortness of breath c. chest pain
37. AV nodal conduction abnormalities can occur because of
a. reflex activation of the vagus nerve b. activation of sympathetic fibers c. both
38. The average cardiac output in normal adults ranges from…
a. 3.5 to 8 L/minute b. 5 to 10 L/minute c. 1.5 to 3.5 L/minute
39. The preload represents…
a. the volume work of the heart b. the pressure work of the heart c. the heart rate
40. It is called the preload because it is...
a. the work imposed on the heart before the diastole b. the work imposed on the heart before the contraction begins c. largely determined by the vascular tone
41. Preload represents the amount of blood …
a. that the heart cannot pump b. that the heart must pump with each beat c. that remains in the heart after the systole
42. Preload is largely determined by…
a. the angiotensinogen b. the blood pressure c. the venous return to the heart
43. The afterload is…
a. the volume work of the heart b. the pressure work of the heart
c. the heart rate
44. The afterload is…a. the work imposed on the heart before the diastole b. the work imposed on the heart before the contraction begins c. the pressure that the heart must generate to move blood
45. The main source of afterload work on the left heart is…
a. the systemic arterial blood pressure b. the pulmonary arterial pressure
c. the venous pressure
46. The main source of afterload work on the right heart is…
a. the systemic arterial blood pressure b. the pulmonary arterial pressure
c. the venous pressure
47. Sympathetic stimulation produces…

a. a negative inotropic effect b. a positive inotropic effect c. decrease in the available calcium
48. The heart rate influences cardiac output by…
a. determining the frequency with which the ventricle contracts
b. determining muscle force c. determining vascular tone
49. Heart rate determines…
a. the force acquired for blood pumping b. the time spent in diastolic filling
c. the time spent in blood flow through the body
50. The time spent in diastolic filling of the ventricles becomes…
a. shorter as the heart rate increases b. shorter as the heart rate decreases c. longer as the heart rate increases
51. In systolic dysfunction of the heart…
a. increased stroke volume is seen b. reduced stroke volume is seen
c. increase in cardiac output is seen
52. Diastolic dysfunction can be present in following cases except…
a. decreased relaxation of the ventricle b. decreased elastic recoil of the ventricle c. decreased stiffness of the ventricle
53. Which statement is wrong?
a. the work of breathing increases as the patient tries to distend stiff lungs
b. respiratory muscle fatigue causes the sensation of dyspnea
c. details of the mechanisms for the sensation of breathlessness are well known
54. Sudden onset of severe respiratory distress at night is called…
a. breathlessness b. paroxysmal nocturnal dyspnea c. fatigue
55. Sudden onset of severe respiratory distress at night is due to…
a. decreased stiffness of the ventricle b. decreased elastic recoil c. the reduced adrenergic support of ventricular function
56. Nocturia means…
a. reduced renal perfusion b. normalized diuresis at night c. decreased diuresis
57. Symptoms of right ventricular failure include the following except
a. pedal edema b. abdominal pain c. increased diuresis
58. Primary right ventricular failure can be due to…
a. aortal valve stenosis b. pulmonary hypertension c. essential hypertension
59. Left ventricular failure can cause right ventricular failure because of
a. the increased preload placed on the right ventricle
b. the decreased afterload placed on the right ventricle
c. the increased afterload placed on the right ventricle
60. Chronic pulmonary obstruction usually causes…
a. left ventricular failure b. right ventricular failure c. renal failure
61. Which statement is wrong?
a. in patients with right-sided failure due to pulmonary disease, shortness of breath may be a manifestation of the underlying disease
b. in patients with right ventricular failure, congestion of the hepatic veins with ascites can contribute to the sensation of dyspnea
c. reduced right-sided cardiac output can cause metabolic alkalosis

62. Symptoms of right ventricular failure include the following except
a. accumulation of fluid in the lung venous circulation b. generalized edema (anasarca) c. ascites
63. There is a customary division of hypertension into two categories… a. primary and secondary b. active and passive c. hereditary and acquired
64. The majority of hypertensive patients will have…
a. essential hypertension, of unknown etiology b. secondary hypertension, where the cause is determined c. preactive hypertension
65. Factors implicated in hypertension include the following except…
a. genetic factors b. dietary factors c. immune factors
66. Factors implicated in hypertension include the following except…
a. role of the sympathetic nervous system b. role of the kidney
c. role of bronchial tone
67. A patient is said to have primary hypertension…
a. when the blood pressure is 130/80mm Hg
b. when the known causes of hypertension have been excluded
c. when the origin of the elevated blood pressure is known
68. Secondary hypertension may be due to…
a. renal disease b. lung disease c. stomach disease
69. Secondary hypertension may be due to…
a. pregnancy b. acute pancreatitis c. jaundice
70. Renal disease can cause hypertension by…
a. relative or absolute volume loss b. histamine mediated increased permeability c. vasopressin and angiotensin increased vascular resistance
71. Adrenal disease can cause hypertension by…
a. excess secretion of aldosterone
b. excess secretion of NO c. excess secretion of prostacyclin
72. Adrenal disease can cause hypertension by…
a. increased production of cortisol b. increased production of thrombin c. increased production of erythropoietin
73. Adrenal disease can cause hypertension by…
a. complement production b. cystein production c. cateholamine production
74. Mild form of hypertension is characterized by…
a. systolic pressure 130-139mmHg b. systolic pressure 140-159 mmHg
c. systolic pressure 159-160 mmHg
75. Severe form of hypertension is characterized by…
a. systolic pressure 150 mmHg b. systolic pressure 180 mmHg
c. systolic pressure 160 mmHg
76. Hypertension causes an increased …
a. preload to be placed on the heart b. interload to be placed on the heart
c. afterload to be placed on the heart.
77. Hypertension can produce papilledema that means….
a. narrowing and wall thickening in the retinal arterioles

b. rupture of the vessels c. swelling of the optic nerve
78. Shock can be defined as…
a. a clinical syndrome b. a disease c. a specific sign
79. The primary mechanism of the septic shock is…
a. cardiac dysfunction b. volume loss c. volume maldistribution
80. The primary mechanism of the anaphylactic shock is…
a. cardiac dysfunction b. volume loss c. volume maldistribution
81. The primary mechanism of shock due to the myocardial infarction is…
a. cardiac dysfunction b. volume loss c. volume maldistribution
82. The primary mechanism of the shock due to the blood loss is…
a. cardiac dysfunction b. volume loss c. volume maldistribution
83. Common mechanism for all shocks is…
a. volume excess b. multiple organ underperfusion c. increased pump function of the heart
84. Electrical dysfunction of the heart can cause shock by the following mechanisms except…
a. tachyarrhythmia b. bradyarrhythmia c. 1 degree AV block
85. Tachyarrhythmia results in…
a. shortness of diastole, thus decreasing diastolic filling
b. shortness of diastole, thus increasing preload
c. shortness of diastole, thus decreasing afterlaod
86. Bradyarrhythmias arise from the following except…
a. loss of normal pacemaker activity in the SA node
b. block of the impulse at the AV node
c.increased activity of the SA node
87. Mechanical dysfunction of the heart is most often due to…
a. primary increase of systolic function b. myocardial infarction
c. compensated congestive heart failure
88. Obstructive shock results from…..
a. cardiac tamponade b. blood loss c. endotoxemia
89. Loss of one-fifth of the normal blood volume produces…
a. cardiogenic shock b. hypovolemic shock c. obstructive shock
90. Symptoms and sings of shock include the following except…
a. loss of consciousness b. oliguria c. hypertension
91. Symptoms and sings of shock include the following except…
a. cold and clammy skin b. polyuria c. shortness of breath
92. Which statement is not correct?
a. both cardiogenic and hypovolemic shocks result in temporary blood flow centralization
b. both septic and anaphylactic shocks result in initial blood flow decentralization
c. both cardiogenic and anaphylactic shocks result in blood flow centralization
93. Sepsis usually is caused by…
a. gram-negative bacteremia . b. viruses c. worms
94. Vital organs fials in shock as a result of…

a. hypoxia b. inflammation c. immunodeficiency
95. Which statement is wrong?
a. in general shock is a medical emergency b. one of the main aims for the shock treatment is fluid replacement c. bradiarrhythmias are treated inducing parasympathetic tone
96. Anaphylactic shock is treated with …
a. adrenalin and corticosteroids b. adenosin c. statins and antihypertensives
97. Which statement concerning shock progression is wrong?
a. as the blood pressure decreases tissue perfusion fails
b. tissue hyperperfusion and oxygenation leads to organ failure
c. reversible shock progress to irreversible shock due to hypoxia tissue damage

TEST # 6

PULMONARY DISEASES

1. Tidal volume (V_T) is:
a. the amount of air that can be forcibly expired at the end of normal expiration
b. the amount of gas remaining in the lungs at the end of a maximal exhalation
c. the amount of gas inhaled and exhaled with each resting breath.
d. the amount of gas in the lungs at the end of a resting tidal breath
e. all are correct
2. Inspiratory reserve volume (IRV) is:
a. the amount of air that can be forcibly expired at the end of normal expiration
b. the amount of gas inhaled and exhaled with each resting breath.
c. the amount of gas remaining in the lungs at the end of a maximal exhalation
d. the total amount of gas that can be exhaled following a maximal inhalation
e. the amount of air that can be forcibly inspired at the end of normal inspiration
3. The inspiratory capacity (IC) is defined as:
a. the total amount of gas that can be exhaled following a maximal inhalation
b. the tidal volume (V_T) plus the inspiratory residual volume (IRV)
c. the amount of air that can be forcibly inspired at the end of normal expiration
d. total lung capacity (TLC) minus the residual volume (RV) e. all are wrong
4. The vital capacity (VC) is defined as:
a. the total amount of gas that can be exhaled following a minimal inhalation
b. the tidal volume (V_T) plus the inspiratory residual volume (IRV)
c. the amount of air that can be forcibly inspired at the end of normal expiration
d. total lung capacity (TLC) minus the residual volume (RV) e. all are correct
5. The total lung capacity (TLC) is defined as:
a. total amount of gas that can be exhaled following a maximal inhalation
b. total amount of gas in the lungs at the end of a maximal inhalation
c. the amount of gas that can be forcibly inspired at the end of normal expiration
d. the amount of gas inhaled and exhaled with each resting breath e. all are wrong
6. The functional residual capacity (FRC) is defined as:
a. total lung capacity (TLC) minus the residual volume (RV)

b. the sum of residual volume (RV) and expiratory reserve volume (ERV)
c. total lung capacity (TLC) minus the residual volume (RV).
d. the amount of gas inhaled and exhaled with each resting breath e. all are correct
7. Expiratory reserve volume (ERV) is defined as:
a. the amount of air that can be forcibly expired at the end of normal expiration
b. the amount of air, which can be exhaled on bottom of the tidal volume
c. vital capacity (VC) minus the inspiratory capacity (IC) d. all are correct
8. Residual volume (IRV) is:
a. the amount of air that can be forcibly expired at the end of normal expiration
b. the amount of air remaining in the lungs at the end of a maximal exhalation
c. the amount of gas in the lungs at the end of a resting tidal breath d. all are correct
9. The index Tiffno represents:
a. VC/FVC ratio b. V_T/FVC ratio c. FEV_1/FVC ratio d. FEV_1 / VC ratio e. all are wrong
10. The volume of air expelled by normal subjects in the first second is:
a. 15% of the forced vital capacity (FVC) b. 25% of the FVC c. 50% of the FVC
d. 75% of the expiratory reserve volume (ERV) e. all are wrong
11. Pulmonary function tests in chronic bronchitis are the following except:
a. ↓ FEV_1 b. ↓ FVC c. ↓ FEV_1/FVC ratio d. ↓ D_LCO e. bronchial hyperresponsiveness
12. Pulmonary function tests in emphysema are the following except:
a. ↓ FEV_1 b. ↓ FVC c. ↓ FEV_1/FVC ratio d. ↓ D_LCO e. ↓ TLC f. ↑ RV
13. Peak Expiratory Flow Rate indicates the status of…
a. small airways b. medium size bronchi c. trachea and main bronchi
14. Forced Expiratory Flow at 75% indicates the status of…
a. large airways b. medium size bronchi c. small airways
d. main bronchi
15 Specific bronchial hyperresponsiveness is present in…
a. chronic bronchitis b. emphysema c. interstitial pulmonary fibrosis
d. bronchial asthma e. all are correct
16 Centriacinar emphysema is most frequently associated with:
a. α1-protease inhibitor deficiency b. prolonged smoking c. chronic bronchitis
d. interstitial pulmonary fibrosis e. all are correct
17 Panacinar emphysema is most frequently associated with:
a. α1-protease inhibitor deficiency b. prolonged smoking c. chronic bronchitis d. interstitial pulmonary fibrosis e. all are correct
18. Macrophage-derived factor involved in lung parenchyma injury (in emphysema pathogenesis) is the:
a. tissue factor b. metalloprotease c. both are wrong
19. The most important identified single risk factor for the evolution of COPD (other than cigarette smoking) is:
a. deficiency of α_1-protease inhibitor b. high succeptibility to mucus hypersecretion
c. inability to activate free oxygen radicals, hydroperoxides etc. c. all are wrong
20. Oxidants involved in lung parenchyma injury are the following except:
a. smoking b. respiratory burst products (e.g. superoxide anion)

c. superoxide dismutase, glutathione, and catalase
21. Factors able to protect lung parenchyma against oxidant injury are the following except:
a. superoxide dismutase b. catalase c. elastase d. glutathione
22. Normal or increased values for FEV_1/FVC are typical to:
a. obstructive lung diseases b. restrictive lung diseases c. all are wrong
23. The changes in FEV_1 represent the pathologic processes located predominantly in:
a. lung parenchyma b. conducting airways c. all are wrong
24. The function of conductive airways remains normal in:
a. obstructive lung diseases b. restrictive lung diseases c. all are wrong
25. The function of pulmonary parenchyma remains normal in:
a. obstructive lung diseases b. restrictive lung diseases c. all are wrong
26. Decreased values for FEV_1/FVC are typical to:
a. obstructive lung diseases b. restrictive lung diseases c. all are correct
27. FEV_1 is disproportionately reduced as compared to the FVC, resulting in a low FEV_1/FVC ratio:
a. in restrictive lung diseases b. in obstructive lung diseases c. all are correct
28. FEV_1 and FVC fall proportionately in:
a. restrictive lung diseases b. obstructive lung diseases c. all are correct
29. The changes in FVC represent the pathologic processes located predominantly in:
a. lung parenchyma b. conducting airways c. both wrong
30. Ratio of ventilation to perfusion is highest:
a. at the apex of the lung b. at the base of the lung c. all are wrong
31. Ratio of ventilation to perfusion is lowest:
a. at the apex of the lung b. at the base of the lung c. all are wrong
32. The increase of the V/Q ratio represents the pathologic processes referred as a:
a. alveolar dead space b. shunt c. both d. all are wrong
33. The term «alveolar dead space» is defined as:
a. ventilation without perfusion b. perfusion without ventilation c. both correct
34. The anatomic dead space is defined as:
a. gas-exchanging regions of the lung are ventilated but not perfused b. gas-exchanging regions of the lung are perfused but not ventilated c. both d. all are wrong
35. The areas that do not participate in gas exchange in normal lung are referred to:
a. alveolar dead space b. anatomic dead space c. both d. both wrong
36. The alveolar dead space is defined as:
a. gas-exchanging regions of the lung are ventilated but not perfused b. gas-exchanging regions of the lung are perfused but not ventilated c. both d. both wrong
37. The term «shunt» is defined as:
a. ventilation without perfusion b. perfusion without ventilation c. both correct
38. The decrease of the V/Q ratio represents the pathologic processes referred as a:
a. alveolar dead space b. shunt c. both d. both wrong
39. Technetium 99m, coupled with macroaggregated albumin (MAA) is used to assess:
a. lung ventilation in a ventilation perfusion scanning b. lung perfusion in a ventilation perfusion scanning c. diffusion lung capacity d. all are correct

40. Krypton 81m is used to assess:
a. lung ventilation in a ventilation perfusion scanning b. lung perfusion in a ventilation perfusion scanning c. diffusion lung capacity d. all are correct
41. D_LCO test is used to assess:
a. lung ventilation in a ventilation perfusion scanning b. lung perfusion in a ventilation perfusion scanning c. diffusion lung capacity d. all are correct
42. In which case increasing the fraction of inspired oxygen will not improve oxygenation of blood?
a. in hypoventilation b. in physiological shunt c. at increased altitude
43. Resting pulmonary artery blood flow is approximately:
a. 2 L/min b. 3 L/min c. 4 L/min d. 5 L/min e. all are wrong
44. The hyperventilation of resting respiratory units is able to compensate…
a. a. rise in Pco_2 (hypercapnia) b. fall in Po_2 (hypoxemia) c. both d. all are wrong
45. Resting alveolar ventilation is approximately:
a. 2 L/min b. 3 L/min c. 3,5 L/min d. 6 L/min e. all are wrong
46. Events in the pathophysiology of idiopathic pulmonary fibrosis (IPF) are the following except:
a. initial tissue injury
b. vascular injury and activation, with increased permeability, exudation of plasma proteins and variable thrombosis and thrombolysis
c. epithelial injury and activation, with loss of barrier integrity and release of proinflammatory mediators
d. reduced mucociliary clearance function as a consequence of metaplasia of ciliated columnar epithelium
e. increased leukocyte adherence to activated endothelium, with transit of activated leukocytes into the interstitium
f. increased matrix production
47. Pulmonary function tests in idiopathic pulmonary fibrosis are the following except:
a. ↓ FEV_1 b. ↓ FVC c. ↓FEV_1/FVC ratio d. ↓ D_LCO e. ↓ TLC
48. Cardiogenic pulmonary edema is typically a consequence of the following factors except:
a. increased pulmonary venous pressure (causing increased capillary hydrostatic pressure)
b. increased alveolar surface tension (lowering interstitial hydrostatic pressure),
c. loss of integrity of the alveolar epithelium and vascular endothelium d. decreased capillary colloid osmotic pressure
49. Factor involved in non-cardiogenic pulmonary edema pathogenesis is:
a. increased pulmonary venous pressure (causing increased capillary hydrostatic pressure)
b. loss of integrity of the alveolar epithelium and vascular endothelium
c. decreased alveolar surface tension
d. decreased capillary colloid osmotic pressure

TEST # 7

LIVER DISEASES

1. Most common factors of the liver injury?
a. immune and toxic b. hypoxia and toxic c. hypoxia and immune
2. «Shot-incubation hepatitis» is caused by…
a. HBV b. HAV c. HDV
3. «Long-incubation hepatitis» is caused by…
a. HBV b. HAV c. HDV
4. «Posttrasfusion hepatitis» is caused by…
a. HAV b. HBV c. HCV
5. Hepatitis A virus is…
a. a small RNA virus b. a large RNA virus c. a DNA virus
6. Hepatitis A virus causes liver disease…
a. by direct killing of hepatocytes b. mainly by the host´s immune response to infected hepatocytes c. by bacterial syperinfection
7. Hepatitis A virus is spread by…
a. the fecal-oral route b. the intimate contacts c. the infected blood
8. Hepatitis B is caused by…
a. a DNA virus b. a RNA virus c. E. coli
9. Hepatitis B virus is transmitted by…
a. by fecal-oral route b. by sexual contact c. by contact with infected food
10. Which statement is true for the HBV…
a. this virus directly kills the cells it infects
b. the infected hepatocytes die as a consequence of immune attack
c. when immune response is adequate chronic hepatitis develops
11. Which hepatitis virus requires helper function of HBV?
a. HAV b. HCV c. HDV
12. Predictable dose-dependent toxic hepatic injury is due to the following except…
a. lipid peroxidation b. inhibition of membrane K/Na ATP-ase
c. lymphocyte cytotoxicity
13. Jaundice is typically seen 4 – 8 weeks after exposure…
a. in hepatitis A b. in hepatitis B c. in toxin-induced hepatitis
14. Jaundice occurs from weeks 8 to 20 after exposure…
a. in hepatitis A b. in hepatitis B c. in toxin-induced hepatitis
15. Jaundice occurs at any time during injury…
a. in hepatitis A b. in hepatitis B c. in toxin-induced hepatitis
16. The main contributors to viral clearance in acute hepatitis are…
a. antiviral antibodies b. CD8-cytotoxic lymphocytes c. Th2 lymphocytes
17. Which factors are important in pathogenesis of the extrahepatic manifestations of acute viral hepatitis?
a. immunologic b. humoral c. neurologic
18. Angioedema, arthralgias and arthritis are…
a. primary manifestations of acute viral hepatitis b. extrahepatic manifestations of acute viral hepatitis c. secondary manifestations of acute viral hepatitis

19. …. has both direct and indirect toxic effects on the liver.
a. sodium b. glucose c. ethanol
20. Increasing the fluidity of membranes and thereby disrupting cellular functions….
a. is a direct effect of ethanol b. is a indirect effect of ethanol
c. is the only effect of ethanol
21. Oxidation of ethanol to acetaldehyde and then to acetate, with the generation of NADH and ATP…
a. is a direct effect of ethanol
b. is a indirect effect of ethanol c. is the only effect of ethanol
22. Elevated serum cholesterol level is detected. Which statement is not correct explanation?
a. liver is unable to clear LDL cholesterol from the bloodstream
b. biliary tract obstruction blocks cholesterol excretion
c. fat malabsorption prevents cholesterol excretion
23. The prodrome, the icteric phase, and the convalescent phase are for…
a. chronic viral hepatitis b. acute viral hepatitis c. cirrhosis
24. The prodrome is characterized by the following symptoms and signs except…
a. jaundice b. fatigue c. mild fever
25. The prodrome is characterized by the following symptoms and signs except…
a. malaise b. nausea c. encephalopathy
26. The prodrome is characterized by the following symptoms and signs except…
a. headache b. arthralgias c. elevated ALT
27. Coagulopathy in acute hepatitis is more rarely caused by…
a. loss of vitamin K absorptive capacity
b. decreased coagulation factor synthesis
c. loss of clearance of activated clotting factors
28. Coagulopathy in which the prothrombin time can be corrected by vitamin K injections but not by oral vitamin K suggests…
a. loss of clearance of activated clotting factors b. cholestatic disease
c. decreased coagulation factor synthesis
29. If the prothrombin time cannot be corrected with either oral or parenteral vitamin K…
a. inability to absorb vitamin K should be suspected
b. inability to synthesize clotting factors should be suspected
c. inability to clear clotting factors should be suspected
30. …. is believed to be related to γ-aminobutyric acid (GABA) not be metabolized, failure of detoxification of ammonia, cerebral edema.
a. jaundice b. encephalopathy c. arthralgia
31. Disorder characterized by the combination of liver cell necrosis and inflammation persisting for more than 6 months…
a. acute hepatitis b. chronic hepatitis c. liver failure
32. Chronic hepatitis most commonly is caused by…
a. infection with hepatitis viruses A and D b. infection with hepatitis viruses D and E
c. infection with hepatitis viruses B and C

33. Viral antigens expressed on the hepatocyte cell surface are associated with…
a. class I MHC determinants b. class II MHC determinants
34. In alcoholic hepatitis, repeated episodes of injury cause the following except…
a. necrosis b. fibrosis c. reorientation
35. Many patients with idiopathic chronic active hepatitis manifest with…
a. allergic disorders b. autoimmune disorders c. infectious disorders
36. Severe liver disease can result in…
a. hypoglycemia b. hyperglycemia c. both
37. Cholestasis is present. Which of the following should not be expected?
a. a failure to solubilize dietary lipids and fat-soluble vitamins
b. decreased albumin synthesis, manifested as edema
c. deposition of bile salts in the skin, manifested as itching
38. In patients with severe liver disease, infections can rapidly decompensate into sepsis due to…
a. decraesed clearance of bacteria by liver endothelial cells b. decreased clearance of bacteria by hepatocytes c. decreased clearance of bacteria by Kupffer cells
39. Altered mental status in liver diseases is due to…
a. increased creatinine level
b. impairment of the liver's ability to excrete urea
c. impairment of the liver's ability to detoxify ammonia
40. Which statement is not correct?
a. an elevation in the level of serum alkaline phosphatase specifically indicates bile ducts disease
b. an elevation in the level of serum alkaline phosphatase can be seen in bile duct obstruction
c. an elevation in the level of serum alkaline phosphatase can be seen in primary biliary cirrhosis
41. Which statement is correct?
a. jaundice is a disease, characterized by yellowing of the skin and sclera
b. jaundice is a syndrome, indicating liver disease
c. jaundice is a syndrome, resulting from hyperbilirubinemia
42. Physiologic jaundice is the name for…
a. jaundice seen in anemias b. jaundice commonly seen in healthy babies
c. jaundice seen in asymptomatic case of hepatitis
43. Blood incompatibilities would cause…
a. pre-hepatic jaundice b. hepatic jaundice c. post-hepatic jaundice
44. Causes of hepatic jaundice in adults include the following except…
a. hemolytic anemias b. viral hepatitis c. alcoholic liver disease
45. Causes of post-hepatic jaundice in adults include the following except
a. blocked bile ducts b. blood incompatibility c. cancer of the pancreas
46. Hyperbilirubinemia refers to…
a. serum bilirubin concentration <17 micromol/l
b. serum bilirubin concentration >17 micromol/l

c. serum bilirubin concentration >8 micromol/l

47. Which statement is wrong?

a. unconjugated hyperbilirubinemia is associated with increased red blood cell destruction

b. unconjugated hyperbilirubinemia is associated with reduced hepatic bilirubin uptake

c. intrinsic liver disease and extrahepatic biliary obstruction are the primary causes of unconjugated hyperbilirubinemia

48. Bilirubin ↑, ALT normal; reticulocytes normal; prothrombin time↑; + parenteral vitamin K falls, urinary changes: urobilinogen absent, faecal changes: stercobilinogen absent. Laboratory findings are due to…

a. pre-hepatic jaundice b. hepatic jaundice c. post-hepatic jaundice

49. Bilirubin ↑ AST ↑;ALT ↑; reticulocytes normal; prothrombin time ↑; urinary changes: bilirubin: increased, urobilinogen: normal, faecal changes: stercobilinogen: normal. Laboratory findings are due to…

a. pre-hepatic jaundice b. hepatic jaundice c. post-hepatic jaundice

50. Bilirubin ↑; AST normal; ALT normal; reticulocytes ↑; urinary changes: bilirubin: absent, urobilinogen: increased, faecal changes: stercobilinogen: normal. Laboratory findings are due to…

a. pre-hepatic jaundice b. hepatic jaundice c. post-hepatic jaundice

KIDNEY DISEASES

1. Acute renal failure in sepsis and anaphylaxis is initially due to…

a. inadequate blood flow to kidney resulting from the volume loss

b. volume maldistribution leading to inadequate blood flow to kidney

c. renal artery obstruction leading to hypoperfusion

2. Prerenal causes of acute renal failure are the following except…

a. volume loss, hemorrhage, sequestration of fluid in burns b. acute tubular necrosis c. volume maldistribution

3. Acute renal failure in glomerulonephritis is initially due to…

a. renal artery obstruction leading to hypoperfusion

b. inadequate blood flow to kidney resulting from the volume maldistribution

c. inflammatory process resulting in the direct nephron damage

4. Intrarenal causes of acute renal failure are the following except…

a. inflammatory diseases such as glomerulonephritis b. sequestration of fluid in burns

c. acute tubular necrosis due to poisons, drugs

5. ARF causes that result in urinary tract obstruction are…

a. postrenal b. prerenal c. intrarenal

6. Postrenal causes of acute renal failure are the following except…

a. renal stones b. uretral occlusion c. volume loss

7. According to the tubular theory of ARF pathogenesis…

a. occlusion of the tubular lumen with cellular debris decreases intratubular pressure

b. decreased renal perfusion pressure reduces glomerular perfusion pressure and glomerular filtration

c. occlusion of the tubular lumen increases intratubular pressure sufficiently to decrease net filtration pressure
8. According to the vascular theory of ARF pathogenesis…
a. occlusion of the tubular lumen increases intratubular pressure sufficiently to decrease net filtration pressure
b. afferent arteriolar vasoconstriction and efferent arteriolar vasodilation reduces glomerular filtration
c. decreased glomerular filtration results from the afferent arteriolar vasodilation and efferent arteriolar vasoconstriction
9. Prerenal azotemia is a…
a. elevated BUN without tubular necrosis b. increase in GFR c. decreased sodium reabsorbtion
10. Which statement is not correct?
a. the fractional excretion of sodium is an indicator of progressed from prerenal azotemia to acute tubular necrosis.
b. in simple prerenal azotemia, over 99% of filtered sodium will be reabsorbed
c. the fractional excretion of sodium is less than 1% when the Na reabsorbtion is impared
11. Chronic renal failure is…
a. a reversible clinical syndrome, due to the long-standing renal impairment
b. an irreversible clinical syndrome, due to progressive renal impairment and its effects on many types of tissues c. is a clinical syndrome characterized by azotemia
12. Which statement is not correct?
a. up to 50% of nephrons can be lost without any evidence of functional impairment
b. when GFR is reduced to the 3-5% range, only mild degree of azotemia is observed
c. patients with 30-50% of GFR can easily become uremic with any added stress
13. Which mechanism is true for CRF…
a. injury to the kidney results in hyperplasia of tubular epithelial cells
b. kidney injury results in irreversible loss of nephrons
c. lower functional burden is performed by fewer nephrons
14. Which mechanism is not true for CRF…
a. death and sloughing of tubular epithelial cells is followed by their regeneration
b. compensatory hyperfiltration predisposes to glomerular sclerosis
c. a greater functional burden is manifested as an increase in glomerular filtration pressure and hyperfiltration
15. Elevation of blood levels of urea and creatinine is called…
a. azotemia b. uremia c. chronic renal failure
16. A combination of the toxic effects in CRF is called…
a. azotemia b. hematuria c. uremia
17. The pathogenesis of chronic renal failure derives from the toxic effects of...
a. retained erythropoietin b. retained nitrogen-containing products of protein metabolism c. retained insulinase
18. Continued excessive sodium ingestion in CRF will contribute to…
a. weight gain b. hyponatremia c. hypertension

19 Dysrhythmias in CRF are mainly due to…
a. azotemia b. hyperkaliemia c. proteinuria
20. In chronic renal failure metabolic acidosis is due to the following except...
a. the diminished capacity to reabsorb H^+ b. the diminished capacity to excrete acid c. the diminished capacity to generate buffers
22. Increased susceptibility to infections in uremia is due to the following except…
a. the suppression of lymphoid cells b. the suppression of chemotaxis
c. the suppression of degranulation
23. «Restless legs» syndrome is characterized by the following except…
a. painful lower extremities b. sense of discomfort of the lower extremities
c. involuntary movements of the lower extremities
24. A distictive form of bad breath due to degradation of urea to ammonia by enzymes in the saliva. a. uremic frost b. uremic fetor c. uremic poison
25. The determinants of glomerular filtration are the following except…
a. the blood flow and filtration pressure b. the physico-chemical properties of the filtrate c. the structure and the surface area of the tubular wall
26. The determinants of glomerular filtration are the following except…
a. the structure of the tubular epithelium b. the structure of the capillary wall c. the surface area of the capillary wall
27. The net effective filtration pressure is a result of…
a. the sum of the pressure in Bowman's capsule and the plasma colloidal osmotic pressure b. the intracapillary pressure minus the sum of the pressure in Bowman's capsule and the plasma colloidal osmotic pressure c. the intracapillary pressure and the plasma colloidal osmotic pressure
28. Elevation of blood pressure and intracapillary flow will both lead to…
a. a decrease in filtration b. an increase in filtration c. unchanged filtration
29. The interplay of afferent and efferent arteriolar constriction and dilatation is known as….
a. autoregulation b. decompensation c. disregulation
30. An important players of glomerular autoregulation are…
a. aldosterone, cortisone b. cytokines, lymphokines
c. angiotensin II, prostaglandins
31. When the systemic blood pressure rises…
a. the dilation of the afferent arteriole exists b. the constriction of the afferent arteriole exists c. constriction of the efferent arteriole exists
32. At a drop in systemic pressure…
a. the afferent arteriole is dilated b. efferent arteriole is constricted
c. both changes exist
33. The filtration equilibrium illustrates…
a. the contribution of the colloidal osmotic pressure in the net filtration pressure
b. the relative contributions of the three forms of pressure which result in the net filtration pressure c. the contribution of the Bowman's capsule pressure in the net filtration pressure
34. The physico-chemical properties of the filtrate are…

a. the sodium concentration and osmolality b. the size, charge and the molecular configuration c. the blood pressure and viscosity
35. Hypertension usually leads to…
a. tubular cell dysfunction b. narrowing of arteriolar lumina
c. changes of glomerulus charge
36. Hypotension usually leads to…
a. increase in glomerular filtration b. tubular cell dysfunction and necrosis
c. narrowing of arteriolar lumina
37. Which statement is not correct?
a. the glomerular filter can be cloggede by endothelial swelling during acute inflammation which results in decreased filtration
b. the podocytes can be injured, allowing the loss of size and charge selectivity which results in decreased filtration
c. the glomegular filter can be clogged by connective tissue deposition in chronic inflammation which results in decreased filtration
38. The normal glomerular filtration rate is…
a. 200 ml/min b. 20 ml/min c. 120 ml/min
39. Measurement of glomerular filtration rate requires determination of the concentrations in plasma and urine of a substance…
a. which is freely filtered at the glomerulus b. which is freely reabsorbed by the renal tubules c. which is freely filtered at the glomerulus, and is neither reabsorbed nor secreted by the renal tubules
40. Nephrotic syndrome is manifested by the following except…
a. proteinuria, particularly albuminuria b. hypoalbuminemia, edema
c. hypolipidemia
41. Infections with β-hemolytic streptococcus is the etiologic factor for…
a. asymptomatic urinary abnormalities b. acute postinfectious glomerulonephritis c. nephrotic syndrome
42. Glomerulonephritis and nephrotic syndrome represent…
a. immune-mediated renal damage
b. toxic renal damage
c. neuro-mediated renal damage
43. Antibodies can be involved in glomerular damage by…
a. leukocyte inactivation b. binding and activation of complement
c. both mechanisms
44. The complement components can be involved in glomerular damage by…
a. C3a and C5a mediated chemotaxis b. direct cytotoxic effect through C5b-9 c. both mechanisms
45. Choose the correct signs of nephritic syndrome.
a. usually without a decrease of GFR, leukocyturia
b. usually slight proteinuria, systemic hypertension
c. profoundly decreased plasma albumins, hyperlipidemia
46. The anemia in chronic renal failure patient is due to:
a. lack of production of erythropoietin

b stimulatory effect of erythropoietin on erythropoiesis
c. bone marrow stimulatory effects of uremic poisons
d. bone marrow fibrosis due to reduced blood PTH a
47. The clinical expression of endothelial injury is known as…
a. nephrotic syndrome b. nephritic syndrome c. both
48. The clinical expression of epithelial injury is known as…
a. nephrotic syndrome b. nephritic syndrome c. both
49. Excess consumption of salt and water in GN are expressed by…
a. edema and hypertension b. hematuria c. urea casts
50. Loss of plasma proteins in nephrotic syndrome may present as:
a. hypocoagulability due to hyperfibrinogenemia, and hyperlipidemia
b decreased susceptibility to infections due to defect in opsonization by IgG
c. vitamin D deficiency state and secondary hyporparathyroidism
d. hypercoagulability, due to antithrombin III, protein C and protein S deficiency

TEST# 8

GASTROINTESTINAL DISEASES

1. Factors of defense preventing ulcer formation are the following except:
a. mucus and bicarbonate production; b. tight junctions between epithelial cells; c. prostaglandin production; d. increased motility of gastrointestinal tract; e. secretory immune system
2. Factors of defense from acid preventing ulcer formation are the following except:
a. mucus and bicarbonate production; b. tight junctions between epithelial cells; c. prostaglandin production; d. rapid turnover of enterocytes; e. all are wrong
3. Factors of defense from infection preventing ulcer formation are the following except:
a. acid production; b. normal colonic microflora; c. secretory immune system; d. rapid turnover of enterocytes; e. all are wrong
4. Rapid turnover of enterocytes represents…
a. factor of defense from infection preventing ulcer formation; b. factor of defense from acid preventing ulcer formation; c. all are correct; d. all are wrong
5. Prostaglandins E1 and E2 production are able to prevent ulcer development due to their ability to…
a. attenuate acid production; b. support the capillary blood flow to surface; c. all are correct; d. all are wrong
6. The abnormal Mering-Girsh reflex is involved in development of…
a. acute pancreatitis; b. chronic pancreatitis; c. gastric ulcer; d. duodenal ulcer; e. acute diarrhea; f. all are wrong
7. Rapid gastric emptying is involved in pathogenesis of…
a. acute pancreatitis; b. chronic pancreatitis; c. gastric ulcer; d. duodenal ulcer; e. acute diarrhea; f. all are wrong
8. The mechanisms involved in alcohol-induced ulcer formation are the following except…

a. abnormalities of gastrointestinal tract motility;
b. increased gastric secretion;
c. decreased bicarbonate and mucus production;
d. direct epithelium damage ; e. all are wrong
9. The mechanisms involved in the smoking-induced ulcer formation are the following except…
a. rapid gastric emptying; b. an increased secretion of pepsinogen;
c. decreased bicarbonate and mucus production; d. decrease tone of pyloric sphincter; e. direct epithelium damage; f. all are wrong
10. Decreased bicarbonate production and secretion may be a consequence of…
a. alcohol; b. alimentary factors; c. smoking; d. NSAID's administration; e. all are correct
11. Rheumatoid arthritis and other systemic diseases may be involved in ulcer development due to…
a. common source of these systems in the early ontogenesis;
b. treatment by NSAID's; c. both are correct
12. The mechanism underlying in NSAID's-induced gastric ulcer formation is due to…
a. decreased bicarbonate production and secretion; b. decreased mucus production and secretion; c. inhibition of the capillary blood flow to surface; d. all are wrong
13. COPD are known to be accompanying disease to ulcer development due to the…
a. common source of gastrointestinal and respiratory tracts in the early ontogenesis; b. inherited deficiency of α-antitripsin treatment; c. both are correct
14. Stomach acid represent the:
a. factor of defense from infection preventing ulcer formation;
b. aggressive factor favoring the duodenal ulcer formation in rapid gastric emptying; c. all are correct; d. all are wrong
15. The most common transmission routs of H. pylori is:
a. blood transfusions; b. vertical; c. oral-oral and/or fecal-oral; d. all are wrong
16. The mechanisms involved in H. pylori-induced gastrin hypersecretion are the following except:
a. local increase of pH due to NH_3 production; b. increased production of TNF-α by PMNs increases G-cell activity; c. increased synthesis of IL-8 in infected cells decrease somatostatin production by D-cells; d. increased bicarbonate production
17. The most common product of H. Pylori urease activity is:
a. NH_3 b. NaOH c. NH_2OH d. all are wrong
18. H.Pylori-derived urease is able to…
a. directly neutralize the pH and thereby protect bacteria from bactericidic effect of HCL;
b. directly decrease acid production due to decreased metabolism of infected cells;
c. all are wrong
19. pH required for H. Pylori survival is between:
a. 4.0-8.0 b. 1.0-6.0 c. 3.0-4.0 d. 6.0-8.0 e. all are correct
20. pH required for H. Pylori propagation is between:
a. 4.0-8.0 b. 1.0-6.0 c. 3.0-4.0 d. 6.0-8.0 e. all are correct
21. Metaplasia of duodenal epithelium…

a. favors the invasion of H. pylori; b. prevents the invasion of *H. pylori*;
d. does not change the sensitivity of epithelium to be infected by *H. pylori*;
c. all are wrong
22. The most accurate method for testing for H. Pylori after eradication therapy is…
a. serological antibody test; b. assay for anti-H. Pylori IgG in saliva;
c. urea breath test; d. all are wrong
23. The therapeutic activity of proton pump inhibitors is related to ability to…
a. decrease acid production; b. kill the bacteria; c. decrease of gastrin secretion; d. protect the stomach lining
24. The therapeutic activities of bismuth subsalicylate are the following except:
a. decrease acid production; b. kill the bacteria; c. protect the stomach lining; d. all are wrong
25. The most effective ulcer therapy is known as…
a. 2 weeks of triple therapy; b. 5 weeks of triple therapy fall in Po_2 (hypoxemia); c. 2 weeks of dual therapy; d. 4 weeks of quadruple therapy; e. all are wrong
26. Ulcer is more common in patients with blood group…
a. type I (OO); b. type II (AA and/or AO); c. type III (BO and BB);
d. type IV (AB)
27. What statement is wrong? The COX-1 enzyme is known to be…
a. present in most tissues as a housekeeping gene;
b. inducible in inflammation;
c. maintain the normal gastric mucosa and influence the kidney function;
d. all are wrong
28. What statement is correct? The COX-2 enzyme is known to be…
a. present in most tissues as a housekeeper enzyme; b. inducible in inflammation; c. maintain the normal gastric mucosa and influence the kidney function; d. all are wrong
29. In ulcer pathogenesis the inhibition of COX-2 enzyme…
a. is desirable; b. is undesirable; c. has no effect; d. all are wrong
30. Substances released by pancreas in inactive form (known as the pro-enzymes) and become activated only in duodenal lumen are the following:
a. trypsine, chemotrypsin, elastase, procarboxipeptidase A and B; b. lipase, amilase, carboxilesterase, phospholipase A_2; c. all are correct; d. all are wrong
31. Pancreatic enzyme known to be initially activated in duodenum and responsible to convert the other pro-enzymes into the active forms is:
a. lipase; b. enterokinase; c. amilase; d. chemotrypsin; e. trypsine; f. elastase; g. all are wrong
32. Duodenal enzyme involved in formation of pancreatic enzymes from their inactive precursors (pro-enzymes) is:
a. lipase; b. enterokinase; c. amilase; d. chemotrypsin; e. trypsine; f. elastase; g. all are wrong
33. Endopeptidases are:
a. amilase and lipase; b. chemotrypsin, trypsine and elastase;
c. carboxypeptidases; d. phospholipases A_2; e. all are correct

34. Exopeptidases are:
a. amilase and lipase; b. chemotrypsin, trypsine and elastase;
c. carboxypeptidases; d. phospholipase A_2;e. all are correct
35. CCK acts…
a. predominantly on the acinar cells to cause release of enzymes from zymogen granules;
b. predominantly on the pancreatic duct cells to cause an outpouring of very alkaline pancreatic juice;
c. both correct; d. all are wrong
36. Secretin acts:
a. maily on the acinar cells to cause release of enzymes from zymogen granules;
b. mainly on the pancreatic duct cells to cause an outpouring of very alkaline pancreatic juice;
c. both correct; d. all are wrong
37. The most common conditions associated with acute pancreatitis are:
a. alcohol abuse; b. biliary tract disease; c. all are correct; d. all are wrong
38. The alcohol is involved is acute pancreatitis development due to:
a. direct toxic effect on pancreatic acinar cells; b. decreased tone at the sphincter of Oddi (predisposing to reflux of bile or duodenal contents into the pancreatic duct); c. inflammation of the sphincter of Oddi (retention of hydrolytic enzymes in the pancreatic duct and acini); d. all are correct
39. Hypercalcemia is able to cause acute pancreatitis due to…
a. precipitation of Ca in the pancreatic duct, leading to obstruction; b. stimulation of trypsinogen activity in the pancreatic duct; c. all are wrong d. all are correct
40. Osmotic diarrhea is due to…
a. inability to digest or absorb a particular nutrient; b. increased fluid transport out of epithelial cells; c. malabsorbed nutrients or poorly absorbed electrolytes that retain water in the lumen both; d. all are wrong
41. Secretory diarrhea is due to…
a. inability to digest or absorb a particular nutrient; b. an increased of the fluid transport out of epithelial cells; c. malabsorbed nutrients or poorly absorbed electrolytes that retain water in the lumen both; d. all are wrong
42. Malabsorptive diarrhea is due to…
a. inability to digest or absorb a particular nutrient;
b. increased fluid transport out of epithelial cells; c. malabsorbed nutrients or poorly absorbed electrolytes that retain water in the lumen both; d. all are wrong
43. Toxigenic type of acute bacterial diarrhea occurs when…
a. pathogen penetrates the enterocytes as a primary event; b. pathogen produces the enterotoxins without damage of the epithelium; c. all are correct
44. Invasive type of acute bacterial diarrhea occurs when…
a. pathogen penetrates the enterocyte as a primary event;
b. pathogen produces the enterotoxins without damage of the epithelium; c. all are correct
45. Activity of cytotonic enterotoxins is due to…

a. production of intestinal fluid secretion by activation of intracellular enzymes, without damage to the epithelial surface;
b. causing injury to the enterocyte as well as inducing fluid secretion;
c. all are correct; d. all are wrong
46. *Vibrio cholerae* is able to induce:
a. invasive diarrhea; b. toxigenic diarrhea; c. all are correct
47. The non-invasive toxin-producing bacteria are generally…
a. colon pathogens; b. small bowel pathogens; c. both are wrong
48. The invasive toxin-producing bacteria are generally…
a. colon pathogens; b. small bowel pathogens; c. both are correct