Chapter I ▸ THE HUMAN BODY

1. Select the anatomical reference position of the body:
A. Supine position
B. Upright
C. Left lateral recumbent
D. Right lateral recumbent
E. Prone position

2. Referring to the organ systems, it is true that:
A. They consist of cell groups
B. They carry out the main functions of the body
C. They consist of tissues
D. They represent morphological units
E. They form organs

3. Select the correct statements referring to the levels of organization of the human body:
A. They are simple systems
B. They are systems with various degrees of complexity
C. They are subordinated to the laws of the superior level
D. They are responsible for the body's functioning as a whole
E. They are controlled: nervously (hormones) and humorally (reflexes)

4. Select the correct answer referring to the organization of the human body at tissue level:
A. There are groups of cells different in form and structure
B. There are groups of cells with different physiological roles
C. The cells are interconnected by an intercellular substance – in large quantity
D. The cells are interconnected by an intercellular substance – in large quantity (fundamental substance)
E. The tissue level represents the structural, functional and genetic unit of the body

5. Which of the following statements referring to the digestive system is true?
A. It consists of the digestive tract and auxiliary structures associated with the reproductive function
B. It is a system for the transportation of nutrients
C. It consists of the digestive tract and auxiliary glands
D. It consists of the digestive tract and the endocrine glands
E. It consists of all the endocrine and exocrine glands of the body

6. Which of the following statements are correct when referring to the segments of the human body?
A. They contain exclusively viscera
B. They are represented by the head, neck, trunk and limbs
C. They are represented by the cephalic extremity, trunk and limbs
D. They are also called regions of the body
E. They contain somatic elements and internal organs

7. The thoracic cavity is separated from the abdominal cavity by a muscle called:
A. Subcostal
B. Diaphragm
C. Perineal diaphragm
D. External intercostal
E. Internal intercostal

8. The following statements are true referring to the transverse axis of the body:
A. It starts from the top of the head
B. It has a right and a left pole
C. It is the axis of the body's width
D. It runs parallel to the forehead
E. In humans, it is positioned horizontally

9. Select the incorrect answers referring to the axes of the human body:
A. There are three axes: frontal, sagittal and transverse
B. In humans, the sagittal axis is vertical
C. The transverse axis has a left and a right pole
D. They correspond to the spatial dimensions and intersect each other at a right angle
E. The sagittal axis is the axis corresponding to the width of the body

10. The following anatomical terms are used for the lower limb:
A. Distal, closer to the midline
B. Proximal, farther from the midline
C. Tibial, instead of medial
D. Fibular, instead of lateral
E. Superficial, instead of deep

11. The intracytoplasmatic organelles, common to most cells are:
A. The nucleus
B. The nucleolus
C. Ribosomes
D. The endoplasmic reticulum

E. The Golgi apparatus

12. Select the true statements referring to mitochondria:

A. They are considered „the energetic centers" of the nucleus
B. They are specific organelles, together with neurofibrils and Nissl bodies
C. They are more numerous in cells with an intense activity
D. They play a role in the cellular secretion process
E. They have a mitochondrial matrix in the inside

13. Select the true statements referring to the Golgi apparatus:

A. It is situated near the nucleus
B. It contains elongated cisternae, microvesicles, macrovesicles
C. It is situated in the inactive area of the cytoplasm
D. It plays a role in the excretion of cellular substances
E. It is a specific organelle

14. Select the true statements referring to the rough endoplasmic reticulum:

A. It is also called ergastoplasm
B. It has lysosomes on the external surface of its membranous wall
C. It plays a role in protein synthesis
D. It plays an important role in glycogen synthesis
E. It is involved in cellular excretion

15. Which of the following statements referring to the Nissl bodies are true?

A. They are present in the erythrocytes
B. They are present in the nerve cell
C. They are unspecific intracytoplasmatic organelles
D. They are specific intracytoplasmatic organelles
E. They play a role in protein synthesis

16. Which of the following statements referring to the epithelial tissue are true?

A. It consists of cells, fibers and fundamental substance
B. It has a rich vascularization
C. It covers the surface of the body
D. It lines the cavities of the body
E. Epithelial cells are tightly joined together by junctions

17. The simple columnar epithelium has the following characteristics:

A. It is a lining epithelium
B. It is a glandular epithelium
C. Forms the mucosa of the digestive tract
D. It can be found in the pulmonary alveoli
E. Contains cylindrical cells which may have cilia or microvilli at their apical end

18. Select the correct statements referring to the general characteristics of epithelial tissues:
A. They are avascular tissues
B. They are richly vascularized tissues
C. Deep epithelial cells lie on a basal membrane
D. They are the most widespread tissues in the body
E. According to their role, they can be classified into covering, glandular and sensory epithelia

19. Which of the following statements referring to the exocrine glands are true?
A. The secretion product is released on the surface of the body or into cavities
B. The secretion product is released into the bloodstream
C. According to the secretion release mechanism, they are: merocrine, holocrine and apocrine
D. According to their structure, they can be: unicellular and pluricellular
E. Exocrine epithelial cells can be organized as cordons, follicles or islands

20. The smooth muscle tissue has the following characteristics:
A. It can be found in the muscles of the iris
B. Its contraction is involuntary, slow and prolonged
C. It has transverse stria
D. It does not have transverse stria
E. It consists of smooth muscle fibers with fusiform aspect

21. The striated/skeletal muscle tissue can be found in:
A. Skeletal muscles
B. Erector muscles of hair
C. Extrinsic muscles of the eyeball
D. The walls of hollow organs
E. The tongue

22. Which of the following statements referring to the sarcomere are true?
A. It is the morphofunctional unit of myofibrils
B. It lies between two successive H lines
C. It lies between two successive Z lines
D. It lies between the dark and light band
E. It lies in the middle of the light band

23. Select the correct statements referring to the loose connective tissue:
A. It mainly contains collagen fibers
B. It contains equal amounts of cells, fibers and fundamental substance
C. It accompanies epithelia
D. It is an avascular tissue
E. It contains fibers called fibroblasts

24. Select the correct statements referring to the bone tissue:
A. It is a semi-hard connective tissue
B. It is a hard connective tissue
C. It contains osteoblasts and osteocytes
D. It is of two types: compact and spongy
E. It is a soft connective tissue

25. Which of the following statements referring to blood are true?
A. It has a mesodermal origin
B. It is a particular type of connective tissue
C. It consists of plasma and figurative elements
D. It is a dense connective tissue
E. It has an ectodermal origin

26. Red blood cells are figurative blood elements which have the following characteristics:
A. They are about 4.5-5 mil/mm^3blood
B. They are about 4,000-8,000/mm^3blood
C. They are anucleate cells
D. They are nucleated cells
E. They play a role in the transportation of respiratory gases

27. Which of the following statements referring to thrombocytes are correct?
A. They are cytoplasmic fragments from precursor cells called megakaryocytes
B. They contain coagulation factors
C. They contain neutrophil granules
D. They are involved in inflammations
E. They modulate the immune response

28. Eosinophils are figurative blood elements which:
A. Modulate the immune response
B. Are involved in hemostasis
C. Contain eosinophil granules
D. Do not contain eosinophil granules

E. Increase in number in parasitic diseases

29. Choose the correct association:
A. Piriform – brain neurons
B. Piriform – bone marrow neurons
C. Piriform – cerebellum neurons
D. Piriform – spinal ganglion neurons
E. Piriform – peripheral nerve neurons

30. Axons are projections of neurons, having the following characteristics:
A. Are short and branching prolongation
B. They represent a single long prolongation
C. The end in synaptic boutons
D. They are covered by an axolemma
E. They represent a single short prolongation

31. Select the correct statements referring to Schwann's sheath:
A. It consists of connective tissue
B. It consists of glial cells wrapped around axons
C. It consists of glial cells wrapped around dendrites
D. Cover the myelin sheath
E. Ensures myelin isolation of neuronal axons in the central nervous system

32. The following statements are true referring to the cytoplasm:
A. It can be found in the plasmalemma and in the nucleus
B. It has three components: cytosol, organelles and inclusions
C. Separates the cell from its environment
D. It is the site of most cellular activities
E. It controls the exchanges between the cell and its environment

33. Microvilli are present in the epithelium of the:
A. Stomach
B. Trachea
C. Small intestine
D. Urinary bladder
E. Uterus

34. The non keratinized stratified squamous epithelium can be found in:
A. Stomach
B. Intestine
C. Oral mucosa
D. Uterine mucosa
E. Epidermis

35. Which of the following statements referring to the adipose tissue are true?
A. It contains adipocytes with a nucleus located on the periphery
B. It plays a role in thermoisolation, nutrient storage and mechanical protection
C. It plays a role in the formation of figurative blood elements
D. It is present in the hypodermis
E. It is present in the epidermis

36. The cartilaginous tissue is a variety of connective tissue having the following particularities:
A. It is a semi-hard connective tissue
B. It is a hard connective tissue
C. It is well vascularized
D. It is avascular
E. It is covered by the perichondrium

37. Select the correct statements referring to the cell membrane:
A. It is organized according to the fluid mosaic model
B. It has selective permeability
C. It is impermeable
D. It is electrically polarized
E. It can be easily distinguished under an optical microscope

38. Select the correct statements about the nodal tissue:
A. It ensures cardiac automatism
B. It has the capacity to contract
C. It is formed by cells rich in glycogen
D. It can be found in the heart
E. It can be found in the skeletal muscles

39. The ribonucleic acid (RNA) can be found:
A. In myofibrils
B. In nucleoli
C. Attached to the cell membrane
D. Attached to lysosomes
E. Associated with microtubules

40. The transport mechanisms which use direct energy provided by the adenosintriphosphate (ATP) are:
A. Facilitated diffusion
B. Primary active transport
C. Water diffusion through a semipermeable membrane
D. Na^+/K^+ pump
E. Cotransport

41. Which of the following statements referring to osmosis are true?

A. The pressure that needs to be applied to prevent osmosis is called osmotic concentration
B. The pressure that needs to be applied to prevent osmosis is called osmotic pressure
C. Osmotic pressure is inversely proportional to osmotic concentration
D. Osmotic concentration is directly proportional to the number of particles dissolved in a solution
E. Water passes from a compartment with higher osmotic pressure into a compartment with lower osmotic pressure

42. Which of the following characteristics define primary active transport?

A. The functioning of the transporting protein requires direct primary active transport hydrolysis
B. The functioning of the transporting protein requires the transfer of another energy obtained, for example, as a result of the activity of Na^+/K^+ pump
C. The transporting protein is called pump
D. In the case of the Na^+/K^+ pump, $3Na^+$ are expelled from and $2K^+$ are introduced into the cell
E. It is also called cotransport

43. Which of the following statements characterizes excitability?

A. Stimuli with an intensity below the threshold level produce local potentials, which do not propagate
B. Stimuli with a threshold-level intensity induce physicochemical alterations in the neuron, which can generate nerve impulses
C. Stimuli with an intensity higher than the threshold level produce a stronger nerve impulse than stimuli with threshold-level intensity
D. The action potential is propagated as a nervous influx
E. It functions on the „all or none" principle

44. The active mechanism underlying asymmetrical ion distribution on either face of a resting neuron membrane requires:

A. Na^+ and K^+ ion transportation through ion channels
B. Na^+ and K^+ ion transportation through the Na^+/K^+ pump
C. Energy consumption through the Na^+/K^+ pump
D. The activation of the Na^+/K^+ pump which expels $2Na^+$from the cell and introduces $3K^+$into the cell
E. An imbalanced Na^+ and K^+ exchange which ensures a higher concentration of positive charges on the exterior of the cell

45. Which of the following characteristics of the action potential are different depending on the cell type?
A. Production mechanism
B. Graphic aspect
C. The number of phases of the action potential
D. The length of an action potential
E. The underlying principle of its occurrence

46. Which of the following statements referring to the phases of the neuron action potential are true?
A. The latent phase lasts for 1 ms
B. The latent phase is the interval of time elapsed between the moment of stimulation and the initiation of the action potential
C. The depolarization phase lasts for 1 ms
D. The depolatization phase represents the decrease in potential difference between the two facets of a neurilemma
E. The repolarization phase is induced by the closing of the Na^+ channels and opening of the K^+ channels

47. Conduction is the property of the nerve fiber to conduct the nerve impulse:
A. By self-propagation, from the place where the stimulus originated
B. Along the nerve fiber up to its end, where the synapse lies
C. Saltatory, in the case of amyelinated fibers
D. Node-to-node, in the case of myelinated fibers
E. At a speed of 10 m/sec in the case of myelinated fibers

48. Select the correct statements regarding the chemical synapse:
A. It is the predominant signal transmission method in the central nervous system
B. It is the predominant signal transmission method in the peripheral nervous system
C. Ensures the bidirectional conduction of nerve impulses in the body
D. Contains more than 40 types of neurotransmitters
E. Consists of 3 components: presynaptic, postsynaptic and the synaptic cleft

49. The transmission of a nerve impulse in a chemical synapse requires the following:

A. The action potential which reached the terminal bouton induces the fusion of presynaptic vesicles among one another
B. The action potential which reached the terminal bouton induces the fusion of presynaptic vesicles with the presynaptic membrane
C. The chemical mediator is released into the synaptic cleft and binds unspecifically to the neuroreceptor proteins at this level
D. The action of the chemical mediator on the postsynaptic membrane induces a local potential which self-propagates through the postsynaptic neuron membrane
E. It has a latency of 0.5 ms

50. Which of the following statements referring to the synaptic transmission are true?

A. The signals transmitted through synapses have the same intensity
B. The signals transmitted through synapses always have a stimulating effect on the postsynaptic cell
C. The main neurotransmitters are acetylcholine and noradrenaline
D. Acetylcholine is the less widespread chemical mediator
E. Noradrenaline plays a role in the states of wakefulness and vigilance

1. The autonomic nervous system controls the activity of:
A. Skeletal muscles
B. Visceral muscles
C. Glands (only the exocrine ones)
D. Glands (only the endocrine ones)
E. Glands (both the exocrine and the endocrine ones)

2. The central nervous system consists of:
A. Encephalon and cranial nerves
B. Encephalon and spinal nerves
C. Encephalon and spinal bone marrow
D. Spinal bone marrow and cranial nerves
E. Spinal bone marrow and spinal nerves

3. According to the number of extensions, neurons can be:
A. Pseudobipolar
B. Pseudomultipolar
C. Unipolar
D. Bipolar
E. Multipolar

4. Select the correct statements referring to bipolar neurons:
A. They can be round, oval or spindle-shaped
B. The can be stellate, pyramidal or piriform
C. They have an extension which divides into a T
D. They have several dendritic extensions
E. They have two extensions which start from the same pole of the cell

5. Select the correct statements referring to motor neurons:
A. They are connected with their effector organs through their dendrites
B. They are connected with their effector organs through their axons
C. They receive stimuli from the inner or outer environment of the body through their axons
D. They receive stimuli from the inner or outer environment of the body through their dendrites
E. They can be divided into visceromotor and somatomotor neurons

6. The neuron consists of:
A. Cell body
B. Perikaryon
C. One or several extensions
D. One or several dendrites
E. One or several axons

7. The neuronal body is delimited by:
A. Plasma membrane
B. Neurilemma
C. Neuroplasma
D. A thin membrane
E. A thick membrane

8. The neuron contains the following specific organelles:
A. Tigroid bodies
B. Nissl bodies
C. Ribosomes
D. Neurofibrils
E. Centrosomes

9. Dendrites are prolongations:
A. Of the Schwann cells
B. Of the ependymal cells
C. Of the astrocytes
D. Of the neurons
E. Thicker in their initial segment

10. Select the correct statements referring to the axon:
A. It has a membrane called axolemma which has an important role in the propagation of the nerve influx
B. All along its course it projects collaterals oblique on in its direction
C. All along its course it projects collaterals parallel with its direction
D. All along its course it projects collaterals perpendicular on its direction
E. It branches out in its terminal part

11. Select the correct statements referring to the myelin sheath:
A. It can be found in axons with a diameter smaller than 2 microns
B. It can be found in postganglion fibers
C. It is missing from postganglion fibers
D. It plays the role of thermal isolation
E. It accelerates the conduction of the nerve impulse

12. Select the correct statements referring to the axon of the neurons in the peripheral nervous system:
A. It has a myelin sheath produced by the Schwann cells
B. It has a myelin sheath produced by oligodendrocytes
C. It has a Henle sheath
D. It does not have a Schwann sheath
E. It does not have a Henle sheath

13. Referring to the Henle sheath, it is true that it:
A. Belongs to the sheaths which cover the axon of the peripheral nervous system neurons
B. Belongs to the sheaths which cover the axon of the central nervous system neurons
C. It wraps the myelin sheath
D. It separates the plasma membrane of a Schwann cell from the surrounding epithelial tissue
E. It plays a role in permeability and resistance

14. Select the correct statements referring to the nerve cell:
A. It is characterized by excitability and conductivity
B. It is characterized only by excitability
C. It is characterized only by conductivity
D. It can generate an action potential which propagates
E. It can generate a local membrane potential which does not propagate

15. The conduction velocity of the nerve impulse is:
A. 10 meters/second in myelinated fibers
B. 10 meters/second in unmyelinated fibers
C. 100meters/second in myelinated fibers
D. 100meters/second in unmyelinated fibers
E. 100meters/minute in myelinated fibers

16. Select the correct statements referring to the neuromuscular synapse:
A. It resembles the neuro-neuronal synapse
B. It is completely different from the neuro-neuronal synapse
C. It is similar to the neuro-neuronal synapse
D. It is called motor neuron plate or neuromuscular junction
E. It is called sensory plate or neurosensory junction

17. A reflex represents:
A. The response reaction of nerve centers to the stimulation of an effector area
B. The response reaction of nerve centers to the stimulation of a receptor area
C. An excitatory structure which responds to stimuli with graded potential variations
D. The anatomical basis of the reflex action
E. A non-excitatory structure which does not respond to stimuli

18. The following statements are true referring to the reflex arc:
A. It represents the fundamental functioning mechanism of the central nervous system
B. It represents the fundamental functioning mechanism of the peripheral nervous system
C. Represents the anatomical basis of the reflex action
D. It consists of 3 anatomical components
E. It consists of 5 anatomical components

19. Select the correct statements referring to exteroreceptors:
A. They receive stimuli from inside the body
B. They receive stimuli from muscles, tendons and joints
C. They receive stimuli from outside the body
D. They provide information about the position of the body
E. They allow movement control

20. Select the correct statements referring to chemoreceptors:
A. They are stimulated by light
B. They are stimulated chemically
C. They respond to temperature variations
D. They include nociceptors
E. They are situated in the olfactory epithelium

21. Select the correct statements referring to thermoreceptors:
A. They are stimulated by the deformation of the cell membrane
B. They are tactile, pressure and vibration receptors
C. They respond to temperature variations
D. They are free nerve terminations
E. They are located in cone cells and in rod cells

22. The efferent path of the reflex arc represents:
A. The axons of the somatic motor neurons which transmit the command to the effector organ
B. The axons of autonomic motor neurons which transmit the command to the effector organ
C. The dendrites of the somatic motor neurons which transmit the command to the effector organ
D. The dendrites of autonomic motor neurons which transmit the command to the effector organ with specific functional attributes
E. One of the major levels of the central nervous system

23. The spinal cord has:
A. Two enlarged parts at the cervical and lumbar levels
B. Two enlarged parts at the thoracic and lumbar levels
C. Two enlarged parts at the cervical and sacral levels
D. Two enlarged parts at the level of the terminal filum
E. Two intumescences (cervical and lumbar)

24. Select the correct statements referring to the arachnoid:
A. It has a fibrous, resistant structure
B. It has a connective structure
C. It is a connective-vascular membrane
D. It is separated from the walls of the vertebral canal by the epidural space
E. It is separated from the pia mater by a space containing cerebrospinal fluid (CSF)

25. Referring to the gray matter of the spinal cord, it is true that it:
A. Is located in the center
B. Is located at the periphery
C. In vertical section, it is shaped like the letter H
D. In transverse section, it is shaped like the letter H
E. It consists of the neuron bodies

26. Referring to the posterior horns of the spinal cord, it is true that they:
A. Contain the somatomotor system
B. Contain neurons of the sensory paths which have the significance of a deutoneuron
C. Contain neurons of the sensory paths which have the significance of a protoneuron
D. Are broader and shorter than the anterior horns
E. Contain two types of visceromotor neurons

27. The following statements are true referring to thermal and pain sensitivity:
A. The protoneuron is located in the spinal ganglion
B. The dendrite of the protoneuron is long and reaches the receptors
C. The dendrite of the protoneuron is short and reaches the receptors
D. The axon of the protoneuron reaches the receptors
E. The axon of the protoneuron inserts into the bone marrow

28. Select the correct statements referring to the pathway of the gross tactile sensation:
A. It is also called epicritical
B. It is also called protopathic
C. In the skin, it has receptors represented by Golgi neurotendinous corpuscles and Meissner's tactile discs
D. In the skin, it has effectors represented by Golgi neurotendinous corpuscles and Meissner's tactile discs
E. Its protoneuron is located in the spinal ganglion

29. The pathways of proprioceptive sensitivity are represented by:
A. The protopathic sensitivity pathway
B. The epicritical sensitivity pathway
C. The kinesthetic sensitivity pathway (conscious proprioceptive)
D. The movement control proprioceptive sensitivity pathway (unconscious proprioceptive)
E. Interoceptive sensitivity pathways

30. The movement control proprioceptive sensitivity pathway (unconscious proprioceptive) consists of:
A. Two tracts
B. The dorsal spinocerebellar tract (crossed; posterior; Gowers)
C. The dorsal spinocerebellar tract (direct; posterior; Flechsig)
D. The ventral spinocerebellar tract (crossed; anterior; Gowers)
E. The ventral spinocerebellar tract (direct; anterior; Flechsig)

31. Select the correct statements referring to the ventral spinocerebellar bundle (crossed; anterior; Gowers):
A. It has a descending trajectory
B. It has an ascending trajectory
C. It crosses the bulb and reaches the cerebellum via the inferior cerebellar peduncle
D. It crosses the bulb, the pons and the mesencephalon and reaches the cerebellum via the superior cerebellar peduncle
E. It crosses the bulb, the pons and the mesencephalon and reaches the thalamus

32. The receptors of interoceptive sensory pathway are located:
A. In the epidermis
B. In the walls of the vessels
C. In the walls of the organs
D. In the form of free terminations
E. In the form of lamellar corpuscles

33. Select the correct statements referring to the direct pyramidal tract:
A. It is also called lateral corticospinal
B. It is also called anterior corticospinal
C. It reaches the lateral column of the spinal cord
D. It reaches the anterior column on the same side
E. It is situated near the median fissure

34. Select the correct statements referring to the 31 pairs of spinal nerves:
A. 8 belong to the cervical region
B. 7 belong to the cervical region
C. 12 belong to the thoracic region
D. 5 are located in the sacral region
E. 5 are located in the coccyx region

35. It is true that the posterior root of the spinal nerves:
A. Contains the dendrites of visceromotor neurons from the ventral half of the lateral horn
B. Contains the dendrites of visceromotor neurons from the dorsal half of the lateral horn
C. Contains the axons of visceromotor neurons from the dorsal half of the lateral horn
D. Contains the axons of somatomotor neurons
E. It contains the spinal ganglion, on its trajectory

36. The postganglionic sympathetic autonomic fiber enters the spinal nerve through the following branch:
A. Superior
B. Inferior
C. White communicating
D. Grey communicating
E. Meningeal

37. The gray communicating branch of the spinal nerve allows the passage of the following autonomic fiber:
A. Myelinated preganglionic
B. Myelinated postganglionic
C. Unmyelinated preganglionic
D. Unmyelinated postganglionic
E. Sympathetic and parasympathetic postganglionic

38. The patellar reflex determines:
A. The flexion of the thigh on the pelvis
B. The extension of the thigh on the pelvis
C. The flexion of the calf on the thigh
D. The extension of the calf on the thigh
E. The extension of the leg

39. It is true that nociceptive reflexes:
A. Are defense reflexes
B. Have monosynaptic centers
C. Have polysynaptic centers
D. Consist in the withdrawal of a limb as a response to its painful stimulation
E. Their receptors are located in the skin

40. The cerebral trunk consists of:
A. Two floors
B. Three floors
C. Bulb and cerebellum
D. Bulb, cerebellum and mesencephalon
E. Bulb, pons and cerebellum

41. The following structures originate in the cerebral trunk:
A. 10 of the 12 pairs of cranial nerves
B. All the pairs of cranial nerves
C. 10 of the 31 pairs of cranial nerves
D. 10 of the 31 pairs of spinal nerves
E. 11 of the 12 pairs of cranial nerves

42. Select the correct statements referring to the cranial nerves:
A. They have a trunk which divides into 5 branches when exiting the skull
B. They are arranged in a metametric fashion just like spinal nerves
C. They differ from the spinal nerves in that they are not arranged in a metametric fashion
D. They have two roots (dorsal and ventral)
E. They do not have two roots (dorsal and ventral)

43. Which of the following statements referring to the cranial nerves are true?
A. Nerves I, II and VII are sensory nerves
B. Nerves I, II and VIII are motor nerves
C. Nerves III, IV, VI, VII and XI are motor nerves
D. Nerves III, IV, VI, XI and XII are motor nerves
E. Nerves I, II and VII are mixed nerves

44. Referring to the origin of oculomotor nerves, it is true that:
A. The real origin of their motor fibers lies in the accessor nucleus in the mesencephalon
B. The real origin of their motor fibers lies in the motor nucleus of the oculomotor in the mesencephalon
C. The apparent origin of motor fibers lies in the motor nucleus of the oculomotor in the mesencephalon
D. The apparent origin of motor fibers lies in the accessor nucleus in the mesencephalon
E. The real origin of parasympathetic fibers lies in the accessor nucleus in the mesencephalon

45. Select the correct statements referring to the trigeminal nerves:
A. They represent the III pair of cranial nerves
B. They represent the V pair of cranial nerves
C. They represent the VII pair of cranial nerves
D. They are motor nerves
E. They are mixed nerves

46. Select the correct statements referring to the facial nerves:
A. They represent the V pair of cranial nerves
B. They represent the VII pair of cranial nerves
C. They are motor nerves
D. They are mixed nerves
E. They are sensory nerves

47. Which of the following statements referring to the glossopharyngeal nerves are true?
A. The first neuron of sensory fibers are located in the ganglia along the nerve trajectory
B. The deutoneuron is located in the solitary nucleus in the medulla oblongata
C. The deutoneuron is located in the solitary nucleus in the pons
D. Sympathetic fibers originate in the inferior salivary nucleus in the medulla oblongata
E. Parasympathetic fibers originate in the superior salivary nucleus in the pons

48. The sensory fibers of the glossopharyngeal nerve receive gustatory sensations from:
A. The anterior third of the tongue
B. The middle third of the tongue
C. The anterior two-thirds of the tongue
D. The posterior of the tongue
E. The posterior two-thirds of the tongue

49. Select the correct statements referring to the vagi nerves:
A. They represent the VIII pair of cranial nerves
B. They represent the X pair of cranial nerves
C. They are also called pneumogastric nerves
D. They are also called spinal nerves
E. They are mixed nerves

50. The sensory fibers of the vagus nerve receive gustatory sensations from:
A. The tip of the tongue
B. The anterior third of the tongue
C. The middle third of the tongue
D. The anterior two thirds of the tongue
E. The root of the tongue

51. The origin of the hypoglossal nerves:
A. The real origin lies in the motor nucleus of the nerve located in the medulla oblongata
B. The real origin lies in the motor nucleus of the nerve located in the pons
C. The apparent origin lies in the posterior face of the cerebral trunk
D. The apparent origin lies in the pre-olivary groove
E. The apparent origin lies in the retro-olivary groove

52. Select the correct statements referring to the cerebellar peduncles:
A. They represent one of the three parts of the cerebral trunk
B. They connect the bulb, the pons and the mesencephalon to the cerebellum
C. They connect, the medulla oblongata, the pons and the diencephalon to the cerebellum
D. They contain only afferent fibers
E. They contain both afferent and efferent fibers

53. The cerebellar cortex consists of:
A. 3 layers of cells
B. 6 layers of cells
C. A molecular layer on the exterior
D. A granular layer on the exterior
E. A granular layer on the interior

54. The diencephalon consists of:
A. The mesencephalon
B. The thalamus
C. The hypothalamus
D. The hypophysis

E. The metathalamus

55. The hypothalamus is a superior integration, regulation and coordination center of the main functions of the body, among which:
A. The amplification of weak sound vibrations
B. The diminution of strong sound vibrations
C. The intermediate metabolism
D. Thermoregulation
E. Digestion through the hunger, thirst and satiety centers

56. The cerebral hemispheres have:
A. 3 surfaces: lateral, medial and inferior
B. 3 surfaces: lateral, medial and basal
C. 3 surfaces: lateral, basal and inferior
D. 3 surfaces: lateral, medial and superior
E. 4 surfaces: lateral, medial, superior and inferior

57. The parietal lobe is situated:
A. In the inferior part of the cerebral hemispheres
B. Before the central fissure
C. Before the rolandic fissure
D. Above the lateral sulcus
E. Below the lateral sulcus

58. The following statements are true referring to the cerebral hemispheres:
A. The grey matter is located only on the surface
B. The grey matter is located only on the inside
C. The grey matter is located both on the surface and on the inside
D. The white matter surrounds the I and II cerebral ventricles
E. The white matter surrounds the III and IV cerebral ventricles

59. Select the correct statements referring to the paleocortex:
A. It is located over a small area on the medial face of the cerebral hemispheres
B. It is located over a wide area on the medial face of the cerebral hemispheres
C. It is located over a wide area on the lateral face of the cerebral hemispheres
D. It represents the point of origin of emotional affective psychic processes
E. It represents the point of origin of instinctive behaviour

60. Select the correct statements referring to the unconditioned reflex:
A. It is inborn
B. It is acquired
C. It is a learned reaction

D. It is characteristic to a species
E. It is not characteristic to a species

61. Select the correct statements referring to the feeding reflex:
A. It is a learned response
B. It is a conditioned reflex
C. It is characteristic to a species
D. It is an inborn response
E. It is an unconditioned reflex

62. Select the correct statements referring to the conditioned reflexes:
A. They close at cortical level
B. They close at subcortical level
C. They become extinct if the initial stimulus is not strengthened at intervals by the absolute stimulus
D. They become extinct if the conditional stimulus is not strengthened at intervals by the indifferent stimulus
E. They are never extinguished

63. The motor neuron is:
A. An afferent neuron
B. An efferent neuron
C. A neuron that transmits impulses from receptors to the peripheral nervous system
D. A neuron that transmits impulses from receptors to the central nervous system
E. A neuron that transmits impulses from the central nervous system to an effector organ

64. The following statements are true referring to the autonomic nervous system:
A. Most organs receive a simple autonomic innervation
B. Most organs receive a dual and antagonistic innervation
C. In some organs the sympathetic and the parasympathetic produce the same type of effects but these effects differ only quantitatively
D. In some organs the sympathetic and the parasympathetic produce the same type of effects but these effects differ only qualitatively
E. In some organs the sympathetic and the parasympathetic produce the same type of effects but these effects differ both quantitatively and qualitatively

65. Select the correct statements referring to the efferent pathway of the autonomic reflex:
A. It is similar to that of the somatic reflex
B. It is fundamentally different from that of the somatic reflex
C. In the sympathetic system, it has lateral vertebral autonomic ganglions
D. In the parasympathetic system, it has lateral vertebral autonomic ganglions
E. In the parasympathetic system, it has juxta visceral and intramural autonomic ganglions

66. The centers of the parasympathetic system are located in:
A. The anterior horns of the thoracic and superior lumbar spinal cord
B. The posterior horns of the thoracic and superior lumbar spinal cord
C. The lateral horns of the thoracic and superior lumbar spinal cord
D. Both the parasympathetic nuclei of the cerebral trunk and in the lumbar spinal cord L2-L4
E. Both the parasympathetic nuclei of the cerebral trunk and in the sacral spinal cord S2-S4

67. Select the correct statements referring to the sympathetic nervous system:
A. It has its own pathways represented by paravertebral sympathetic chains
B. It has its own pathways represented by laterovertebral sympathetic chains
C. It uses borrowed pathways
D. It uses the pathways of the cranial nerves III, VI, IX, X
E. It uses the pathways of the cranial nerves III, VII, IX, X

68. Select the correct statements referring to the cranial parasympathetic system:
A. It has its own pathways represented by paravertebral sympathetic chains
B. It has its own pathways represented by laterovertebral sympathetic chains
C. It uses the pathways of the cranial nerves III, VI, IX, X
D. It uses the pathways of the cranial nerves III, VII, IX, X
E. It uses the pathway of the pelvic nerves

69. The following substance(s) is/are released at the peripheral end of the postganglionic fiber:
A. Noradrenaline in the case of the sympathetic system
B. Noradrenaline in the case of the parasympathetic system
C. Acetylcholine in the case of the sympathetic system
D. Acetylcholine in the case of the parasympathetic system
E. Norepinephrine in the case of the parasympathetic system

70. The sympathetic component activates the body for offense and defense mainly by releasing:
A. Adrenaline from the adrenal gland
B. Noradrenaline from the postganglionic fibers
C. Acetylcholine from the postganglionic fibers
D. Adrenaline from the adrenal medulla
E. Acetylcholine from the adrenal medulla

71. The cholinergic synapses use:
A. Adrenaline
B. Noradrenaline
C. Norepinephrine
D. Epinephrine
E. Acetylcholine

72. Which of the following organs do not have parasympathetic innervation?
A. The adrenal medulla (*medulla glandulae suprarenalis)*
B. The sweat glands
C. The erector muscles of hair
D. The majority of blood vessels
E. All the blood vessels

73. The sympathetic stimulation has the following effect(s) on the ciliary muscle:
A. Mydriasis
B. Myosis
C. Relaxation (for near vision)
D. Relaxation (for distance vision)
E. No effect

74. Sympathetic stimulation has the following effect in the heart:
A. Increased frequency
B. Decreased frequency
C. Increased contractility
D. Decreased contractility
E. No effect

75. Parasympathetic stimulation has the following effect in the liver:
A. Contraction of the liver
B. Relaxation of the liver
C. Stimulates glycogenolysis
D. Stimulates glycogenesis
E. No effect

76. Sympathetic stimulation has the following effect on the iris (pupil constrictor muscle):
A. Mydriasis
B. Myosis
C. Pupil constriction
D. Relaxation (for distance vision)
E. No effect

77. Parasympathetic stimulation has the following effect in the heart:
A. Increased frequency
B. Decreased frequency
C. Increased contractility
D. Decreased contractility
E. No effect

78. Parasympathetic stimulation has the following effect on the blood vessels:
A. Mainly vasoconstriction
B. Dilatation in all the vascular regions
C. Dilatation in some of the vascular regions
D. Vasoconstriction in all the vascular regions
E. No effect

79. The stimulation of the parasympathetic system induces:
A. Dilatation in some of the vascular regions
B. Dilatation in the bronchial tree
C. Constriction in the bronchial tree
D. Mydriasis
E. Relaxation of the ciliary muscles for the near vision

80. Encephalitis is:
A. An acute inflammatory disorder of the meninges
B. An acute inflammatory disorder of the brain
C. A chronic inflammatory disorder of the meninges
D. A chronic disorder characterized by episodes with sudden onset
E. A chronic disorder occurring as the consequence of a cranial trauma

1. Which of the following receptors are located in the skin?
A. For vibrations
B. For pressure
C. For pain
D. Tactile
E. Kinesthetic

2. It is true that dermal papillae:
A. Are located in the horny layer
B. Are located in the germinative layer
C. Are increased on the surface of the fingers
D. Form some protuberances called papillary ridges
E. Are located in the hypodermis

3. The skin contains:
A. Free endings
B. Encapsulated endings
C. Meissner corpuscles
D. Ruffini corpuscles
E. Neuromuscular spindles

4. Select the correct statements regarding the Ruffini corpuscles:
A. They are located in the epidermis
B. They are located in the superior part of the dermis
C. They receive pressure
D. They are considered warm receptors
E. They are also considered cold receptors

5. The following structures are cold receptors:
A. Pacini corpuscles
B. Krause corpuscles
C. Merkel discs
D. Golgi Mazzoni corpuscles
E. Ruffini corpuscles

6. Select the correct statements referring to the Merkel discs:
A. They are tactile receptors
B. They are located in the superior part of the dermis
C. They are located in the deep part of the dermis
D. They receive touch
E. They receive pressure

7. The receptors of the kinesthetic analyzer are located in the:
A. Skin
B. Muscles
C. Tendons
D. Joints
E. Ligaments

8. It is true that free nervous endings (at the level of the locomotor system):
A. Transmit joint-pain sensitivity
B. Are located at the muscle-tendon junction
C. Branch out through the entire width of the articular capsule
D. Are disseminated among the striated muscle fibers
E. Help preventing an exaggerated muscle elongation

9. The motor innervation of the neuromuscular spindles is ensured by:
A. Gamma neuron axons in the spinal ganglion
B. Gamma neuron axons in the posterior horn of the spinal cord
C. Gamma neuron axons in the anterior horn of the spinal cord
D. Sensory neuron dendrites in the spinal ganglion
E. Sensory neuron dendrites in the anterior horn of the spinal cord

10. Muscle tone sense is transmitted through the following tracts:
A. Spinobulbar
B. Ventral spinocerebellar
C. Dorsal spinocerebellar
D. Anterior spinothalamic
E. Posterior spinothalamic

11. It is true that the bipolar cells in the olfactory mucosa:
A. Also play the role of primary neuron
B. Also play the role of deutoneuron
C. Have a short and thick axon which ends in a vesicle, the olfactory bulb
D. Have a long and thin dendrite that ends in a vesicle, the olfactory bulb
E. Have a short and thick dendrite that ends in a vesicle, the olfactory bulb

12. The threshold of olfactory sensitivity is represented by:
A. The highest concentration in a deodorant substance that produces the sense of smell
B. The highest concentration in an odorous substance that produces the sense of smell
C. The lowest concentration in an odorous substance that produces the sense of smell
D. For ether it is 1/10 g/L air
E. For musk the degree is ten times higher

13. The gustatory area is situated:
A. In the superior part of the precentral gyrus
B. In the inferior part of the precentral gyrus
C. In the superior part of the postcentral gyrus
D. In the inferior part of the postcentral gyrus
E. Around the calcarine fissure

14. The fundamental tastes are perceived as follows:
A. Sweetness – at the tip of the tongue
B. Saltiness – at the back of the tongue
C. Sourness – at the tip of the tongue
D. Bitterness – at the tip of the tongue
E. Bitterness – at the base of the tongue

15. A stimulus can induce a gustatory sensation only if it is:
A. Water soluble
B. Soluble in the saliva
C. Insoluble in water
D. Insoluble in saliva
E. Soluble in the gastric juice

16. The threshold of the gustatory sensitivity:
A. Is represented by the highest concentration at which the stimulus can produce a sensation
B. Is represented by the lowest concentration at which the stimulus can produce a sensation
C. Varies widely from one substance to another
D. Is higher in sweet substances and lower in bitter ones
E. It is the same for sweet and bitter substances

17. The external coat of the eye globe consists of:
A. Choroid
B. Ciliary body
C. Cornea
D. Iris
E. Sclera

18. Select the correct statements referring to the cornea:
A. It is shaped like a biconvex lens
B. It is situated between the choroid and the ora serrata
C. It belongs to the internal coat of the eyeball
D. Its structure contains several nerve fibers
E. Has a refraction power of about 40 dioptres

19. Select the correct statements referring to the ciliary muscle:
A. It consists of striated muscle fibers
B. It has circular fibers innervated by the parasympathetic nervous system
C. It has radial fibers innervated by the parasympathetic nervous system
D. It consists of smooth muscle fibers
E. It is located in the internal layer of the eyeball

20. Select the correct statements referring to the retina:
A. It is responsible for the reception of light stimuli
B. It is responsible for the transformation of light stimuli into nerve influxes
C. It is responsible for the transformation of the nerve influx into light stimuli
D. It has two important regions: the yellow spot and the macula lutea
E. It has two important regions: the yellow spot and the blind spot

21. The blind spot is the place where:
A. Arteries enter the eyeball
B. Arteries leave the eyeball
C. The optic nerve enters the eyeball
D. The optic nerve leaves the eyeball
E. Vision is the clearest

22. Which area of the retina contains only cone cells?
A. The cornea
B. Fovea centralis
C. The exit place of the optic nerve
D. The blind spot
E. Ciliary processes

23. Select the correct statements referring to the lens:
A. It has the shape of a biconcave lens
B. It is transparent
C. It is located between the iris and the vitreous body
D. It contains blood vessels
E. It does not contain blood vessels

24. Select the correct statements referring to the vitreous body:
A. It has a spheroid shape
B. It has an aqueous consistency
C. It has a gelatinous consistency
D. It is opaque
E. It is transparent

25. Select the correct statements referring to the visual accommodation:
A. It occurs as a result of the corneal suspensory apparatus
B. It is a reflex act regulated by the cortical centers
C. It is a reflex act regulated by the superior quadrigeminal colliculus
D. It occurs as a result of the elasticity of the lens
E. Its passive organ is represented by the ciliary muscle

26. The remotum point represents:
A. The farthest point from the eye at which an object is clearly seen with the least accommodation effort
B. The nearest point to the eye at which an object is clearly seen with the least accommodation effort
C. The farthest point from the eye at which an object is clearly seen with the most accommodation effort
D. The nearest point to the eye at which an object is clearly seen with the most accommodation effort
E. The nearest point to the eye at which an object is clearly seen without any accommodation effort

27. Which of the following statements are true?
A. Rod cells contain a single visual pigment called iodopsin
B. Rod cells contain a single visual pigment called rhodopsin
C. Rod cells contain three types of pigments - iodopsins
D. Cone cells contain a single visual pigment called iodopsin
E. Cone cells contain three types of pigments - iodopsins

28. Select the correct statements referring to the visual accommodation to darkness:
A. Vitamin A is transformed into opsin
B. The quantity of visual pigment increases
C. The quantity of visual pigment decreases
D. Visual pigments in the photoreceptor cells are converted into retinen and opsin
E. The retinen and opsin in the photoreceptor cells are converted into visual pigments

29. Which of the following statements referring to the visual pathway are true?
A. It represents the peripheral segment of the visual analyzer
B. It represents the intermediate segment of the visual analyzer
C. Its second neuron is located in the bipolar cells of the retina
D. Its third neuron is located in the external geniculate body (laterally)
E. Its third neuron is located in the internal geniculate body (medially)

30. The primary visual area extends to:
A. The lateral face of the occipital lobes
B. The medial face of the occipital lobes
C. The inferior face of the occipital lobes
D. The lateral face of the temporal lobes
E. The medial face of the temporal lobes

31. Binocular vision confers:
A. Colour perception
B. Shape perception
C. Surface perception
D. Depth perception
E. Stereoscopic vision

32. The external ear contains:
A. The internal auditory canal
B. The external auditory canal
C. The bony semicircular canals
D. The ear ossicles
E. The pinna

33. Select the correct statements referring to the Eustachian tube:
A. Links the external ear to the tympanic cavity
B. Links the tympanic cavity to the nasopharynx
C. Opens on the anterior wall of the tympanic cavity
D. Opens on the posterior wall of the tympanic cavity
E. Opens on the lateral wall of the tympanic cavity

34. Select the correct statements referring to the anvil:
A. It is part of an articulated chain of ossicles located in the middle ear
B. It is part of an articulated chain of ossicles located in the bony labyrinth
C. It is part of an articulated chain of ossicles located in the membranous labyrinth
D. It comes into contact with the oval window
E. It comes into contact with the round window

35. Which of the following statements referring to the internal ear are true?
A. Its lateral wall is represented by the tympanum
B. The Eustachian tube opens on its anterior wall
C. It contains a series of cavities, the membranous labyrinth which houses the bony labyrinth
D. It contains a series of cavities, called bony labyrinth, hollowed out of the temporal bone
E. Contains an articulated chain of ossicles

36. Select the correct statements referring to the cochlear duct:
A. It starts from the superior part of the utricle
B. It starts from the inferior part of the utricle
C. It starts from the superior part of the saccule
D. It starts from the inferior part of the saccule
E. It contains Corti's organ

37. The endolymph is:
A. Contained in the tympanic and basilar ducts
B. Contained in the cochlear canal
C. Contained in the membranous labyrinth
D. A clear fluid secreted by the choroid plexuses
E. A viscous fluid secreted by the choroid plexuses

38. The utricle is located:
A. Inside the bony labyrinth
B. Inside the membranous labyrinth
C. Under the saccule
D. On the superior part of the labyrinth
E. On the inferior part of the labyrinth

39. Select the correct statements referring to the auditory cells:
A. They are located under the support cells
B. They are located above the support cells
C. They have auditory cilia at their basal poles
D. They have auditory cilia at their apical poles
E. They are located in the membranous semicircular canals

40. The vestibular receptors are located in:
A. The bony cochlea
B. The membranous cochlea
C. The membranous labyrinth
D. The bony semicircular canals
E. The Eustachian tube

41. The ampullary crests are:
A. Formed of sensory cells
B. Formed of support cells
C. Located in the ampullae of the membranous semicircular canals
D. Contained in the basilar membrane
E. Located in the otolithic membrane

42. Select the correct statements referring to the ampullary crests:
A. They are located at the basis of the utricle
B. They are located at the basis of the saccule
C. They are located at the basis of the membranous semicircular canals
D. They maintain the balance during the circular acceleration of the head and body
E. They amplify weak auditory signals

43. The first neuron of the auditory pathway is located in:
A. The spiral Corti ganglion
B. The spinal Corti ganglion
C. The spiral Scarpa ganglion
D. The spinal Scarpa ganglion
E. The vestibular ganglion

44. It is true that the axon of the second neuron of the auditory pathway:
A. Spirals and afterwards it follows a descending trajectory towards the inferior colliculus
B. Spirals and afterwards it follows an ascending trajectory towards the inferior colliculus
C. It doesn't spiral and follows an ascending trajectory towards the superior colliculus
D. Spirals and afterwards it follows a descending trajectory towards the superior colliculus
E. Spirals and afterwards it follows an ascending trajectory towards the superior colliculus

45. The vestibulocerebellar bundle controls:
A. Muscle tonus
B. Static equilibrium
C. Dynamic equilibrium
D. Eye movements originating in the labyrinth
E. Eye movements originating in the visual cortex

46. The vestibulonuclear bundle controls:
A. Muscle tonus
B. Static equilibrium
C. Dynamic equilibrium
D. Eye movements originating in the labyrinth
E. Eye movements originating in the visual cortex

47. The human ear perceives sounds with frequencies ranging between:
A. 20-200 Hz (cycles/second)
B. 20-2000 Hz (cycles/second)
C. 20-2000 decibels
D. 20-20000 decibels
E. 20-20000 Hz (cycles/second)

48. The fundamental characteristics of soundwaves include:
A. The loudness determined by the frequency of the waves
B. Intensity determined by the frequency of the waves
C. Intensity determined by the accompanying superior harmonic vibrations
D. Vocal timbre determined by the accompanying superior harmonic vibrations
E. Vocal timbre determined by the frequency of the waves

49. Macula receptors are stimulated:
A. Mechanically by otoliths
B. Chemically by otoliths
C. Only in static condition
D. Only in dynamic condition
E. Both in static and in dynamic conditions

50. It is true that macula receptors:
A. Detect the body's movement speed
B. Do not detect the body's movement speed
C. Detect the head's movement speed
D. Do not detect the head's movement speed
E. Detect acceleration (the ones in the utricle detect vertical acceleration, those in the saccule detect horizontal acceleration)

1. The adenohypophysis produces the following hormones:
A. Antidiuretic hormone (ADH)
B. Vasopressin
C. Ocytocine
D. Adrenocorticotropic hormone (ACTH)
E. Thyroid-stimulating hormone (TSH)

2. It is true that the neurohypophysis:
A. Deposits the antidiuretic hormone secreted by the supraoptic nucleus of the anterior hypothalamus
B. Secretes the thyroid-stimulating hormone
C. Deposits the ocytocine secreted by the paraventricular nucleus of the anterior hypothalamus
D. Secretes the somatotropic hormone (STH)
E. Secretes prolactin

3. The target organs influenced by the somatotropic hormone are represented by:
A. The adrenal glands
B. The liver
C. Skeletal muscles
D. Ovaries
E. Testicles

4. Which of the following hormones are protein hormones?
A. Hypophysis hormones
B. Pancreatic hormones
C. Adrenal hormones
D. Sexual hormones
E. The parathormone

5. The hypophysis is an endocrine gland:
A. Located at the basis of the encephalon
B. Located behind the optic chiasm
C. Located on a fossa formed by the sella turcica of the sphenoid bone and the piamater
D. Connected to the base of the hypothalamus through the pituitary stalk
E. Consisting of two lobes

6. The role of the hypothalamo hypophyseal tract is to achieve a direct connection between:
A. Anterior hypothalamic nuclei and the hypophysis
B. Anterior hypothalamic nuclei and the posterior lobe of the hypophysis
C. The middle hypothalamic nuclei and the neurohypophysis
D. The middle hypothalamic nuclei and the adenohypophysis
E. Posterior hypothalamic nuclei and the posterior lobe of the hypophysis

7. The glandulotrope hormones secreted by the adenohypophysis are:
A. Somatotropin (STH)
B. Prolactine
C. Thyrotropin (TSH)
D. Corticotropin (ACTH)
E. Gonadotropins (FSH and LH)

8. The somatotrope hormone stimulates the growth of the body together with:
A. Insulin
B. Glucagon
C. Thyroid hormones
D. Estrogens
E. Testosterone

9. Somatotropin (STH) secretion is stimulated by:
A. High blood sugar
B. Increased blood aminoacid concentration
C. Decreased lipidemia
D. Physical effort
E. Stress

10. Acromegaly is characterized by:
A. Exaggerated growth of facial bones
B. Exaggerated growth of wide bones
C. Thickened lips
D. Exaggerated growth of arms and legs
E. Low blood sugar

11. Prolactin secretion is inhibited by:
A. Estrogens
B. Testosterone
C. Contractions of the uterus and the vagina during labour
D. Breast feeding
E. Dopamine produced by the middle hypothalamic nuclei

12. Thyrotropin secretion induces:
A. Hyperthyroidism
B. Exophthalmia
C. Basedow-Graves disease
D. Cretinism in children
E. Mixedema in adults

13. The follicle stimulating hormone stimulates in male:
A. Testosterone secretion
B. Spermatogenesis
C. The development of the seminiferous tubes in the testicles
D. Estrogen secretion
E. Androgenic hormone secretion

14. Select the correct statements referring to the neurohypophysis:
A. It represents the posterior lobe of the hypophysis
B. It secretes the antidiuretic hormone (ADH)
C. It secretes oxytocin
D. It is connected to the middle hypothalamus through the hypothalamic hypophyseal tract
E. It deposits and releases in the blood ADH and oxytocin

15. The antidiuretic hormone (ADH) secretion is inhibited by:
A. Impulses from the baroreceptors located in the blood vessel walls
B. Decreased volemia
C. Increased volemia
D. Decreased blood pressure
E. Alcohol

16. Oxytocin has the following effects:
A. Induces the contraction of myoepithelial cells in the walls of galactophorous ducts in the mammary ducts
B. Induces milk ejection
C. Stimulates smooth muscle contraction in the non-pregnant uterus
D. Induces foetal expulsion
E. Increases milk secretion

17. The regulation of the endocrine gland secretion through a feedback mechanism is called:

A. Hormonal feedback, if it refers to the alteration of the hormone's plasma concentration
B. Non-hormonal feedback, if it refers to the alteration of the plasma concentration of certain substances (blood sugar, blood calcium)
C. Negative feedback, if it represents the permanent alteration of certain parameters in order to maintain these within certain limits, considered normal
D. Positive feedback, if it represents the progressive amplification of the system response, up to a point, after which the system changes its properties
E. Hormonal feedback, if it refers to the alteration of the plasma concentration of certain substances (blood sugar, blood calcium)

18. What effects do thyroid hormones have on the lipid metabolism?

A. They inhibit lipolysis
B. They deplete adipose reserves
C. They decrease blood cholesterol
D. They activate hepatic mechanisms which remove cholesterol from the circulation
E. They increase blood cholesterol

19. Thyroid hormones stimulate:

A. Protein absorption in the small bowel
B. O_2 consumption by the metabolic-active cells
C. Basal metabolism
D. Cholesterol synthesis in the adipose cells
E. Glucose degradation in the absence or presence of O_2

20. Select the effects of thyroxine on the nervous system:

A. It influences the differentiation of neuroglial cells
B. It influences the formation of the myelin sheath
C. It influences the formation of synapses
D. It produces irritability
E. It produces anxiety

21. The role of calcitonin is important:

A. Only in the adult
B. In childhood
C. In the period of bone growth
D. To stimulate the fixation of calcium in the bone tissue
E. To maintain blood calcium (phosphocalcic balance)

22. Primary hypothyroidism in the adult manifests itself as:
A. Increased quantity of interstitial fluid
B. Bradycardia (slow heart rate)
C. Tachycardia (rapid heart rate)
D. Increased thyrotropin (TSH) secretion as a consequence of the incapacity of the gland to secrete hormones
E. Increased TSH secretion which induces an enlargement of the gland (goitre)

23. The cortex of the adrenal gland has three areas:
A. The glomerular area which synthesizes mineralocorticoids (cortisol)
B. The glomerular area which synthesizes mineralocorticoids (aldosterone)
C. The fascicular area which synthesizes glucocorticoids (aldosterone)
D. The fascicular area which synthesizes glucocorticoids (cortisol)
E. The reticular area which synthesizes sex steroid hormones

24. Select the metabolic effects of cortisol:
A. It activates protein metabolism
B. It decreases nitrogen elimination from the body
C. It produces high blood sugar
D. It inhibits gluconeogenesis from aminoacids
E. It inhibits lipolysis

25. Cortisol has the following effect(s) in the blood:
A. Increases blood sugar
B. Increases the number of erythrocytes
C. Decreases the number of leucocytes
D. Decreases the number of thrombocytes
E. Increases the number of thrombocytes

26. Which of the following is not an effect of the glucocorticoid hormones:
A. Activation of lipolysis
B. Activation of glycogenogenesis
C. Increased secretion of hydrochloric acid
D. Increased secretion of pepsinogen
E. Increased gluconeogenesis from aminoacids

27. The synthesis and release of cortisol is controlled:
A. By the hypothalamus and the hypophysis
B. Through the hypothalamic-hypophyseal-adrenal axis
C. Through negative feedback mechanisms
D. By the level of thyrotropin (TSH) secretion
E. By the level of plasma cortisol secretion

28. The renal effects of aldosterone include:
A. Natrium and chlorine reabsorption
B. Potassium and H^+ secretion
C. Water reabsorption
D. Increased blood potassium
E. Aciduria

29. Aldosterone hypersecretion determines:
A. Massive water and salt retention
B. Edemas
C. High blood pressure
D. Low blood pressure
E. Adynamia (decreased effort capacity)

30. The adrenal medulla secretes:
A. Neurohormones
B. Catecholamines
C. Adrenalin
D. Noradrenalin
E. Aldosterone

31. Which of the following effects belong to catecholamines?
A. Bronchial constriction
B. The contraction of smooth muscles of the digestive tract walls
C. Relaxation of digestive tract sphincters
D. Inhibition of digestive secretions
E. Spleen contraction

32. Catecholamine secretion increases in the following condition(s):
A. High blood sugar
B. High blood pressure
C. Cold
D. Pain
E. Physical effort

33. Select the correct statements referring to the parathyroid glands:
A. They represent two small formations located in the thyroid isthmus, on the posterior face of the thyroid lobes
B. Their presence is indispensable for life
C. They contain a connective stroma consisting of connective tissue, blood vessels, lymph vessels and nerves
D. They contain a glandular parenchyma consisting of the glandular epithelial cells arranged in follicles

E. They secrete parathormone (PTH)

34. Select the effect of the parathormone on the bone tissue:
A. Increased osteoclast number
B. Increased osteolytic activity of osteoclasts
C. Increased number and activity of multinucleated bone cells
D. Ca^{2+} deposits in the bone matrix
E. Stimulation of bone mineralization

35. Parathormone hypersecretion results in:
A. Striated muscle spasms
B. Smooth muscle spasms
C. Vertebral groove muscle contracture
D. Laryngeal spasm which may lead to death by asphyxiation
E. Bone decalcification followed by deformations and spontaneous fractures

36. Tetany consists of:
A. Muscle spasms
B. Convulsions
C. Heart palpitations
D. Cardiac arrhythmia
E. Multiple bone fractures

37. Which of the following statements referring to the thymus are true?
A. It is a paired organ situated behind the sternum
B. It is a gland with mixed secretion
C. Its function as a lymphoid organ is maintained throughout one's lifetime
D. Its function as an endocrine gland starts after puberty
E. It has its own connective capsule and a parenchyma divided by the inner extensions of the capsule

38. Select the correct statements referring to the epiphysis:
A. Together with the epithalamus it forms a neurosecretory epithalamic-epiphyseal system
B. It secretes melatonin and vasotocin
C. It secretes the melanocyte-stimulating hormone (MSH) and vasotocin
D. It is tightly connected to the retina
E. It reaches maximum development during childhood and it starts to regress before puberty

39. Melatonin has inhibiting effects on:
A. The release of gonadotrope hormones
B. The release of the follicle stimulating hormone (FSH) and of the luteinizing hormone (LH)
C. The hypothalamic-hypophyseal-adrenal axis
D. The hypothalamic-hypophyseal-thyroid axis
E. Some of the hypothalamus nuclei

40. Select the correct statement referring to the Langerhans islets of the endocrine pancreas:
A. They are small and polygonal
B. They secrete glucagon in a percentage of 70% (A cells)
C. They secrete insulin in a percentage of 10% (B cells)
D. They secrete somatostatin in a percentage of 70% (D cells)
E. They constitute most of the pancreas volume

41. In the liver, insulin stimulates:
A. Glycogenogenesis
B. Gluconeogenesis
C. Lipogenesis
D. Proteolysis
E. Ketogenesis

42. Which of the following statements referring to the regulation of insulin secretion and release are correct?
A. The main stimulus is represented by the level of blood sugar
B. The increase of blood sugar inhibits insulin secretion and release
C. The decrease of blood sugar increases insulin secretion and release
D. The main stimulus is represented by the plasma level of insulin
E. All hyperglycemic hormones indirectly stimulate insulin secretion and release

43. Glucagon has the following effects on the adipose tissue:
A. It stimulates the oxidation of fatty acids
B. It facilitates ketone body synthesis
C. It stimulates triglyceride hydrolysis
D. It stimulates lipolysis
E. It stimulates glucose transportation through the adipose cell membrane

44. Select the correct statement referring to diabetes mellitus:
A. It represents the decrease of insulin production
B. It represents the decrease of insulin consumption in tissues
C. It triggers severe metabolic disorders
D. It develops as a consequence of insulin hypersecretion
E. It generates disorders of the cardiovascular apparatus, renal apparatus and the nervous system

45. The clinical signs of diabetes mellitus include:
A. Polydipsia
B. Acid-base imbalance
C. Electrolyte imbalance
D. Weight gain

E. Complications leading to the morphofunctional alteration of certain tissues and organs of vital importance

1. The formation and development of bones is achieved:
A. Through the process of osteogenesis
B. Through the process of osteolysis
C. By the transformation of the cartilaginous tissue of the embryo into the bone tissue of the adult
D. Only in the intrauterine life
E. In three stages

2. The increase in length of bones is achieved:
A. Through membrane ossification (enchondral)
B. Through cartilage ossification (desmal)
C. Through the growth cartilages situated at the border between the epiphysis and diaphysis
D. By forming new bone tissue towards the diaphysis
E. In the long bones (both in the diaphysis and in the epiphysis)

3. Select the changes which occur in the ossification points of membrane bones:
A. The destruction of the growth cartilage occurs, followed by bone formation
B. There is a direct ossification of certain connective membranes
C. Connective cells are transformed into ossein-secreting osteoblasts
D. Ossein is impregnated with calcium salts
E. Ossification irradiates from the periphery to the center and through anastomoses forms the bone

4. Which of the following statements referring to bone growth are true?
A. Growth in length is due to the internal osteogenic layer of the periosteum
B. Growth in depth is due to the growth cartilage between the diaphysis and each epiphysis
C. Bone growth is based on osteogenesis (the formation of bone tissue by osteocytes)
D. Bone remodeling is the result of osteolysis (the destruction of the bones by osteoclasts)
E. The factors controlling bone growth are genetic, hormonal and nutritional

5. Bone growth depends on:
A. Endocrine factors
B. Vitamins
C. Enzymes
D. Food rich in calcium salts
E. Food poor in calcium salts

6. Bone remodeling is regulated by:
A. Two mechanisms: hormonal and nervous
B. The nervous mechanism which maintains blood calcium at optimal levels
C. The nervous mechanism which involves bone response to the action of mechanical forces
D. The hormonal mechanism which involves bone response to gravitational forces
E. The hormonal mechanism which maintains blood calcium at optimal levels

7. Select the correct statements referring to the bone system:
A. It consists of all the bones of the body connected by muscles
B. It consists of all the muscles of the body (somatic and visceral)
C. It contains hard tissue organs
D. It contains resistant organs
E. It contains organs made of soft connective tissue

8. According to the ratio existing between the three dimensions, bones can be:
A. Large
B. Pneumatic
C. Sesamoid
D. Short
E. Long

9. The skeleton of the head consists of:
A. Viscerocranium, which protects the encephalon
B. Neurocranium, consisting of 14 bones
C. Viscerocranium, consisting of 8 bones
D. Paired and unpaired bones
E. Short bones

10. The paired bones of the neurocranium are:
A. Palatine
B. Nasal
C. Parietal
D. Temporal
E. Maxilla

11. Select the correct statements regarding the vertebral column:
A. It represents the axial skeleton of the body
B. It has 5 regions: cervical, ventral, thoracic, lumbar and sacral
C. It is located in the median and anterior part of the body
D. It is curved sagittally and frontally
E. It consists of bony pieces called vertebrae

12. Select the correct statements referring to the vertebral column:
A. It plays a triple role
B. It plays a double role
C. It is the support axis of the skeleton
D. It protects the spinal cord
E. It participates to the head and trunk movements

13. A typical vertebra has:
A. Anteriorly, the vertebral arch
B. Anteriorly, the vertebral body
C. Posteriorly, the vertebral arch
D. Posteriorly, the vertebral body
E. The vertebral foramen which, through the superposition of vertebrae forms the intervertebral foramina

14. The sagittal curvatures of the vertebral column are:
A. Cervical, with posterior concavity
B. Thoracic, with anterior convexity
C. Lumbar, with posterior concavity
D. Sacral, with anterior convexity
E. Scoliosis, with left or right convexity

15. The sacral bone results from the fusion of:
A. 7 sacral vertebrae
B. 12 sacral vertebrae
C. 4-5 sacral vertebrae
D. 5 sacral vertebrae
E. 4 sacral vertebrae

16. The skeleton of the thorax consists of:
A. 12 thoracic vertebrae, anteriorly
B. 12 cervical vertebrae, posteriorly
C. 12 pairs of ribs, posteriorly
D. 12 pairs of ribs, laterally
E. Sternum, situated anteriorly

17. The ribs have the following characteristics, with one exception. Which is that?
A. They extend from the cervical vertebral column to the sternum
B. They are divided into three groups
C. There are twelve pairs of ribs
D. Only some of them articulate directly with the sternum
E. Participate in the formation of the thoracic cage

18. Select the correct statements referring to the scapular girdle:
A. It connects the upper limb proper to the skeleton of the bony pelvis
B. It consists of the clavicle and the scapula
C. It has two articulations with the axial skeleton
D. It has a single articulation with the axial skeleton
E. It connects the upper limb proper to the skeleton of the bony thorax

19. The clavicle articulates with:
A. Laterally, with the scapula through the acromial extremity
B. Medially, with the shoulder blade through the acromial extremity
C. Laterally, with the sternal manubrium through the sternal extremity
D. Medially, with the sternal manubrium through the sternal extremity
E. Laterally, with the humerus through the glenoid fossa

20. Select the correct statements referring to the upper-limb skeleton:
A. It is connected to the skeleton of the trunk through the scapular girdle
B. It is connected to the skeleton of the trunk through the pelvic girdle
C. The humerus forms by itself the skeleton of the forearm
D. The skeleton of the hand consists of 8 carpal bones, 5 metacarpals and 14 phalanges
E. The thumb, the hallux, only has two phalanges

21. Select the correct statements referring to the lower-limb skeleton:
A. It is connected to the skeleton of the trunk through the sacral girdle
B. It is connected to the skeleton of the trunk through the pelvic girdle
C. The femur participates in the formation of the foot skeleton
D. The skeleton of the thigh consists of two bones, the tibia and the fibula
E. The pelvic girdle is formed by the two coxal bones and the sacrum

22. The pelvic girdle consists of:
A. The two sacral bones
B. The two coxal bones
C. The femur
D. Two bones: ilium and ischium
E. Two bones: ilium and pubis

23. Select the correct statements referring to the skeleton of the thigh:
A. It consists of two bones, the tibia and the fibula
B. It consists of a single bone: the femur
C. It contains a bone which, through the distal epiphysis, articulates with the tibia and fibula
D. It contains a bone which, through the proximal epiphysis, articulates with the coxal bone
E. It contains a bone which, through the distal epiphysis, articulates anteriorly with the patella

24. The skeleton of the shin consists of:
A. Two bones: tibia and fibula
B. Three bones: tibia, fibula and patella
C. A larger bone situated laterally
D. A larger bone situated medially
E. A sesamoid bone

25. The skeleton of the foot consists of:
A. 8 tarsal bones
B. 7 tarsal bones
C. 7 metatarsal bones
D. 5 metatarsal bones
E. 14 phalanges

26. Select the correct statements referring to the bone cells:
A. Osteoblasts secrete proteins which enter the composition of ossein
B. Osteocytes are bone cells which lose their secretory role
C. Osteoclasts have an osteolytic activity stimulated by calcitonin
D. Osteoclasts have an osteolytic activity inhibited by parathormone
E. Osteoplasts contain two osteocytes each

27. Which of the following statements referring to the role of the bone system are true?
A. It protects the spinal cord in the central canal
B. It defines the body's characteristic shape
C. It supports the weight of the body
D. Ii presents insertion points for muscles
E. The red bone marrow in the compact tissue of long-bone epipshyses is a hematopoietic organ

28. The mechanical function of bones includes:
A. Support for the body's soft tissues
B. Locomotion, bones being the active component of the locomotor system
C. Forming a system of levers on which muscles act
D. The protection of certain vital organs (brain, heart, lungs)
E. The formation of figurative blood elements in the spinal bone marrow

29. The metabolic function of bones includes the following aspects:
A. The protection of certain vital organs
B. Depositing mineral salts in the bones
C. The processes of mineral substance fixation or mobilization
D. The formation of figurative blood elements in the spinal bone marrow
E. The formation of figurative blood elements in the compact bone marrow

30. Select the incorrect statement referring to bone demineralization:
A. In the adult, it ensures the phosphorus calcium balance together with bone mineralization
B. In pregnancy, a part of the mother's calcium is mobilized in the body of the foetus
C. It takes place in parallel with muscle paralysis
D. In elderly people, demineralization processes are more active than mineralization ones
E. In young people, demineralization processes are more active than mineralization ones

31. The location of hematopoietic organs is represented by:
A. The wide bones of the child
B. The wide bones of the adult
C. All the bones of the child
D. The red marrow in the central canal of long bone diaphyses, in the adult
E. The red marrow in the central canal of long bone diaphyses, in the elderly

32. Joints are organs that connect:
A. Two bones
B. Several bone extremities
C. Bones and muscles
D. Two or several muscles
E. Muscles and tendons

33. Select the correct statements referring to synarthroses:
A. They have no articular cavity
B. They are fixed joints
C. They are immobile joints
D. According to the type of tissue that comes between the bones of the joint, they are classified into: syndesmoses, synchondroses, synostososes
E. They have an articular cavity

34. There are three categories of levers in the body, characterized by:
A. A fulcrum (F), represented by the joint
B. The effort (E), represented by the contracting muscles
C. The effort (E), represented by the bones
D. Resistance (R), represented by the bones
E. Resistance (R), represented by the contracting muscles

35. The following types of movements can be carried out by a synovial joint:
A. Flexion (bringing two adjoining segments closer)
B. Extension (bringing two adjoining segments closer)
C. Adduction (pulling a segment away from the median axis of the body)
D. Abduction (pulling a segment away from the median axis of the body)
E. Pronation - supination

36. Select the correct statements referring to fractures:
A. It represents the total or partial rupture of a bone following a trauma of certain violence
B. It represents the dislocation of the composing elements of a joint
C. They may be spontaneous in the case of a systemic disorder
D. They may be the consequence of a faulty position
E. They may occur, in special instances, in systemic disorders

37. Select the correct statements referring to the muscle system:
A. It comprises all the muscles of the body
B. Somatic muscles (visceral) are made of striated muscle tissue
C. Somatic muscles, together with the corresponding bones and joints, ensure the movement of the body segments
D. Visceral muscles (striated) ensure the motility of the viscera
E. It comprises muscles with various shapes

38. The striated muscle fiber is surrounded by:
A. Endomysium
B. Epimysium
C. Perimysium
D. A thin sheath of connective tissue
E. A thick sheath of connective tissue

39. The somatic motor innervation of the striated muscle is supplied by the axons of the following neurons:
A. Gamma somatomotor in the anterior horn of the spinal cord
B. Sensory in the spinal ganglion
C. Alpha somatomotor in the anterior horn of the spinal cord
D. Alpha and gamma somatosensory
E. Alpha somatomotor in the posterior horn of the spinal cord

40. Specify which of the following muscles belong to the head:
A. The occipitalis muscle
B. The orbicularis oris muscle
C. The pterygoideus muscles
D. The zygomaticus major muscle
E. The facialis muscle

41. The muscles of the back and of the neck are represented by:
A. The trapezius muscles, innervated by the (VI) accessory nerves
B. The trapezius muscles, situated superiorly
C. The latissimus dorsi muscles, situated inferiorly
D. The intercostal muscles, situated in depth

E. The trapezius muscles, situated inferiorly

42. The muscles of the upper limb are grouped in:
A. Muscles of the shoulder
B. Muscles of the arm
C. Muscles of the hand
D. Muscles of the forearm
E. Muscles of the palm

43. The muscles of the thigh are grouped in:
A. The posteromedial group
B. The anteromedial group
C. The posterior group
D. The anterolateral group
E. The lateral group

44. Select the correct statements referring to the sartorius muscle:
A. It is situated on the anterior part of the thigh
B. It is situated deep to the quadriceps femoris muscle
C. It is situated superficial to the quadriceps femoris muscle
D. It is an extensor of the thigh on the pelvis
E. It is the longest muscle of the body

45. Select the correct statements referring to the foot muscles:
A. They are situated on the dorsal face
B. They carry out the extension of the leg
C. They are situated on the plantar face
D. They carry out the flexion of the toes
E. They carry out the extension of the toes

46. Select the correct statements referring to the skeletal striated muscle:
A. It is a cylindrical, elongated cell
B. It has a thin sarcolema and little sarcoplasm
C. It has several nuclei, disposed centrally
D. Its sarcoplasm contains common and specific intracytoplasmic organelles
E. Its sarcoplasm contains glycogen, fat and haemoglobin inclusions

47. The muscle fibers contain:
A. Contractile proteins - myosin and actin
B. Regulatory proteins - myosin and actin
C. Regulatory proteins – tropomyosin and troponine
D. Energy producing substances - glycogen, glucose, ATP and CP
E. A Ca^{2+} deposit in the sarcoplasmatic reticulum

48. Select the correct statements referring to the motor unit:
A. It represents the functional unit of the skeletal muscle
B. It represents the contractile unit of the skeletal striated muscle fiber
C. It consists of a motoneuron together with the skeletal muscle fibers it innervates
D. It contains hundreds of muscle fibers in the muscles associated with fine motor skills
E. It contains 3- 6 muscle fibers in the muscle fibers in the muscles associated with gross motor skills

49. The initiation of skeletal muscle fiber contractions involves:
A. The release of Ca^{2+} from the sarcoplasmatic reticulum
B. The diffusion of Ca^{2+} from the sarcoplasm towards the myofibrils
C. Actomyosin disassembly, a process facilitated by Ca^{2+}
D. ATP hydrolysis, under the action of actomyosin, with energy release
E. Binding myosin to actin and forming actomyosin

50. Muscle tonus plays a role in:
A. Thermoregulation
B. Maintaining the dynamic position of the body
C. Mimic control (facial expression)
D. Triggering muscle contractions (the contraction is completed faster)
E. Ensuring joint fixation

Chapter VI ▸ DIGESTION AND ABSORPTION

1. The accessory glands of the digestive tract are represented by:
A. The parathyroid salivary glands
B. The sublingual salivary glands
C. The submandibular salivary glands
D. The liver
E. The endocrine pancreas

2. The digestive tract consists in the following segments:
A. The oral cavity
B. The nasal cavity
C. The pharynx
D. The esophagus
E. The lungs

3. Select the correct statements referring to the teeth:
A. They are hard structures playing a role in mastication
B. There are 24 teeth in children
C. There are 32 teeth in adults
D. They consist of crown, neck and root
E. They play a role in swallowing

4. Select the correct statements referring to the stomach:
A. It is a hollow organ
B. It has a capacity of approximately 5 liters
C. It is situated on the right side of the abdomen, immediately above the diaphragm
D. It communicates with the esophagus through the cardia
E. It communicates with the small bowel through the pyloric sphincter

5. Select the correct statements referring to the colon:
A. It is a continuation of the duodenum
B. It continues with the rectum
C. It has four parts: ascending, transverse, descending and sigmoid
D. It is a segment of the small intestine
E. Its mucosa lacks villosities

6. Select the correct statements referring to the parotid salivary glands:
A. They are paired glands
B. They are innervated by the (IX) facial nerve
C. They consist mainly of mucous cells
D. They are innervated by the (IX) glossopharyngeal nerve
E. They are the largest salivary glands

7. Select the correct statements referring to the intestinal villosities:
A. They can be found in the rectal mucosa
B. They can be found in the small intestine mucosa
C. They are adapted according to absorption
D. Centrally, they have a chyliferous vessel, blood vessels and nerves
E. On the surface, they have a pluristratified epithelium

8. The hepatic hilum provides access to the liver for:
A. The hepatic artery
B. The two hepatic canals
C. The portal vein
D. The hepatic veins
E. The nerves of the liver

9. Select the correct statements referring to the portal vein:
A. Ensures the nutritive vascularization of the liver
B. Ensures the functional vascularization of the liver
C. Supplies the liver with blood containing nutrients absorbed from the digestive tract
D. It collects blood from the stomach, pancreas, bowel and spleen
E. Through the hepatic artery, it supplies the liver with nutriments and oxygen

10. Select the correct statements referring to mastication:
A. Ensures the formation of the food bolus
B. Triggers salivary secretion
C. Inhibits olfactory and gustatory receptors
D. It is an involuntary reflex (in the adult) which becomes automatic gradually
E. It is regulated by the bulbopontine and cortical centers

11. Select the correct statements referring to deglutition:
A. Deglutition is a voluntary act only as far as the palatine arches, where it turns into an involuntary act
B. The pharyngeal transit time involuntarily accomplishes bolus transit from the pharynx to the esophagus
C. It includes all the motor activities which ensure the transportation of the food bolus from the oral cavity to the intestine
D. It takes place in three phases
E. It has an oral, a pharyngeal and an esophageal phase

12. The following statements are true referring to vitamins contained in foods:
A. They play a nutritive and energetic role
B. They act as biocatalyzers
C. They are important in the body’s growth process
D. They are liposoluble (vitamins belonging to the B complex, vitamin C)
E. They are hydrosoluble (vitamins A, D, E and K)

13. Select the correct statements regarding digestive juices:
A. They are secreted by the endocrine glands in the mucosa of the digestive tract
B. They are secreted exclusively by the accessory glands of the digestive tract
C. They contain digestive enzymes with unspecific action on the substances contained by food
D. They contribute to the chemical transformation of food into nutriments
E. They act on food through water and digestive enzymes

14. Recognize the types of digestive enzymes:
A. Amylolytic, which act on the dietary monosaccharids
B. Glycolytic, which act on the complex dietary carbohydrates
C. Lipolytic, which decompose dietary carbohydrates into glycerol and aminoacids
D. Proteollytic, which transform dietary proteins into fatty acids
E. Lipolytic, which transform dietary cholesterol into fatty acids

15. Saliva contains:
A. Electrolytes, in a lower concentration than in plasma, with no exception
B. Salivary amylase, inactivated by the low intragastric pH
C. Endogenous substances (heavy metals or pathogenic substances)
D. Exogenous substances (urea, creatinine, uric acid)
E. Water, organic and anorganic substances

16. Select the digestive roles of the saliva:
A. Neutralization of food acidity
B. Hydrolysis under the action of the salivary amylase of starch into dextrine and maltose
C. Maintaining the humidity of the oral cavity
D. Forming the food bolus with the help of salivary mucus
E. Maintaining dental cleanliness

17. Select the incorrect statements regarding the control of the phases of deglutition:
A. The oral phase is voluntary
B. The pharyngeal phase is automatic
C. The esophageal phase is involuntary
D. All the phases of the deglutition are automatic
E. All the phases of the deglutition can be voluntarily controlled

18. Select the role of hydrochloric acid in the composition of gastric juice:
A. It activates proteolytic enzymes
B. It creates an optimal action environment for the proteolytic enzymes
C. It has a bactericidal effect
D. It inhibits gastric evacuation
E. It stimulates gastric evacuation

19. The proteolytic enzymes of the gastric juice are represented by:
A. Pepsin
B. Trypsin
C. Labferment
D. Gelatinase
E. Elastase

20. Select the correct statements referring to the cephalic phase of gastric secretion regulation:
A. It involves exclusively nervous mechanisms
B. It involves nervous and humoral mechanisms
C. It is stimulated by the sight or smell of food
D. It is triggered by the distension of the gastric walls, as a consequence of the passage of the food boluses
E. It is based on vago vagal reflexes

21. Gastric motility is:
A. Controlled only by a nervous mechanism
B. Controlled only by a humoral mechanism
C. Controlled by autonomic plexuses and enterohormones
D. Inhibited by gastrin
E. Inhibited by secretin

22. Select the correct statement referring to the pancreatic secretion:
A. It is the secretion product of the endocrine pancreas
B. It enters the duodenum through the main canal (Santorini) and the accessory canal (Wirsung)
C. It has an alkaline pH
D. It contains enzymes secreted by the epithelial cells of the excretory cells
E. It contains the bicarbonate produced by the cells of the pancreatic acini

23. Select the correct statements referring to the pancreatic proteolytic enzymes:
A. They are very strong enzymes
B. They attack all categories of organic substances in food
C. They are released in the form of proenzymes
D. They are represented by trypsin, chymotrypsin, carboxypeptidase and elastase
E. They decompose proteins into fatty acids and glycerol

24. Select the correct statements referring to the bile:
A. It is the product of the exocrine activity of hepatocytes
B. It is produced intermittently by hepatocytes and deposited in the gall bladder
C. It contains biliary pigments, cholesterol and lecithin
D. It contains biliary salts whose function is to emulsify fats, increasing lipase activity

E. It is necessary for digestion and protein absorption

25. The roles of the bile consist of:
A. Lipid digestion and absorption
B. Liposoluble vitamin absorption
C. Laxative, by stimulating intestine movement
D. Neutralizing gastric chyme activity
E. Chemical digestion of processed starch

26. Select the correct statements referring to the action of intestinal disaccharides:
A. Saccharase decomposes saccharose into glucose and fructose
B. Saccharase decomposes saccharose into glucose and galactose
C. Maltase decomposes maltose into two glucose molecules
D. Lactase decomposes lactose into glucose and galactose
E. Lactase decomposes lactose into glucose and fructose

27. Referring to peristaltic movements of the small intestine, it is true that:
A. They are mixed movements
B. They occur in any part of the intestine
C. They travel in an anal direction
D. They travel slower in the proximal bowel and faster in the terminal intestine
E. They move the intestinal content from the pylorus towards the ileocecal valve in 3 – 5 hours

28. The vascularization of the intestinal villosity is represented by:
A. An arteriole
B. A venule
C. A network of blood capillaries
D. A network of lymph capillaries
E. A peripheral lymph vessel

29. Select the incorrect statement referring to the activation mechanisms of intestinal absorption:
A. They take up energy provided by the ATP
B. They take place in the sense of the concentration gradient
C. They ensure hexose absorption
D. They ensure aminoacid absorption
E. They ensure hexose the absorption of hydrosoluble vitamins (B_1, B_2, B_6)

30. The enterocyte transport mechanisms of carbohydrate digestion products are:
A. At the apical pole - active Na^+ transport - dependent for fructose
B. At the apical pole – facilitated diffusion for glucose and galactose
C. In the basolateral membrane - active Na^+ transport - dependent for glucose and galactose
D. In the basolateral membrane - facilitated diffusion for fructose
E. In the basolateral membrane - facilitated diffusion for all monosaccharides

31. Select the correct statements regarding the intestinal absorption of lipids:
A. Glycerol and fatty acids are absorbable forms of lipid digestion
B. The lipid digestion products in the micellar structures are passively absorbed at the apical pole of enterocytes
C. Short catena fatty acids travel passively from enterocytes into the blood
D. In the enterocytes, absorbed fluids are incorporated in chylomicrons which further pass into the lymph
E. Glycerol and fatty acids are absorbed actively at the apical pole of enterocytes

32. Which of the following compounds reach the liver through the portal vein?
A. Monosaccharides
B. Tri – and dipeptides
C. Aminoacids
D. Biliary salts
E. Chylomicrons

33. Select the correct statements referring to hydrosoluble vitamins:
A. They are a component part of micelle and are absorbed together with fluids in the proximal bowel
B. They are completed through facilitated transport
C. They are completed through active Na^+ - dependent transport system
D. It takes place in the stomach, in the case of vitamin B_{12}
E. It takes place proximally, in the small bowel

34. Select the correct statements referring to the intestinal electrolyte absorption:
A. Na^+ is actively absorbed
B. Cl^- is passively absorbed
C. Ca^{2+} is actively absorbed in the duodenum, stimulated by vitamin D
D. Fe^{3+} is easier absorbed than Fe^{2+}
E. Fe^{3+} absorption is stimulated by vitamin C

35. In the small bowel, water is absorbed:
A. Actively
B. Through iso osmosis
C. Based on an osmotic gradient resulting from electrolyte absorption
D. Based on an osmotic gradient resulting from nutrient absorption
E. Passively

36. The bacterial flora of the large bowel is responsible for the following processes:
A. Undigested protein fermentation
B. Undigested carbohydrate putrefaction
C. Synthesis of the B-complex vitamins and vitamin K

D. Undigested carbohydrate degradation into irritating acids (lactic, acetic, butyric) and gases (H_2, N_2, CO_2)
E. Undigested protein degradation into aminoacids which are absorbed further on

37. Select the incorrect statement referring to the absorption function of the large bowel:
A. It is the main function of the large bowel
B. It ensures water absorption
C. It ensures electrolyte absorption (especially Na^+, Cl^-)
D. It ensures the absorption of certain vitamins
E. The result of the absorption is the formation of faeces

38. Select the correct statements referring to the water and electrolyte absorption mechanisms in the proximal colon:
A. Water is absorbed through a passive mechanism
B. Na^+ is absorbed through a passive mechanism
C. Na^+ is absorbed through an active mechanism
D. Cl^- passively follows water
E. Cl^- is absorbed in exchange with bicarbonate anion (HCO_3^-)

39. The motor activity of the large bowel consists in:
A. Stationary, segmental contractions, in the proximal colon, facilitating water absorption
B. Stationary, peristaltic contractions, in the proximal colon, facilitating water absorption
C. Very frequent peristaltic movements, with propagation effects in the distal colon
D. Rare and strong „mass contractions" in the descending and sigmoid colon
E. Rare and strong „mass contractions" with propagation effect from the colon towards the rectum

40. Select the correct statements referring to liver cirrhosis:
A. It is an acute disorder of the liver
B. It leads to the destruction of the hepatic cells
C. It is more common in female
D. It is induced by infectious, nutritional and toxic (alcohol, certain medicines, insecticides) underlying causes
E. It can be prevented by treating certain chronic disorders (hepatitis, diabetus mellitus, biliary lithiasis), proper and balanced diet, and the elimination of alcohol and drug abuse

1. The cardiovascular apparatus is represented by:
A. Arteries, the blood reservoirs
B. Heart, the motor force
C. Arteries, blood distribution pipelines
D. Veins, blood distribution pipelines
E. Veins which ensure blood return to the heart

2. The structure of the heart includes:
A. The pericardium, the external enclosing membrane
B. The epicardium, the external layer of the pericardium
C. The epicardium, the internal layer of the pericardium
D. The myocardium, consisting of cardiac striated muscle fibers
E. The endocardium, located under the myocardium

3. The passage of the blood from the atrium to the ventricle, on the same side, takes place:
A. Through a venous system which allows a unidirectional blood flow
B. Through openings having semilunar valves
C. Through openings having atrioventricular valves
D. During the ventricular systole
E. During the ventricular diastole

4. Select the correct statements referring to the heart's valve system:
A. It is represented by two sets of valves
B. It gives an obligatory direction to intracardiac blood flow
C. It makes possible communication between atria and ventricles
D. It makes possible the ejection of blood into arteries
E. It consists of atrioventricular valves (aortic and pulmonary) and semilunar valves (mitral and tricuspid)

5. Blood circulation consists of:
A. Three vascular circuits
B. Two vascular circuits, structurally separated
C. Two vascular circuits, completely separated functionally
D. The small or pulmonary circulation
E. The large or systemic circulation

6. Select the correct statements referring to the pulmonary circulation:
A. It begins in the right ventricle
B. It carries blood containing carbon dioxide to the lung
C. It ends in the left atrium
D. It begins in the left ventricle
E. It represents the functional circulation of the lungs

7. Systemic circulation passes through the following vessels:
A. The aorta
B. The venae cavae, which open in the left atrium
C. The pulmonary artery
D. The superior vena cava
E. The inferior vena cava

8. The external carotid artery vascularizes:
A. The frontal region
B. The brain
C. The neck
D. The temporal and occipital regions
E. The face viscera

9. The coeliac trunk contains the following branches:
A. The hepatic artery
B. The superior mesenteric artery
C. The left gastric artery
D. The splenic artery
E. The renal artery

10. The inferior mesenteric artery, through its branches, vascularizes:
A. The descending colon
B. The ascending colon
C. The sigmoid colon
D. The urinary bladder
E. The superior part of the rectum

11. The vascularization of the genitalia is ensured by:
A. The visceral branches of the internal iliac artery
B. The superior mesenteric artery
C. The external iliac artery
D. The inferior mesenteric artery
E. The parietal branches of the internal iliac artery

12. Select the correct statements referring to the superior vena cava:
A. It is formed by the fusion of the left and right brachiocephalic veins
B. It collects the venous blood from the upper limbs through the subclavicular veins
C. It collects the venous blood from the thorax through the azygos venous system
D. It collects the venous blood from the upper limbs through the jugular veins
E. It opens in the right ventricle

13. The inferior vena cava gathers venous blood from:
A. The upper limbs
B. Kidneys and suprarenal glands
C. The lower limbs
D. Liver
E. Testicles and ovaries

14. The superior mesenteric vein gathers venous blood from:
A. The descending colon
B. The appendix
C. The sigmoid colon
D. The ascending colon
E. The transverse colon, right side

15. Select the correct statements referring to the lymphatic ganglions:
A. They form erythrocytes and leucocytes
B. They receive more afferent lymph vessels
C. They produce lymphocytes and form immunoglobulins
D. They send out afferent lymph vessels
E. They consist of elastic connective tissue

16. The thoracic canal collects lymph from:
A. The left side of the head and neck
B. The left side of the thorax
C. The lower limbs
D. The right upper limb
E. The right side of the thorax

17. The spleen is an organ which:
A. Belongs to the circulatory system
B. Destroys old red blood cells
C. Is involved in iron metabolism
D. Deposits 600 ml of blood
E. Send the blood deposit into circulation, in case of a haemorrhage or physical effort

18. Which of the following statements referring to the blood are correct?
A. It represents 8% of the body mass
B. It contains figurative elements in a ratio of 55%
C. It contains figurative elements in a ratio of 45%
D. It contains plasma in a ratio of 45%
E. It contains plasma in a ratio of 55%

19. The chemical composition of plasma includes:
A. Water – 90%
B. Dry residue – 10%
C. Proteins: albumins, globulins and fibrinogen
D. White blood cells
E. Cations

20. Select the correct statements referring to volemia:
A. It is also called total blood volume
B. It represents 8% of the body's weight
C. It varies according to the quantity of water in the body
D. It represents 1% of the body's weight
E. It decreases in febrile conditions and during vomiting

21. According to the rule of agglutinin exclusion with the homologous agglutinogen, individuals may possess:
A. A- agglutinogen on the red blood cells and α agglutinins in the plasma
B. A-agglutinins on the red blood cells and β agglutinogen in the plasma
C. B- agglutinogen on the red blood cells and β agglutinins in the plasma
D. B- agglutinogen on the red blood cells and α agglutinins in the plasma
E. B-agglutinin on the red blood cells and β agglutinogen in the plasma

22. Select the correct statement regarding transfusion:
A. It is a frequent method of medical treatment
B. It consists in the administration of fresh blood exclusively
C. It consists in the administration of preserved blood exclusively
D. It has to take into account the presence of agglutinogens in the donor's plasma and of agglutinins in the recipient's red-blood-cell membrane
E. It has to be done obligatorily within the same blood group, even for quantities less than 500 ml

23. Select the correct statements referring to the blood group 0 I:
A. It has A and B agglutinogens on the red blood cells
B. It has α and β agglutinins in the plasma
C. It can receive blood from the group A II
D. It can donate to the group A II

E. It can donate to the group B III

24. Knowing the blood groups AB0 is important for:
A. Establishing transfusional compatibility
B. Determining paternity
C. Identifying incompatible pregnancies
D. Identifying the risk of hemolytic disease of the newborn
E. Identifying possessors of D antigen on the red blood cells

25. Select the correct statements referring to the Rh system:
A. It is defined by the presence of the Rh antigen in the blood of 15% of humans
B. It is defined by the presence of the Rh antigen in the blood of the Rhesus monkey and in 85% of humans
C. The system contains anti-Rh antibodies (agglutinins) normally present in 85% of humans
D. The system contains anti-Rh antibodies (agglutinins) normally present in 15% of humans
E. Anti-Rh antibodies in women's blood with Rh- with a foetus with Rh+ may induce early abortion

26. Select the correct statements referring to neutrophils:
A. They have granules which do not fix any type of stain
B. They are involved in the unspecific defense through the phagocytosis of pathogenic agents (bacteria)
C. They are involved in parasite phagocytosis
D. They secrete heparin
E. They are involved in cell-residue phagocytosis

27. Select the correct statements referring to eosinophils:
A. They cross the capillary wall through diapedesis
B. They represent the first line of antimicrobial defense
C. They have the greatest capacity of phagocytosis, their cytoplasm containing a large number of lysosomes rich in hydrolytic enzymes
D. They destroy parasites only through phagocytosis
E. They destroy parasites by releasing hydrolytic enzymes from the cytoplasmic granules, which act on the parasite membrane

28. Select the correct statements referring to phagocytosis:
A. It is the most important process of specific defense
B. In consists in the capture and intracellular digestion of pathogen agents
C. It is preceded by the diapedesis of phagocytic cells in the affected tissue
D. It is a function of macrophages represented by neutrophile leucocytes
E. It is a function of macrophages which are derived from erythrocytes

29. Select the correct statements referring to antibodies:
A. They are secreted by the B lymphocytes turned into plasmocytes in the lymphoid organs
B. They are secreted by the T lymphocytes in the lymphoid organs
C. They are released into the blood and from here they get into the lymph
D. They are characterized by specificity
E. They neutralize any antigen

30. Select the correct statements referring to T lymphocytes:
A. They originate in the lymph ganglions
B. When released into the blood stream they reach the thymus where they are instructed as to antigen recognition
C. In contact with the antigen they produce receptor proteins which help them to recognize the antigen
D. They attach to the cell membrane which carries the antigen and destroy the latter by releasing certain substances
E. They originate in the spleen

31. Select the correct statements referring to natural innate immunity:
A. It can be active or passive
B. It is common to all individuals
C. It is hereditary
D. It lasts the entire life
E. It has a long duration

32. Select the correct statements referring to the role of thrombocytes:
A. They stop bleeding from large-diameter, damaged vessels
B. They participate in hemostasis by forming the white platelet plug
C. They participate in the formation of the fibrin clot
D. They produce thrombocytic factors which participate in blood coagulation
E. They produce thrombocytic factors which participate in fibrinolysis

33. The phases of hemostasis are:
A. The vascular platelet phase which lasts 4 - 8 minutes
B. Primary hemostasis which lasts 2- 4 minutes
C. The plasma coagulation phase (coagulation) which lasts 2- 4 minutes
D. The thrombodynamic phase which lasts 2- 4 hours
E. The thrombodynamic phase which includes clot retraction and fibrinolysis

34. The insoluble fibrin clot formation takes place:
A. Under the effect of plasmatic coagulation factors
B. Under the effect of thrombocytic coagulation factors
C. Under the effect of tissue coagulation factors
D. In 2 phases

E. In 3 phases

35. The formation of the fibrin clot is followed by:
A. Serum expulsion (plasma with fibrinogen and prothrombin)
B. Clot retraction
C. Fibrinolysis
D. Clot decomposition under the action of certain lipolytic enzymes
E. Clot removal and recommencement of the blood flow in the damaged vessel

36. Select the correct statements referring to fibrinolysis:
A. It is an enzymatic process
B. It consists in transforming the plasminogen in the clot into plasmine
C. It consists in the depolymerization of fibrin under the action of thromboplastin
D. It ensures the recommencement of the blood flow in the damaged vessel
E. It consists in the depolymerization of fibrin under the action of thrombin

37. The following characteristics are common both to the cardiac and the skeletal muscles:
A. Excitability
B. Rhythmicity
C. Contractility
D. Automatism
E. Secretory activity

38. The sinus rhythm corresponds to:
A. The normal heart rate
B. The cardiac activity conducted by the sinuatrial node
C. The cardiac activity conducted by the atrioventricular node
D. A discharge frequency of 70-80 beats/minute
E. The activity of the main cardiac automatism center

39. Select the correct statements referring to the contractility of the myocardium:
A. It is the property of the myocardium to relax
B. It is initiated and maintained by the action potentials generated in the sinuatrial node
C. It is energetically maintained by the recovery of ATP during relaxation (diastole)
D. The force of the contractions is weaker in ventricles versus atria due to the fact that the walls are thicker
E. The general contraction force increases in direct proportion with the elongation of myocardial fibers during diastole

40. Select the correct statements referring to the atrial systole:
A. It lasts 0.5 seconds
B. It induces an increased pressure in the atria
C. It induces the contraction of muscle fibers around the openings where veins open into the atria, which prevent blood regurgitation

D. It completes ventricular filling
E. It completes atrial filling

41. It is true that heart rate:
A. Has a normal value of 70-80 beats/minutes when resting
B. Is under nervous control
C. It increases through parasympathetic stimulation
D. It decreases through sympathetic stimulation
E. It decreases through vagal stimulation

42. Cardiac output represents:
A. The amount of blood pumped by each ventricle during each systole
B. The product between the stroke volume and the heart rate
C. A parameter which determines the heart's pump activity
D. Approximately 70 ml/minute when resting
E. A parameter which increases 30 times during intense physical effort

43. Palpating the arterial pulse relays information about the:
A. Heart noises
B. Apex beat
C. Systolic volume
D. Heart rate
E. Heart rhythm

44. Arterial blood flow is:
A. Determined by the rhythmic activity of the heart
B. Influenced by the elasticity of large arteries
C. Influenced by blood viscosity
D. Influenced by the variations of the vascular caliber of small arteries and arterioles
E. Influenced by the elasticity of small arteries and arterioles

45. Arterial blood pressure varies directly proportional with:
A. Cardiac output
B. Peripheral resistance
C. Blood volume
D. Elasticity
E. Blood speed

46. Select the correct statements referring to the regulation of arterial blood pressure:
A. It is achieved by nervous and humoral mechanisms
B. It maintains diastolic blood pressure within normal limits (120 -140 mm Hg)
C. It maintains systolic blood pressure within normal limits (70 – 80 mm Hg)
D. It is achieved by the renin-angiotensin-aldosterone system
E. It is achieved by the bulbar autonomic centers through vagal and accessory nerves

47. The decrease of arterial blood pressure is induced by:
A. Decreased arterial elasticity
B. Decreased volemia
C. Decreased peripheral resistance through vasoconstriction
D. Haemorrhages
E. Massive dehydration

48. Systemic hypertension may affect the:
A. Kidneys
B. Heart
C. Eyes
D. Blood vessels
E. Lungs

49. Select the correct statements referring to blood capillaries:
A. Capillary blood has a pulsatile flow
B. Capillaries are the site of exchanges of nutritive, plastic and respiratory substances between blood and cells
C. They make the connection between arteries and veins
D. They contain 5% din of the circulating blood
E. In a tissue, all blood capillaries are open at the same time

50. Referring to the exchanges in the capillary wall, it is true that:
A. They take place by diffusion
B. They take place by filtration
C. They ensure water transport only from the capillaries to the cells
D. They ensure water transport only from the cells to the capillaries
E. They ensure water transport in both senses in capillaries and cells

51. Select the properties of veins:
A. Elasticity
B. Extensibility
C. Distensibility
D. Contractility
E. Automatism

52. Circulation and venous blood return to the heart is facilitated by a series of factors, such as:
A. Cardiac pump
B. Thoracic aspiration during expiration
C. Abdominal pressure during expiration
D. Gravity in the superior vena cava system
E. The valve system of veins

53. Gravity facilitates blood flow in the following veins:
A. Cerebral
B. External jugular
C. Veins of the lower limbs
D. Splenic
E. Superior mesenteric

54. Select the correct statements referring to the muscle pump:
A. It is the main cause for the blood return to the heart
B. It empties the blood from superficial veins during muscle contractions
C. It empties the blood from deep veins during muscle contractions
D. It aspires the blood from the superficial veins into the deep veins in the resting period between two contractions
E. It aspires the blood from the deep veins into the superficial veins in the resting period between two contractions

55. Due to the factors facilitating venous return, blood flow to the heart increases during:
A. Inspiration
B. Expiration
C. Walking
D. Physical effort
E. Standing up (for lower limb veins)

56. Select the incorrect statements referring to the composition of the lymph:
A. It has a different composition from that of the drained territory
B. It has the same composition regardless the drained territory
C. Lymph coming from the intestine is rich in proteins
D. Lymph coming from the liver is rich in lipids
E. Lymph coming from the endocrine glands contains hormones

57. The roles of the lymph are:
A. Drainage of the interstitial fluid, avoiding its retention in the tissues and the development of oedema
B. Immune, by carrying B and T lymphocytes towards lymph ganglions
C. Hormone transportation
D. Transportation of chylomicrons resulting from intestinal absorption
E. Transportation o lipoproteins synthetized in the liver

58. The mechanisms which ensure the regulation of the cardiovascular activity are:
A. Exclusively nervous
B. Exclusively humoral
C. Nervous and humoral

D. Systemic and local
E. Based on negative feedback

59. Vasodilating factors involved in the local regulation of the blood flow are activated due to:

A. Local decrease of CO_2 concentration
B. Local decrease of O_2 concentration
C. Intensification of tissue metabolism
D. Tissue acidosis
E. Increase of local temperature

60. Anemias have the following clinical symptoms:

A. Heavy pallor of skin and mucosae
B. Dizziness
C. Low blood pressure
D. Dyspnea
E. High blood pressure

1. Select the correct statements referring to the respiratory pathways:
A. They are divided into two types: extrapulmonary and intrapulmonary pathways
B. Extrapulmonary pathways are represented by the tympanic cavity, pharynx, larynx, trachea and the main bronchi
C. The intrapulmonary pathways are represented by the bronchial tree
D. The extrapulmonary pathways are represented by the bronchial tree, which arises from the ramification of the trachea in the lungs
E. They form the respiratory system, together with the lungs

2. Select the correct statements referring to the pharynx:
A. It is a parenchymatous organ
B. It communicates with the larynx through the glottis
C. It represents the place where the digestive tract crosses the respiratory tract
D. It communicates posteriorly with the nasal cavity through the choanae
E. It belongs to the intrapulmonary pathways

3. Select the correct statements referring to the lobar bronchi:
A. They result from the division of the main bronchi
B. They are divided into segmental bronchi
C. There are two of them in the right lung
D. There are three of them in the left lung
E. They belong to the extrapulmonary pathways

4. Select the correct statements referring to the lungs:
A. They are situated in the mediastinum
B. They have three faces: external, internal and basal
C. On their external face they have fissures which delimit the lobes – three for the left lung and two for the right lung
D. They are covered with a serosa called pleura, consisting of two layers, visceral and parietal
E. They are conical, with the basis lying on the diaphragm

5. Select the correct statement referring to the alveolo capillary membrane:
A. It is also called respiratory membrane
B. It is the site of gas exchanges between the trachea and blood
C. It provides a respiratory exchange surface of approximately 100 m^2
D. It consists of the alveolar wall and the capillary wall
E. It is also called the glomerular membrane

6. Select the correct statements referring to the pulmonary alveoli:
A. There are approximately 20 alveoli for each lung
B. They have extremely thin walls allowing gas exchanges
C. They have thick walls allowing gas exchanges
D. They open into the alveolar canals
E. They are surrounded by a rich network of blood capillaries

7. Select the correct statements referring to pneumonia:
A. It represents the acute inflammation of the extrapulmonary respiratory pathways
B. It represents the acute inflammation of the pulmonary alveoli
C. It always affects both lungs
D. It affects the pulmonary lobules which become inoperative and are filled with mucus and pus
E. It can affect a part of the lung or the entire lung

8. From a functional point of view, respiration includes:
A. Pulmonary ventilation
B. O_2 and CO_2 diffusion between pulmonary alveoli and blood
C. O_2 transport via blood and body fluids from cells to the lungs
D. CO_2 transport via blood and body fluids from lungs to the cells
E. Ventilation regulation

9. Pulmonary ventilation consists of:
A. Introducing air into the pulmonary alveoli (inspiration)
B. Eliminating air by travelling a reverse trajectory (expiration)
C. Changes in a reverse sense of the volumes of the thoracic cavity and of the lungs
D. The distension of the lungs during inspiration
E. The retraction of the lungs during expiration

10. Select the correct statements regarding basal breathing (resting):
A. Inspiration is a passive process
B. Inspiration is an active process
C. Expiration is a passive process
D. Expiration is an active process
E. Both inspiration and expiration are passive processes

11. Select the correct statements referring to resting inspiration:
A. It is an active process induced by the increase of the two diameters of the rib cage
B. The contraction of the external intercostal muscles determines the rise and horizontalization of the ribs
C. Due to the surface of the diaphragm (approx. 250 cm^2), its descent by 1.5 cm induces a 75% increase in the volume of the thoracic cage

D. The expansion of the lungs is facilitated by the adherence to the rib cage through the pleura
E. Lungs follow the thoracic expansion and actively distend

12. Select the accessory respiratory muscles which are involved in the forced inspiration:

A. The sternocleidomastoideus muscle
B. The internal intercostal muscles
C. The trapezius muscles
D. The back muscles
E. The diaphragm muscle

13. Select the correct statements referring to the diaphragm muscle:

A. It is a smooth muscle which completely separates the thoracic cavity from the abdominal one
B. It transforms the thoracic cavity into a pneumatic cavity
C. It has different positions during the various phases of the respiratory cycle
D. In inspiration, it arches towards the abdominal cavity
E. During expiration, it becomes flat

14. Select the correct statements referring to resting breathing:

A. Resting breathing rate is 60-80 breaths/minute
B. Inspiration and expiration succeed each other 16-18 times/minute
C. Breathing rate and amplitude vary according to the body's O_2 demands and the CO_2 it releases
D. Timewise, inspiration represents two thirds of a resting breathing
E. Timewise, expiration represents one third of a resting breathing

15. Select the correct statements referring to the tidal volume:

A. It represents the air volume that enters the lungs during normal breathing
B. It represents the air volume that is expelled from the lungs during normal breathing
C. It represents the air volume that reaches the pulmonary alveoli
D. It is approximately 500 ml in a young adult
E. It is 1500 ml in a young adult

16. Select the correct statements referring to the significance of volumes and pulmonary capacity:

A. Inspiratory capacity = the volume of air that can be breathed in through a maximum inspiration that begins at the end of a resting inspiration
B. Expiratory reserve volume = the maximal air volume that can be exhaled from the lungs through forced expiration after a resting inspiration
C. Functional residual capacity = the maximal air volume that remains in the lungs after a period of resting expiration
D. Vital capacity = the maximal air volume that can be exhaled from the lungs through forced expiration after maximum inspiration

E. Total lung capacity = the volume of air contained by the lungs at the end of maximum inspiration

17. If we know that the tidal volume = 500 ml, the inspiratory reserve volume = 1500 ml, the expiratory reserve volume = 1300 ml, the residual volume = 1500 ml, then it is true that:
A. Inspiratory capacity = 2000 ml
B. Functional residual capacity= 2800 ml
C. Vital capacity = 3500 ml
D. Total lung capacity= 4800 ml
E. Total lung capacity = 3500 ml

18. Select the correct statements referring to the respiratory rate:
A. It is 16 breaths/minute in women
B. It is 18 breaths/minute in men
C. It depends on the O_2 demand
D. It depends on the quantity of released CO_2
E. It is graphically recorded with a pneumograph

19. The factors determining gas diffusion through the alveolo capillary (respiratory) membrane are:
A. The partial pressure gradient of gases on both sides of the alveolo capillary membrane
B. The diffusion surface
C. The thickness of the respiratory membrane which, being very thin, prevents the diffusion process
D. The diffusion coefficient of respiratory gases through the respiratory membrane
E. The diffusion coefficient of water through the respiratory membrane

20. CO_2 diffuses through the alveolo capillary membrane:
A. From a partially higher pressure in the alveolar air (46 mm Hg) to a lower pressure at the arterial end of the pulmonary capillary (40 mm Hg)
B. From a partially higher pressure at the arterial end of the capillary blood (46 mm Hg) to a lower pressure in the alveolar air (40 mm Hg)
C. From a partially higher pressure at the venous end of the capillary blood (46 mm Hg) to a lower pressure in the alveolar air (40 mm Hg)
D. Based on a lower pressure gradient than that of O_2, but compensated by the solubility of CO_2 which is 25 times greater than that of O_2
E. With a diffusion speed 20 times greater than that of O_2

21. The diffusion process of respiratory gases through the respiratory membrane is facilitated by:
A. The wide diffusion surface, of approximately 80 m^2 in adults
B. The thinness of the respiratory membrane
C. The high diffusion coefficient of CO_2

D. The high diffusion coefficient of O_2
E. The higher pressure gradient of CO_2 than that of O_2

22. Select the correct statements referring to O_2 transport combined with haemoglobin:
A. It represents the main method of blood O_2 transport
B. Each haemoglobin molecule can combine with 8 molecules of O_2
C. The formation and dissociation of oxyhaemoglobin depends on blood temperature and the pH-ul of the internal environment
D. At tissue level, there are factors that facilitate haemoglobin charge with O_2
E. At the level of pulmonary alveoli, there are factors that facilitate O_2 discharge from HbO_2

23. The combination of O_2 with haemoglobin is:
A. An oxidation reaction
B. An oxygenation reaction
C. An oxyreductive chemical reaction
D. Facilitated by the presence of Fe^{2+}
E. Facilitated by carbonic anhydrase

24. The transport forms of blood O_2 are:
A. Carbohaemoglobin
B. 1.5% physically dissolved in plasma
C. 98.5% as oxyhaemoglobin
D. In the form of reversible combination with the iron ions in the structure of haemoglobin
E. In the form of reversible combination with the terminal NH_2 groups of haemoglobin

25. Blood transport of CO_2 is completed:
A. In 3 ways
B. In a free form (small proportion)
C. In the form of plasma K bicarbonate ($KHCO_3$) (the highest proportion)
D. In the form of Na bicarbonate ($NaHCO_3$) in erythrocytes (the highest proportion)
E. In the form of carbohaemoglobin (the highest proportion)

26. Which of the following receptors are involved in the automatic breathing control?
A. Pulmonary baroreceptors, stimulated by the capillary blood pressure
B. Pulmonary baroreceptors, sensory terminations of the glossopharyngeal nerve (X)
C. Aortic chemoreceptors, sensory terminations of the vagus nerve (X)
D. Carotid chemoreceptors, sensory terminations of the glossopharyngeal nerve (IX)
E. Bulbar chemoreceptors, pH-receptors which depend on PCO_2

27. Select the correct statements referring to primary respiratory receptors:
A. They are located in the bulb
B. They are located in the mesencephalon
C. They do not have their proper automatism
D. They pass alternatively between the phases of activity and resting

E. They are controlled by the secondary respiratory centers

28. The automatic activity of the respiratory centers is influenced by:
A. The O_2 concentration in the alveolar air
B. The CO_2 concentration in the alveolar air
C. The degree of distension of alveolar walls
D. The impulses received from cutaneous receptors
E. The impulses received from proprioceptors

29. The efferent pathway in the automatic breathing control is represented by:
A. Sensory fibers of the vagus nerve
B. Motor fibers of the vagus nerve
C. Motor fibers of the glossopharyngeal nerve
D. Somatic motor fibers distributed to the intercostal muscles
E. Autonomic motor fibers distributed to the diaphragm muscle

30. Select the correct statements referring to the voluntary control of breathing:
A. It is achieved at cortical level
B. It is achieved by acting on the autonomic motor neurons which innervate breathing muscles
C. It is achieved by acting on bulbopontine centers
D. It can cause breathing rhythm alterations
E. It can stop breathing (apnoea)

Chapter IX ▸ EXCRETION

1. The extrarenal urinary tract is represented by:
A. Ureters
B. The renal pelvis
C. The urinary bladder
D. Major calyces
E. Ferrein's pyramid

2. Select the correct statements referring to the cortical area of the kidney:
A. It contains the renal glomeruli
B. It is represented by the major calyces
C. It contains the blood vessels
D. It is located at the periphery of the kidney
E. It is located in the central area of the kidney

3. Select the correct statements referring to the nephron:
A. It is the anatomical unit of the urinary bladder
B. It consists of the major calyces and the renal pelvis
C. It is the anatomical unit of the kidney
D. It is the functional unit of the kidney
E. It consists of the renal corpuscle and a tubular system

4. Select the correct answer referring to the renal corpuscle:
A. It is located in the renal pelvis
B. It consists of Bowman's capsule and the renal glomerulus
C. It consists of the major and minor calyces
D. It is continued with the distal convoluted tube
E. It has a vascular and an apical pole

5. The tubular system of the nephron contains:
A. The proximal convoluted tube
B. The proximal convoluted tube, in the continuation of Henle's loop
C. Henle's loop, a "U"- shaped part
D. The distal convoluted tube, in the continuation of Henle's loop
E. The distal convoluted tube, in the continuation of Bowman's capsule

6. Select the correct statements referring to the collector tubes:
A. They are components of Malpighi's pyramid
B. They receive urine from several nephrons
C. The distal convoluted tubes open into them
D. The proximal convoluted tubes open into them
E. They are "U"- shaped

7. The juxtamedullary nephrons contain:
A. The glomerulus located in the cortical area
B. The glomerulus located in the medullary area
C. The short Henle's loop
D. The glomerulus located at the junction of the renal cortex and renal medulla
E. The long Henle's loop

8. Select the incorrect statement referring to the renal juxtaglomerular apparatus:
A. Each nephron has a renal juxtaglomerular apparatus
B. In the uriniferous tubule, it contains modified cells which form the macula densa
C. In the arterioles, it contains modified muscle cells which contain granules with inactive renin
D. It is involved in the glomerular-tubular balance
E. It is located at the contact between the proximal convoluted tube and the angle formed by the afferent and efferent arteriole

9. The main role of the kidney is:
A. To produce and eliminate urine
B. To regulate the acid-base balance of body fluids
C. Renin secretion
D. To regulate blood pressure
E. To secrete angiotensin II

10. Urine production is the result of three processes. What are these?
A. Glomerular filtration
B. Glomerular reabsorption
C. Glomerular secretion
D. Tubular reabsorption
E. Tubular secretion

11. Select the correct statements referring to the filtrating glomerular membrane:
A. It behaves like a sieve which allows the passage of plasma proteins from blood to Bowman's capsule
B. It does not allow the passage of large-molecule substances, such as electrolytes
C. It has a permeability 100 – 400 times smaller than normal capillaries
D. It contains the endothelium of glomerular capillaries
E. It contains the endothelium of Bowman's capsule

12. Select the correct statements referring to renin:
A. It is an enzyme secreted by the renal juxtaglomerular apparatus
B. It transforms angiotensinogen into angiotensin I
C. It transforms angiotensin I into angiotensin II
D. It stimulates antidiuretic hormone release
E. It induces vasoconstriction and increases blood pressure

13. Select the correct statements referring to passive renal tubular reabsorption:
A. It is carried out against the physical laws of diffusion and osmosis
B. It ensures water reabsorption against the osmotic gradient
C. It ensures urea reabsorption against the chemical gradient
D. It ensures the reabsorption of a part of Na^+ and Cl^- in the sense of an electrical gradient
E. It ensures the reabsorption of a part of Na^+ and Cl^- in the sense of a chemical gradient

14. The following substances are actively absorbed in the uriniferous tubules:
A. Aminoacids
B. Some vitamins (B_{12}, C)
C. Water
D. Urea
E. Na^+, K^+, HCO_3^-

15. The following substances are absorbed in 100% in the proximal convolute tube:
A. Water
B. Glucose
C. Aminoacids
D. Na^+
E. Ca^{2+}

16. In the proximal convolute tube, water is reabsorbed:
A. Osmotically from the interstitium into the tube, following the reabsorption of salts
B. Osmotically from the interstitium into the tube, following the reabsorption of glucose
C. Osmotically from the tube into the interstitium, following the reabsorption of salts
D. Osmotically from the tube into the interstitium, following the reabsorption of glucose
E. Chemically from the tube into the interstitium, following the reabsorption of salts

17. In the proximal convolute tube, water is reabsorbed:
A. Optionally
B. Depending on the action of the antidiuretic hormone (ADH)
C. Obligatorily
D. Independent from the action of ADH
E. Passively

18. The antidiuretic hormone controls water reabsorption in:
A. The proximal convoluted tube
B. Henle's loop
C. The distal convoluted tube
D. The collector tube
E. All the segments of the uriniferous tubes

19. Select the correct statements referring to Na^+ reabsorption in the uriniferous tube:
A. It is achieved by an active mechanism all along the uriniferous tube
B. It is coupled with glucose and aminoacid reabsorption in the distal convoluted tube
C. Most of the Na^+ quantity from primary urine is reabsorbed in the proximal convoluted tube
D. In the distal convoluted tube reabsorption is independent from hormonal control
E. In the distal convoluted tube reabsorption is dependent on aldosterone

20. It is true that in the uriniferous tube, K^+:
A. Is mostly reabsorbed in the proximal convoluted tube
B. It is reabsorbed together with glucose and aminoacids
C. Is reabsorbed in the proximal convoluted tube under hormonal control
D. Is reabsorbed in the distal convoluted tube under the action of aldosterone
E. It is secreted in the distal convoluted tube under the action of aldosterone

21. Select the correct statements referring to the effect of parathormone on the reabsorption in the uriniferous tubes:
A. It increases Ca^{2+} reabsorption
B. It decreases Ca^{2+} reabsorption
C. It increases phosphate reabsorption
D. It decreases phosphate reabsorption
E. It increases optional water reabsorption

22. Select the correct statements referring to tubular secretion:
A. It carries useful substances from the glomerular capillaries to the lumen of the uriniferous tube
B. It carries useful substances from the peritubular capillaries to the lumen of the uriniferous tube
C. It carries toxic substances from the peritubular capillaries to the lumen of the uriniferous tube
D. It is achieved by active mechanism
E. It is achieved by passive mechanism

23. Select the correct statements referring to tubular secretion:
A. It is the main method of cleansing plasma from unusable nitrogen catabolites
B. It supports the function of eliminating acid, toxic or excessive substances and certain medicines
C. Through secretion, kidneys help regulate Na^+ şi K^+ plasma concentration
D. Tubular secretion releases H^+, ammonia, uric acid and creatinine
E. It represents a method of auxiliary excretion of H^+, without extra plasma acidification

24. Which of the following statements referring to proton secretion in the uriniferous tube is incorrect?
A. It is continuous
B. It is achieved by active transport
C. It is present in the entire uriniferous tube
D. It is the greatest in Henle's loop
E. It is important for maintaining H^+ plasma concentration within physiological limits

25. Which of the following statements referring to urine formation are correct?
A. It is produced through the processes of filtration, reabsorption and secretion
B. The glomeruli filtrate figurative elements, proteins and lipids
C. Water, urea and chlorine are reabsorbed in the proximal tube
D. Penicillin, K^+ şi NH_4^+ are secreted in the distal tube
E. Filtered blood leaves the kidney through the renal vein

26. Final urine does not contain:
A. Na^+
B. K^+
C. Proteins
D. Cl^-
E. Glucose

27. Select the correct statements referring to the urine accumulated in the urinary bladder:
A. It can backflow into the ureters
B. It flows through the urethra
C. It triggers the excitation of pressure receptors in the walls of the urinary bladder
D. It triggers involuntary micturition when the volume of accumulated urine exceeds 600 ml
E. Normally, it triggers in humans 4-6 micturitions in 24 hours, less frequent at night

28. It is true that the sympathetic innervation of the urinary bladder:
A. Is represented by the pelvic nerves
B. Is represented by the hypogastric nerves
C. Is represented by the pudendal nerves
D. Induces the relaxation of the detrusor muscle of the urinary bladder
E. Induces the relaxation of the internal bladder sphincter

29. Select the correct statements referring to micturition:
A. It is the process of emptying the urinary bladder when it is full
B. It can be triggered by a nervous reflex called „micturition" reflex
C. It is exclusively controlled by the cortical centers
D. It is stimulated or inhibited by the superior nerve centers of the cerebral trunks
E. It is stimulated or inhibited by the cerebral cortex

30. Which of the following symptoms is NOT a micturition disorder:
A. The involuntary loss of bladder control in condition of stress and emotional distress
B. The absence of cortical control in children under 1 year old
C. The absence of cortical control in persons with spinal cord injury
D. Irritative micturition, persistent urge in cystitis
E. Burning sensation and discomfort during urination, in cystitis

1. Select the correct statements referring to the processes of anabolism and catabolism?
A. The body should obtain energy from external substances (catabolism)
B. The body should build its own structures and ensure the completion of its biological functions (anabolism)
C. Anabolism and catabolism condition each other (they are interdependent)
D. Anabolism and catabolism do not condition each other (they are independent)
E. Metabolic processes involve the action of enzymes as biocatalyzers

2. Acetyl-CoA is formed by:
A. Aerobic catalyzation of glucose
B. Anaerobic catalyzation of glucose
C. Beta oxidation of fatty acids
D. Beta esterification of fatty acids
E. Glycogenogenesis in mitochondria

3. The following statements are correct referring to the intermediate metabolism:
A. Carbohydrates can transform into lipids
B. Lipids can transform into carbohydrates
C. Proteins can transform into carbohydrates
D. Carbohydrates can integrally generate proteins
E. Lipids can integrally generate proteins

4. Select the correct statements referring to the energetic role of carbohydrates in the body:
A. They represent the favourite fuel of all cells
B. They are totally oxidized until final non-toxic products, CO_2 and H_2O, which can be eliminated from the body
C. They are totally oxidized until final non-toxic products, CO and H_2O_2, which can be eliminated from the body
D. The complete oxidation of 1 kg glucose yields 4.1 kcal
E. The complete oxidation glucose yields CO_2 and biogenic amines

5. Select the correct statements referring to the transformation of glucose into glycogen:
A. It is called glycogenogenesis
B. It takes place only in the liver
C. It takes place only in the muscles
D. It is called gluconeogenesis
E. It represents the form in which glucose is deposited

6. A decrease of blood glucose stimulates the following processes in the liver:
A. Hydrolysis of hepatic and muscle glycogen (glycogenogenesis)
B. Glycogenolysis (hydrolysis of hepatic glycogen)
C. Gluconeogenesis (glucose synthesis from non-carbohydrate compounds)
D. Lipogenesis (transformation of glucose into triglycerides)
E. Glycolysis (synthesis of glucose in tissues)

7. It is true that, in the body, glucose:
A. Is transformed into ammonia, in the liver
B. Is catabolyzed through glycolysis in all the tissues, mainly in the erythrocytic and nervous ones
C. Is transformed into saccharose and forms hepatic and muscular deposits
D. In excess, is transformed in fatty acids which will be deposited in the adipocytes as esterified triglycerides (lipogenesis)
E. Is transformed into glycogen through glycogenogenesis

8. Which of the following statements referring to the anaerobic glycolysis are correct?
A. It includes the transformation of a glucose molecule into two molecules of pyruvic acid
B. It is completed in the absence of O_2
C. It takes place in the mitochondrion
D. It involves twelve steps of successive chemical reactions
E. Each step of the glycolysis is catalyzed by a specific enzyme

9. Select the correct statements referring to glucose oxidation?
A. The efficiency of energy transfer through the catabolism of a mol of glucose in the presence of O_2 is 3%, the rest being transformed into heat
B. The efficiency of energy transfer through the catabolism of a mol of glucose in the absence of O_2 is 66%, the rest being transformed into heat
C. In the absence of adenosindiphosphate (ADP), the oxydative phosphorilation process ceases
D. The lactic acid resulting in muscle fibers, in the absence of O_2, diffuses into the blood
E. After returning to aerobiosis, the pyruvic acid does not transform into lactic acid any more, and the glycolytic process ceases

10. Which of the following non-carbohydrate compounds are precursors of hepatic gluconeogenesis?
A. Lactic acid
B. Glucogenic amino acids (resulting from protein catabolism)
C. Ketone bodies
D. Cholesterol
E. Glycerol

11. Select the correct statements referring to blood sugar decrease:

A. It can be induced by an insufficient glucose intake
B. It can occur as a consequence of glucose excess
C. It determines the transformation into glucose of lipid catabolism products (glycerol)
D. It determines the transformation into proteins of glucose dissociation products
E. It can be induced by an excessive carbohydrate intake

12. It is true that blood sugar (the concentration of glucose in the blood):
A. Its normal values range between 110-180 mg%
B. Is maintained within relatively stable values, between 70-110 mg%
C. Is regulated by complex neuroendocrine mechanisms
D. Reflects the balance between glycogenolysis, glycogenogenesis, glycolysis and gluconeogenesis
E. Is increased by insulin and decreased by glucagon

13. Select the correct statements referring to the autonomic and endocrine mechanism of blood sugar regulation:
A. It acts predominantly on the kidneys
B. It acts predominantly on the liver
C. It acts predominantly on the extrahepatic tissues
D. It properly modifies carbohydrate metabolism in that it increases blood sugar
E. It properly modifies carbohydrate metabolism in that it lowers blood sugar

14. Which of the following hormones increase blood sugar by stimulating glycogenolysis?
A. Glucagon (hepatic glycogenolysis)
B. Testosterone (muscle glycogenolysis)
C. Insulin (hepatic and muscle glycogenolysis)
D. Aldosterone (hepatic glycogenolysis)
E. Adrenaline (muscleglycogenolysis)

15. It is true that, from an energetic point of view, lipids:
A. Represent the preferred energy source of all the cells in the body
B. Represent a major energy source which they release by oxidation reactions
C. Generate, by oxidation, a higher number of calories than carbohydrates
D. Generate, by oxidation, a lower number of calories than proteins
E. Represent a source of energy accessed by the body in conditions of hunger or prolonged and heavy physical effort

16. Select the correct statements referring to lipolysis:
A. It takes place under the action of tissue lipase
B. It represents the degradation of triglycerides into amino acids and glycerol
C. It takes place gradually with intermediate formation of di- and monoacilglycerols
D. It is stimulated by insulin
E. It represents lipid synthesis when carbohydrate intake is excessive

17. Lipid catabolism includes:
A. The extrahepatic oxidation of ketone bodies
B. The hepatic synthesis of ketone bodies, starting from the fatty acids
C. The hepatic oxidation of ketone bodies
D. β – oxidation of fatty acids in the mitochondria
E. The hydrolysis of glycerine in the hepatic, adipose and muscle cells

18. Select the correct statements referring to fatty acids:
A. They are the result of the action of a lipoprotein lipase on chylomicrons
B. The catabolism of fatty acids takes place in all the cells, except neurons and erythrocytes (glucose-dependent)
C. The greatest part of fatty acids remain in the cytoplasm, as free plasma fatty acids
D. At cellular level, fatty acids can release energy through mitochondrial β-oxidation
E. The catabolism of fatty acids takes place only in the neurons and erythrocytes

19. Select the correct statements referring to cholesterol:
A. It is called endogenous when it comes from vegetal foods
B. It is called exogenous when it comes from animal source foods
C. It is released by the liver as triglycerides
D. It is used by the adrenal gland for the synthesis of corticosteroid hormones
E. It is used by gonads for the synthesis of sexual hormones

20. Select the correct statements referring to ketone bodies:
A. They are represented by acetone, palmitic acid and beta-hydroxybutyric acid
B. They are represented by acetone, acetoacetic acid and beta-hydroxybutyric acid
C. They are synthesized (ketose) in the hepatic mitochondria
D. They are oxidized (ketolysis) in the hepatic mitochondria
E. They are released from the hepatic cell into the plasma (ketonemia) and they are eliminated in urine (ketonuria)

21. Which of the following hormones have a lipolytic effect?
A. Insulin
B. Adrenaline
C. Thyroxine
D. Somatotropic hormone
E. Triiodothyronine

22. Select the correct associations:
A. Eritropoiesis - angiotensin
B. Transmission of nervous influx – chemical mediators
C. Maintaining the acid-base balance – buffer systems
D. Muscle contractility – myoglobin
E. Anaerobic glycolysis –oxidative phosphorilation

23. The following amino acids are used in the process of protein synthesis:
A. Essential and non-essential
B. Resulting from lipolysis
C. Resulting from glycoysis
D. Resulting from protein catabolism
E. Of dietary origin

24. The following substances result from the process of amino acid oxidative deamination:
A. Fatty acids by the removal of an amine group
B. Ketoacids which can be fully oxidized down to H_2O şi CO_2
C. Ketoacids that can be used to rebuild certain fatty acids by transamination
D. Ammonia, toxic even in small concentrations
E. Ammonia, neutralized by its transformation into urea (ureagenesis)

25. Ammonia is a toxic substance:
A. Eliminated through urine, as ammonia salts
B. Eliminated through urine, as glutamine
C. Transformed into urea, in the liver
D. Transformed into glutamine, in the liver
E. Transformed into glutamine, in the central nervous system

26. Protein catabolism in the adult is stimulated by the following hormones:
A. Insulin
B. Somatotropic hormone
C. Acetylcholine
D. Thyroxine
E. Cortisol

27. Select the correct statements regarding adenosine triphosphate:
A. It is hydrolyzed by actomyosin, with energy release
B. It cannot be obtained through anaerobic glycolysis
C. It is involved in the contraction and relaxation of the muscle fiber
D. By the hydrolysis of a phosphate macroergic bond, adenosine triphosphate is transformed into adenosine diphosphate, with energy release

E. By the hydrolysis of a phosphate macroergic bond, adenosine diphosphate is transformed into adenosine triphosphate, with energy release

28. Select the correct statements referring to basal metabolism:

A. It represents the minimum energy uptake necessary for maintaining vital functions
B. It is determined through calorimetry
C. It is assessed in conditions of physical, psychic and dietary resting, and at comfort temperature
D. The mean value varies according to age, sex and weight
E. The value of basal metabolism cannot be influenced by physiological and pathological factors

29. The body's energy uptake to maintain vital functions is stimulated by:

A. Thyroxine
B. The sympathetic autonomic system
C. The parasympathetic autonomic system
D. Insulin
E. Catecholamins

30. Select the correct statements referring to the negative energy balance:

A. It expresses a condition of metabolic imbalance
B. It occurs when diet provides a calorie intake lower than the energy output
C. It occurs when diet provides a calorie intake higher than the energy output
D. It occurs when the body uses up reserve substances (glycogen, lipids) and structural proteins
E. It occurs when lipid reserves increase

31. Select the correct statements referring to thermogenesis:

A. It represents the heat-producing mechanism
B. It is controlled by the thermogenetic center in the anterior hypothalamus
C. It is directly stimulated by the temperature increase in the cold receptors
D. It is directly stimulated by the temperature decrease of the blood in the hypothalamus
E. Temperature decrease stimulates carbohydrate and lipid oxidative catabolism

32. Thermogenesis and the body's cold adaptation is achieved by:

A. The increase of basal metabolism
B. The increase of smooth muscle tonus
C. The stimulation of adrenalin secretion in the adrenal gland
D. The stimulation of adrenalin secretion in the medulla suprarenal gland
E. The stimulation of thyroxin secretion as heat producing hormone

33. Thermolysis involves:

A. The decrease of basal metabolism
B. The increase of striated muscle tonus
C. Peripheral vassoconstriction
D. Peripheral vassodilation

E. Stimulation of sweat gland secretion

34. Select the correct statements referring to an appropriate diet:
A. It requires a differentiated dietary intake according to age and the type of activity
B. It maintains health
C. It induces long-term decrease of body immunity
D. It reduces by 0.05% the risk of cardiovascular disorders
E. It reduces by 50% the risk of cardiovascular disorders

35. Select the correct statements referring to the hunger center:
A. It is located in the lateral hypothalamus
B It is located in the ventromedial hypothalamus
C. It controls the proper movements of the digestive tract during eating
D. It becomes extremely active when the body's deposits of nutritive substances drop below normal
E. It triggers appetite

1. The female genital tract consists of:
A. The mammary gland
B. Fallopian tubes
C. The uterus
D. The vagina
E. The ovary

2. The ovarian follicles are represented by:
A. Secondary follicles (de Graaf)
B. Primordial follicles
C. Primary follicles
D. Secondary follicles
E. Mature follicles (de Graaf)

3. The vascularization of the fallopian tubes is provided by:
A. Arterial branches of the coeliac trunk
B. The ovarian artery
C. The superior vena cava
D. The uterine artery
E. The external iliac vein

4. Select the correct statements referring to the structure of the uterus:
A. The myometrium represents the external layer of the uterus
B. The serous membrane covers the body of the uterus
C. The muscular membrane is also called myometrium
D. The mucous membrane is a functional layer
E. The endometrium lines the uterine cavity

5. The male genital tract consists of:
A. Ureter
B. Testicles
C. Spermatozoa
D. Prostate
E. External genitalia

6. The auxiliary glands of the male reproductive system are:
A. Testicles
B. Seminal vesicles
C. Prostate
D. Epididymis
E. Bulbar-urethral glands

7. Select the correct statements referring to the epididymus:
A. It belongs to the seminal ducts
B. It is shaped like a comma
C. It is a part of the testicular bursae
D. It contains the epididymal canal
E. It is an male external genitalia

8. The testicle has:
A. An external pearly-white membrane, tunica albuginea
B. The testicular parenchyma which delimits the lobules
C. Lobules which contain 2-3 seminiferous convoluted tubules
D. Over 500 lobules for each testicle
E. Connective septa on its surface

9. The vascularization of the testicle is provided by:
A. The femoral artery
B. The superior mesenteric artery
C. The superior vena cava
D. The testicular artery
E. The inferior vena cava

10. Select the correct statement referring to the seminal vesicle:
A. It is an organ situated above the prostate
B. It is an organ with secretory role
C. It is an unpaired organ
D. It is a paired organ
E. It is situated below the prostate

11. Select the correct statements referring to the prostate:
A. It is located around the ureter
B. It is an auxiliary gland of the male genital apparatus
C. It is an exocrine glandular organ
D. It secretes a fluid that participates in the formation of sperm
E. It is a paired organ

12. Male external genitalia are represented by:
A. Prostate
B. Penis
C. The seminal vesicle
D. The bulbar-urethral glands
E. The male urethra

13. Which of the following statements referring to the formation of mature follicles are true?

A. At birth, each ovary contains a few hundred thousand primordial ovarian follicles
B. During a woman's fertile period, only 300 – 400 primordial follicles reach maturity
C. The formation of mature follicles, one follicle per month, starts with puberty
D. The formation of mature follicles ceases with menopause
E. The formation of mature follicles starts in the foetal period

14. Select the correct answers referring to the ovogenesis that takes place in the Fallopian tubes:

A. Type I oocytes undergo a meiotic division which creates two haploid cells
B. Type II oocytes undergo a mitotic division which creates two haploid cells
C. Type II oocytes divide into the pre-ovum and the first polar globe
D. The pre-ovum, without division, gives birth to the haploid fertilizable ovum
E. The fertilizable ovum moves along the Fallopian tube propelled by the cilia of the mucosa

15. Select the corect statements referring to the endocrine function of the ovary:

A. It is carried out by the theca externa ov the ovarian follicles
B. It is carried out by the cells of the corpus luteum
C. The ovarian follicles secrete progesterone (in large quantity) in the first stage of the ovarian cycle
D. The corpus luteum secretes estrone, estradiol and estriol (in large quantity) in the second stage of the ovarian cycle
E. The corpus luteum secretes progesterone (in large quantity and estrogens (in small quantity) in the second stage of the ovarian cycle

16. The estrogen hormones are secreted by:

A. The follicular cells – during the maturation of the ovarian follicle
B. The cells of corpus luteum – following the ovulation
C. The placenta – during pregnancy
D. The adrenal glands – in males and females
E. The cells of corpus luteum – in the last three months of pregnancy

17. Select the incorrect statements referring to the secretion of estrogen hormones:

A. It is stimulated by the follicle stimulating hormone
B. It is inhibited by the luteinizing hormone
C. It stimulates the proliferation of the uterine mucosa and muscles
D. It stimulates the development of the mammary glands
E. It stimulates the development of secondary characteristics in female

18. Progesterone (lutein) is synthesized by:
A. The follicular cells (in large quantities) – during the maturation of the ovarian follicle
B. The cells of the corpus luteum – before ovulation
C. The cells of the corpus luteum – in the first months of pregnancy
D. Placenta – during pregnancy
E. The adrenal cortex– in males and females

19. Select the correct statements referring to the control exercised on the ovarian function:
A. The follicle stimulating hormone (FSH) stimulates the maturation of an ovarian follicle every month, in fertile women
B. FSH stimulates the secretion of estrogen hormones also called „maternity" hormones
C. The luteinizing hormone (LH) triggers the expulsion of the type II oocyte from a mature follicle
D. LH stimulates the formation of the corpus luteum which results from the transformation of the remaining follicle which performed ovulation
E. LH stimulates the secretion of progesterone also called the „feminity" hormone

20. The ovarian cycle has two phases. Which are these?
A. Preovulatory and postovulatory separated by the moment of ovulation starting with the 14^{th} day of the ovarian cycle
B. Preovulatory which lasts from the 1^{st} day to the 14^{th} day of the ovarian cycle
C. Luteal care which lasts from the 1^{st} day to the 14^{th} day of the ovarian cycle
D. Postovulatory which lasts from day 15 to the first day of menstruation
E. Follicular which lasts from day 15 to the first day of menstruation

21. It is true that in the follicular phase of the ovarian cycle:
A. FSH controls the preparation of the follicle for ovulation
B. The follicle secretes estrogens under the action of the follicle stimulating hormone
C. The regulation from negative feedback to positive feedback of the hypothalamo-hypophyseal-ovarian axis changes
D. Estrogen and progesterone secretion stimulates the secretion of adenohypophyseal gonadotropin
E. The low secretion of the luteinizing hormone from the end of the follicular phase triggers ovulation

22. It is true that between the 15th and the 28th day of the ovarian cycle:
A. Ovulation occurs
B. Ovogenesis occurs
C. The ovarian follicle matures
D. The endometrium doubles its thickness
E. The superficial layer of the uterine mucosa is eliminated through the vagina together with the unfecundated ovum

23. In the absence of fecundation, it is true that:
A. The ovarian follicle is transformed into corpus albicans
B. The ovum is eliminated on the 19th – 20th day of the ovarian cycle
C. The secretion of corpus luteum decreases abruptly on the 26th day of the ovarian cycle
D. Corpus luteum regresses after 10 days and turns into corpus albicans
E. There are vascular alterations in the uterine mucosa followed by necrosis and haemorrhage

24. Select the correct statements referring to the menstrual cycle:
A. It takes place in the uterine mucosa
B. It is the result of the action of sexual hormones during the phases of the ovarian cycle
C. It lasts 28 days and it overlaps the ovarian cycle
D. It has three phases: menstrual, proliferative and secretory
E. It takes place in the muscular layer of the uterus

25. Select the correct statements referring to spermatogenesis:
A. It is the endocrine function of the testicle
B. It begins in puberty
C. It decreases in old age
D. It is the result of complex processes of division and maturation of the primitive germinal cells (spermatids)
E. It is the result of complex processes of division and maturation of the primitive germinal cells (spermatogonia)

26. Select the correct statements referring to spermia (spermatozoa):
A. The head of the spermatozoa is an acrosome with enzymes which lyzes with the membrane of type I oocyte
B. The intermediate part of the spermatozoa contains mitochondria (adenosintriphosphate source)
C. The tail of the spermatozoa is represented by a cilium which ensures its mobility
D. In the seminal fluid secreted by the auxiliary glands, the spermatozoa are immobile
E. The seminal fluid contains a large number of spermatozoa (1.5 – 2 thousands/ml).

27. The testicle secretes:
A. Androgynous hormones
B. Testosterone, mainly
C. A lipidic hormone, with sterol structure
D. Estrogens, in small quantity
E. Progesterone, in small quantity

28. Select the correct statements referring to testosterone:
A. It is the product of the Leydig interstitial cells situated in the testicular parenchyma
B. It is the secretion product of the testicular convoluted seminiferous tubes

C. It represents the exocrine secretion of the testicles, stimulated by the follicle-stimulating hormone (FSH)
D. It represents the endocrine secretion of the testicles, stimulated by the luteinizing hormone
(LH)
E. It is an androgynous hormone also synthesized in small quantities by the adrenal gland, in men and women

29. Select the correct statements referring to fecundation (conception):
A. It takes place in the Fallopian tubes
B. It results in the formation of a zygote
C. It takes place in the vagina
D. It needs a single fertilizing spermatozoa
E. It involves the nidation in the uterus of the fertilized ovum, which becomes an embryo

30. The embryonic annexes are represented by:
A. Amnion
B. Yolk sac
C. Zygote
D. Allantoid
E. Placenta

ANSWERS

Chapter I ➧ THE HUMAN BODY

1.B; 2.B,D; 3.B,C,D; 4.D; 5.C; 6.B,C,E; 7.B; 8.B,E; 9.A,B; 10.C,D; 11.C,D,E; 12.C,E; 13.A,B,D; 14.A,C; 15.B,D,E; 16.C,D,E; 17.A,C,E; 18.A,C,E; 19.A,C,D; 20.A,B,D,E; 21.A,C,E; 22.A,C; 23.B,C,E; 24.B,C,D; 25.A,B,C; 26.A,C,E; 27.A,B; 28.A,C,E; 29.C; 30.B,C,D; 31.B,D; 32.A,B,D; 33.C; 34.C; 35.A,B,D; 36.A,D,E; 37.A,B,D; 38.A,C,D; 39.B; 40.B,D; 41.B,D; 42.A,C,D; 43.A,B,D,E; 44.B,C,E; 45.A,B,D; 46.B,C,D,E; 47.A,B; 48.A,D,E; 49.B,E; 50.C,E.

Chapter II ➧ THE NERVOUS SYSTEM

1.B,E; 2.C; 3.C,D,E; 4.A; 5.B,E; 6.A,B,C,D; 7.A,B,D; 8.A,B,D; 9.D,E; 10.A,D,E; 11.C,E; 12.A,C; 13.A,E; 14.A,D,E; 15.B,C; 16.A,C,D; 17.B; 18.C,E; 19.C; 20.B,D,E; 21.C,D; 22.A,B; 23.A,E; 24.B,E; 25.A,D,E; 26.B; 27.A,B,E; 28.B,E; 29.C,D; 30.A,C,D; 31.B,D; 32.B,C,D,E; 33.B,D,E; 34.A,C,D; 35.E; 36.D; 37.D; 38.D; 39.A,C,D,E; 40.B,D; 41.A; 42.C,E; 43.B,D; 44.B,E; 45.B,E; 46.B,D; 47.A,B; 48.D; 49.B,C,E; 50.E; 51.A,D; 52.B,E; 53.A,C,E; 54.B,C,E 55.C,D,E; 56.A,B; 57.D; 58.C,D; 59.A,D,E; 60.A,D; 61.C,D,E; 62.A,C; 63.B,E; 64.B,E; 65.B,C,E; 66.E; 67.A,B; 68.D; 69.A,D; 70.B,D; 71.E; 72.A,B,C,D; 73.D; 74.A,C; 75.E; 76.B,C; 77.B; 78.C; 79.A,C; 80.B.

Chapter III ➧ ANALYZERS

1.A,B,C,D; 2.C,D; 3.A,B,C,D; 4.C,D; 5.B; 6.A,B,D; 7.B,C,D,E; 8.A,C; 9.C; 10.B,C; 11.A,E; 12.C; 13.D; 14.A,E; 15.A,B; 16.B,C,D; 17.C,E; 18.D,E; 19.B,D; 20.A,B,E; 21.A,D; 22.B; 23.B,C,E; 24.A,C,E; 25.B,C,D; 26.E; 27.B,E; 28.B,E; 29.B,D; 30.B; 31.D,E; 32.B,E; 33.B,C; 34.A; 35.D; 36.D,E; 37.B,C; 38.B,D; 39.B,D; 40.C; 41.A,B,C; 42.C,D; 43.A; 44.B; 45.B,C; 46.D; 47.E; 48.A,D; 49.A,E; 50.B,D.

Chapter IV ➧ THE ENDOCRINE GLANDS

1.D,E; 2.A,C; 3.B,C; 4.A,B,E; 5.A,B,D; 6.B; 7. C,D,E; 8.A,C,D,E; 9.B,C,D,E; 10.A,B,C,D; 11.E; 12.A,B,C; 13.B,C; 14.A,E; 15.A,C,E; 16.A,B,D; 17.A,B,C,D; 18.B,C,D; 19.B,C,E; 20.B,C,D,E; 21.B,C,D,E; 22.A,B,D,E; 23.B,D,E; 24.A,C; 25.A,B,E; 26.B; 27.A,B,C,E; 28.A,B,C,E; 29.A,B,C; 30.A,B,C,D; 31.D,E; 32.C,D,E; 33.B,C,E; 34.A,B,C; 35.E; 36.A,B,C,D; 37.C,E; 38.A,B,D,E; 39.A,B,C,E; 40.A; 41.A,C; 42.A,E; 43.C,D; 44.A,B,C,E; 45.A,B,C,E.

Chapter V ➧ MOVEMENT

1.A,C; 2.C,D,E; 3.B,C,D; 4.D,E; 5.A,B,C,D; 6.A,C,E; 7.C,D; 8.A,D,E; 9.D; 10.C,D; 11.A,D,E; 12.A,C,D,E; 13.B,C; 14.A,C; 15.D; 16.D,E; 17.A; 18.B,D,E; 19.A,D; 20.A,D; 21.B; 22.B; 23.B,D,E; 24.A,D; 25.B,D,E; 26.A,B; 27.B,C,D; 28.A,C,D; 29.B,C; 30.E; 31.A,B,C; 32.A,B; 33.A,B,C,D; 34.A,B,D; 35.A,D,E; 36.A,C,E; 37.A,C,E; 38.A,D; 39.A,C; 40.A,B,C,D; 41.B,C; 42.A,B,C,D; 43.B,C,E; 44.A,C,E; 45.A,C,D,E; 46.A,B,D; 47.A,C,D,E; 48.A,C; 49.A,B,D,E; 50.A,C,D,E.

Chapter VI ◗ DIGESTION AND ABSORPTION

1.B,C,D; 2.A,C,D; 3.A,C,D; 4.A,D,E; 5.B,C,E; 6.A,D,E; 7.B,C,D; 8.A,C,E; 9.B,C,D; 10.A,B,E; 11.A,B,D,E; 12.B,C; 13.D,E; 14.B; 15.B,E; 16.B,D; 17.D,E; 18.A,B,C,E; 19.A,C,D; 20.A,C; 21.C,E; 22.C; 23.A,C,D; 24.A,C,D; 25.A,B,C,D; 26.A,C,D; 27.B,C,E; 28.A,B,C; 29.B; 30.D,E; 31.A,B,C,D; 32.A,C,D; 33.B,C,E; 34.A,B,C; 35.B,C,D,E; 36.C,D; 37.A; 38.A,C,E; 39.A,D,E; 40.B,D,E.

Chapter VII ◗ CIRCULATION

1.B,C,E; 2.A,C,D,E; 3.C,E; 4.A,B,C,D; 5.B,D,E; 6.A,B,C,E; 7.A,D,E; 8.C,D,E; 9.A,C,D; 10.A,C,E; 11.A; 12.A,B,C; 13.B,C,D,E; 14.B,D,E; 15.B,C; 16.A,B,C; 17.A,B,C,E; 18.A,C,E; 19.A,B,C,E; 20.A,B,C,E; 21.D; 22.A; 23.B,D,E; 24.A,B; 25.B,E; 26.B; 27.A,E; 28.B,C,D; 29.A,D; 30.B,C,D; 31.B,C,D; 32.B,C,D; 33.B,E; 34.A,B,C,E; 35.B,C,E; 36.A,B,D; 37.A,C; 38.A,B,D,E; 39.B,C,E; 40.B,C,D; 41.A,B,E; 42.B,C; 43.C,D,E; 44.A,B,C,D; 45.A,B,C; 46.A,D; 47.B,D,E; 48.A,B,C,D; 49.B,C,D; 50.A,B,E; 51.C,D; 52.A,D,E; 53.A,B; 54.C,D; 55.A,C,D; 56.B,C,D; 57.A,B,C,D; 58.C,D,E; 59.B,C,D,E; 60.A,B,C,D.

Chapter VIII ◗ RESPIRATION

1.A,C,E; 2.B,C; 3.A,B; 4.B,D,E; 5.A,C,D; 6.B,D,E; 7.B,D,E; 8.A,B,E; 9.A,B,D,E; 10.B,C; 11.B,C,D; 12.A,C,D; 13.B,C; 14.B,C; 15.A,B,D; 16.C,D,E; 17.A,B,D; 18.C,D,E; 19.A,B,D; 20.B,D,E; 21.A,B,C; 22.A,C; 23.B,D; 24.B,C,D; 25.A,B; 26.C,D,E; 27.A,D,E; 28.C,D,E; 29.D; 30.A,C,D,E.

Chapter IX ◗ EXCRETION

1.A,B,C; 2.A,C,D; 3.C,D,E; 4.B; 5.A,C,D; 6.A,B,C; 7.D,E; 8.E; 9.A; 10.A,D,E; 11.D,E; 12.A,B; 13.D,E; 14.A,B,E; 15.B,C; 16.C,D; 17.C,D,E; 18.C,D; 19.A,C,E; 20.A,E; 21.A,D; 22.C,D,E; 23.B,D,E; 24.D; 25.A,C,E; 26.C,E; 27.C,D,E; 28.B,D; 29.A,B,D,E; 30.B.

Chapter X ◗ METABOLISM

1.A,B,C,E; 2.A,C; 3.A,B,C; 4.A,B; 5.A,E; 6.B,C; 7.B,D,E; 8.A,B,E; 9.C,D; 10.A,B,E; 11.A,B,C; 12.B,C,D; 13.B,D,E; 14.A,E; 15.B,C,E; 16.A,C; 17.A,B,D; 18.A,B,D; 19.B,D,E; 20.B,E; 21.B,C,D,E; 22.B,C; 23.A,D,E; 24.B,D,E; 25.A,C,D,E; 26.D,E; 27.A,C,D; 28.A,C,D; 29.A,B,E; 30.A,B,D; 31.A,D,E; 32.A,D,E; 33.A,D,E; 34.A,B,E; 35.A,D.

Chapter XI ◗ REPRODUCTION

1.B,C,D; 2.B,C,D,E; 3.B,D; 4.B,C,D,E; 5.B,D,E; 6.B,C,E; 7.A,B,D; 8.A,B,C; 9.D; 10.A,B,D; 11.B,C,D; 12.B; 13.A,B,C,D; 14.B,D,E; 15.B,E; 16.A,B,C,D; 17.B; 18.C,D,E; 19.A,C,D; 20.A,B,D; 21.A,B,C,D; 22.D; 23.B,C,D,E; 24.A,B,C,D; 25.B,C,E; 26.B; 27.A,B,C,D; 28.A,D,E; 29.A,B,D,E; 30.A,B,D,E.

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