

Chapter I

THE HUMAN BODY

1. The larynx:

- A. Is situated at the level of the cephalic extremity
- B. Belongs to the somatic elements of the head
- C. Is a double-function organ
- D. Is a viscera situated in the segment that connects the head to the trunk
- E. Belongs to the neck viscera

2. The thoracic cavity:

- A. Is separated from the pelvic cavity by the perineal diaphragm
- B. Belongs to the trunk
- C. Is continuous with the abdominal cavity
- D. Is separated from the abdominal cavity by a muscle called the diaphragm
- E. Comprises the abdominal viscera

3. The abdominal cavity:

- A. Lies inside the trunk
- B. Is superior to the thoracic cavity
- C. Is superior to the pelvic cavity
- D. Contains the internal organs
- E. Its floor is represented by the perineal diaphragm

4. Select the correct answers pertaining to the cell:

- A. Is the basic morphofunctional unit of all living organisms
- B. Its shape is independent from its function
- C. Initially, it has a globular shape
- D. It can exist only as an isolated structure
- E. It can exist as an isolated structure or in clusters

5. The three main components of the cell structure are:

- A. Mitochondria
- B. Plasmalemma
- C. Cytoplasm
- D. Ergastoplasm
- E. Nucleus

6. The plasmalemma:

- A. Gives the shape and internal structure of the cell
- B. Is made up entirely of phospholipids
- C. Separates the internal cell structures from the extracellular environment
- D. Encloses the cell
- E. Gives shape to the cell

7. The structure of the cell membrane:

- A. Consists, mainly, of phospholipids and proteins
- B. Through its hydrophilic core, it regulates the transmembrane passage of ions
- C. In lipid structures, it has an uneven protein distribution
- D. Forms the fluid mosaic model
- E. Its extracellular surface carries carbohydrates with a high positive charge

8. The cytoplasm:

- A. Is a colloidal system with a simple structure
- B. Envelops the cell
- C. Has a uniform structure
- D. Has a complex structure
- E. Is the cell component within which most cellular activities occur

9. Organelles:

- A. Represent the unstructured part of the cytoplasm
- B. Represent the structured part of the cytoplasm
- C. Can be found only in certain cells
- D. Are of two types: common to all cells and specific
- E. Are represented by the plasmalemma, the cytoplasm, and the nucleus

10. Ribosomes represent the site for the synthesis of:

- A. Fatty acids
- B. Lipids
- C. Proteins
- D. Amino acids
- E. Glycogen

11. The Golgi apparatus:

- A. Is composed of dictyosomes
- B. Is formed of flat cisternae
- C. Plays a role in producing cell energy
- D. Plays a role in cellular secretion processes
- E. Plays a role in membrane-synthesis

12. Mitochondria are directly involved in:

- A. Digesting substances and particles that enter the cell
- B. Protein synthesis
- C. Release of cellular energy
- D. Excretion of certain cellular substances
- E. Cellular division

13. Lysosomes:

- A. Are spherical bodies
- B. Are spread throughout the entire hyaloplasm
- C. Play an important role in the phagocytic cells
- D. Are the site of oxidative phosphorylation
- E. Are absent from the neuron

14. Myofibrils:

- A. Are specific organelles
- B. Are non-contractile elements
- C. Are contractile elements
- D. Are involved in energy production
- E. Are located in the cell membrane

15. The nucleus:

- A. Consists of cytoplasm and nuclear membrane
- B. Consists of karyoplasm and cell membrane
- C. Is enclosed by a triple membrane
- D. Does not contain RNA
- E. None of the above

16. Erythrocytes:

- A. Lack a cell nucleus
- B. Have a cell nucleus
- C. Contain haemoglobin
- D. Have a functional lifespan of 120 days
- E. Participate in nutrient transportation

17. Chromosomes:

- A. Are formed at the end of cellular division
- B. Consist of ribosomal DNA and RNA
- C. Contain histone and non-histone proteins
- D. Contain small amounts of carbohydrates and Ca^{2+} and Mg^{2+} ions
- E. Are formed of chromatin granules

18. The cell membrane:

- A. Is selectively permeable to all molecules and ions
- B. Allows a bidirectional exchange of nutrients
- C. Allows an ion transfer, thus producing an electric charge
- D. Represents a barrier to the diffusion on unpolarised molecules
- E. Allows free ion passage

19. Transmembrane transports which are not carried out via transport proteins comprise:

- A. Diffusion
- B. Facilitated diffusion
- C. Primary active transport
- D. Cotransport
- E. Osmosis

20. Osmosis:

- A. Is the diffusion of water (solvent) in a solution
- B. Involves a partially permeable membrane
- C. Requires a more permeable membrane for solute molecules than for solvent molecules
- D. Represents the passage of water from a compartment of lower solute concentration to one of higher solute concentration
- E. Represents the passage of water from a compartment of higher solute concentration to one of lower solute concentration

21. Active transmembrane transport:

- A. Is carried out via mechanisms that use transport proteins
- B. Ensures the movement of molecules and ions in the same direction as the concentration gradient
- C. Consumes energy
- D. May be primary and secondary (cotransport)
- E. Ensures the transmembrane transport of ethanol and urea

22. The neuron action potential takes place in the following phases:

- A. Threshold
- B. Rising phase
- C. Peak
- D. Falling phase
- E. Refractory period

23. Specific cell properties comprise:

- A. Excitability
- B. Muscle contractility
- C. Cell metabolism
- D. Endocrine secretion
- E. Exocrine secretion

24. Each cell synthesizes:

- A. Characteristic protein and lipid substances
- B. Substances needed to repair its own structures
- C. Substances it secretes into its internal environment
- D. Substances with a metabolic or regulator role
- E. Substances necessary for growth and multiplication

25. Tissues:

- A. Are organised systems of living matter
- B. Are made up of different cells
- C. Consist of cells held together by a “cementing substance”
- D. Consist of cells held together by a “fundamental substance”
- E. Consist of cells carrying out the same function or group of functions in the body

26. The epithelial tissue:

- A. Is a reticular, glandular and sensory protective tissue
- B. Consists of cells with dictyosomes ((connective organelles)
- C. Forms the epidermis
- D. Forms the tendons, ligaments and aponeuroses

E. Is a structural component of sensory organs

27. The connective tissue can be classified into:

- A. Dense tissue
- B. Support tissue
- C. Conducting tissue
- D. Semi-dense tissue
- E. Loose tissue

28. Adipocytes:

- A. Are globular cells
- B. Are fusiform cells
- C. Contain lipids in their cytoplasm
- D. Have a trophic function
- E. Have a mechanical function

29. The bone tissue:

- A. Is a variety of connective tissue
- B. Is the structural component of bones
- C. Is a variety of semi-dense connective tissue
- D. Forms bones whose organic matrix consists of fundamental substance and collagen fibres
- E. Is sub-divided into two types: Haversian and compact

30. The nervous tissue consists of:

- A. Cells called neurofibrils
- B. Nerve cells (neuroglia)
- C. Cells called neurons, which lack mitochondriae
- D. Nerve cells (neurons)
- E. Cells which do not divide (neurons)

1. ACDE

2. BD

3. ACD

4. ACE

5. BCE

6. CDE

7. ACD

8. DE

9. BD

10. C

11. ABDE

12. C

13. ABC

14. AC

15. E

16. ACD

17. CE

18. BC

19. AE

20. ABD

21. AD

22. ABD

23. BDE

24. ABCDE

25. ACDE

26. CE

27. ADE

28. AC

29. ABD

Chapter II

THE NERVOUS SYSTEM

31. The nervous system has the following functions:

- A. Achieves the static balance between the body and the environment
- B. Regulates most body functions together with the exocrine system
- C. Regulates mainly metabolic functions
- D. Regulates muscle activity
- E. Regulates all body functions

32. The nervous system is sub-divided into:

- A. Somatic nervous system
- B. Dendrites and axons
- C. Neurons and glial cells
- D. Autonomic nervous system
- E. The body of the neuron and its prolongations

33. The central nervous system consists of:

- A. Encephalon and spinal cord
- B. Nerves, ganglia and tracts
- C. Nerves, ganglia and plexuses
- D. Spinal cord and tracts
- E. Plexuses and tracts

34. The peripheral nervous system consists of:

- A. Encephalon and spinal cord
- B. Nerves, ganglia and plexuses
- C. Nerves, ganglia and tracts
- D. Spinal cord and tracts
- E. Plexuses and tracts

35. The somatic nervous system regulates the activity of:

- A. Skeletal muscles
- B. Visceral muscles
- C. Secretory glands
- D. Exocrine glands
- E. Endocrine glands

36. The Autonomic nervous system regulates the activity of:

- A. Skeletal muscles
- B. Visceral muscles
- C. Secretory glands
- D. Exocrine glands
- E. Endocrine glands

37. Nerve centres:

- A. Process the received information
- B. Issue commands that are relayed to the receptors
- C. Can be separated into two functional compartments
- D. Have a sensory compartment
- E. Have a motor compartment

38. The fundamental characteristics of neurons are:

- A. Transmission
- B. Defense of nerve centres
- C. Myelin synthesis
- D. Excitability

E. Tropicity

39. According to their function, neurons can be classified as:

- A. Motor neurons
- B. Interneurons
- C. Receptor neurons
- D. Association neurons
- E. Inhibitor neurons

40. According to their structure (polarity), neurons can be classified as:

- A. Multiple neurons
- B. Pseudomultipolar neurons
- C. Multipolar neurons
- D. Bipolar neurons
- E. Unipolar neurons

41. The cellular body of a neuron is delimited by:

- A. Neurilemma
- B. A membrane with a lipoproteic structure
- C. Neurofibrils
- D. Neuroplasma
- E. A thick membrane

42. The function(s) of neuron-specific organelles is(are):

- A. Protection
- B. Support
- C. Role in the neuronal metabolism
- D. Trophic
- E. Transmit nervous signals

43. Neuron-specific organelles are represented by:

- A. Ribosomes
- B. Tigroid bodies
- C. Mitochondriae
- D. Nissl bodies
- E. Neurofibrils

44. The axon is a projection:

- A. Long
- B. Short
- C. Consisting of a specialised cytoplasm
- D. Multiple
- E. Ramified in its terminal part

45. The nervous signal is transmitted through the axon:

- A. Towards the neuron's cell body
- B. Towards the perikaryon
- C. Towards its terminal part
- D. Towards the neuroglial cells
- E. In both directions

46. The terminal parts of an axon contain:

- A. Nissl bodies
- B. Large vesicles, filled with chemical mediators
- C. Small vesicles, filled with chemical mediators
- D. Mitochondriae
- E. Neurofibrils

47. In myelinated axons:

- A. Conduction velocity is 10 m/sec
- B. There is a saltatory conduction
- C. The action potential jumps from one Schwann cell to the next

- D. The action potential is generated at the point of the nodes of Ranvier
- E. Conduction is achieved due to the insulating properties of myelin

48. Dendrites are projections:

- A. Of the neurons
- B. Of the glial cells
- C. Which lack neurofibrils
- D. Thinner in their initial part
- E. Thicker in their initial part

49. Through dendrites, the nervous signal is transmitted:

- A. Towards the perikaryon
- B. Towards the neuron's cell body
- C. Towards their terminal part
- D. Towards the neuroglial cells
- E. In both directions

50. Synapses:

- A. Are functional connections between a neuron and another cell
- B. May be excitator and inhibitor
- C. Transmit the signal in a single direction
- D. May be axodendritic
- E. Structurally, are divided into chemical and electrical

51. Neuroneuronal synapses may be:

- A. Axosomatic
- B. Axodendritic
- C. Axoaxonic
- D. Dendrodendritic
- E. All the above

52. The reflex arc consists of the following functional elements:

- A. Effector
- B. Receptor
- C. Afferent pathway
- D. Nerve centres
- E. None of the above

53. The afferent pathway connects:

- A. Receptor to receptor
- B. Receptor to nerve centres
- C. Effector to nerve centres
- D. Nerve centres to effector
- E. Effector to receptor

54. The receptors are represented by:

- A. Differentiated and specialised epithelial cells of the sensory cells
- B. Undifferentiated and specialised epithelial cells of the sensory cells
- C. Sensory corpuscles
- D. Undifferentiated and specialised connective cells of the sensory cells
- E. Terminal buttons of the axons

55. Thermal receptors:

- A. Register touch
- B. Have free-non-specialised endings
- C. Send impulses when skin temperature decreases
- D. Send impulses when skin temperature rises
- E. Belong to the category of mechanoreceptors

56. Pain receptors:

- A. Detect mechanical deformations
- B. Adapt very little or not at all in the presence of stimuli

- C. Are stimulated by extreme temperatures
- D. Are, mainly, free-non-specialised endings
- E. Are stimulated by four categories of factors

57. Visceroreceptors are represented by:

- A. Baroreceptors
- B. Chemoreceptors
- C. Exteroceptors
- D. Photoreceptors
- E. Proprioceptors

58. Somatic spinal reflexes are represented by:

- A. Myotatic reflexes
- B. Walking reflex
- C. Nociceptive reflexes
- D. Defense reflexes
- E. Vasoconstrictor reflexes

59. Conditioned reflexes:

- A. Are inborn and hereditary
- B. Are closed at cortical level
- C. Disappear if the conditional stimulus is not periodically reinforced by the absolute stimulus
- D. Are characteristic to a species
- E. Are acquired responses given by nerve centres when an absolute signal is triggered

60. Unconditioned reflexes:

- A. Are acquired reflexes
- B. Are inborn and hereditary
- C. Are inborn but are not hereditary
- D. Are characteristic to a species
- E. Are not characteristic to a species

61. The feeding reflex:

- A. Is an acquired reflex
- B. Is a conditioned reflex
- C. Is inborn
- D. Is characteristic to a species
- E. Is a defense reflex

62. The myelin sheath:

- A. Blocks the transmission of a nervous impulse
- B. Acts as a thermal isolator
- C. Envelop axons with a diameter smaller than 2 microns
- D. Is involved in the permeability and resistance of the axon
- E. Is produced by oligodendrocytes

63. Schwann's sheath:

- A. Separates the plasma membrane of a Schwann cell from the surrounding connective tissue
- B. Consists of epithelial cells
- C. Is absent in the axons of central neurons
- D. Wraps around the myelin sheath of the axons of peripheral neurons
- E. Consists of reticulin fibres

64. Henle's sheath:

- A. Consists of Schwann cells
- B. Wraps around the myelin sheath
- C. Is produced by oligodendrocytes
- D. Separates the plasma membrane of a Schwann cell from the surrounding connective tissue
- E. Contains nodes of Ranvier

65. Cranial nerves:

- A. Have a dorsal and a ventral root

- B. Belong to the central nervous system
- C. Belong to the peripheral nervous system
- D. Are not disposed in a metametric manner
- E. Belong entirely to the cerebral trunk

66. The trigeminal nerves are:

- A. Cranial nerves
- B. Spinal nerves
- C. Mixed nerves
- D. Sensory nerves
- E. Motor nerves

67. The glossopharyngeal nerves:

- A. Represent the pair of the ninth cranial nerves CN IX
- B. Represent the pair of the eleventh cranial nerves CN XI
- C. Are motor nerves which also contain parasympathetic fibres
- D. Are mixed nerves which also contain parasympathetic fibres
- E. Provide taste sensation from the anterior third of the tongue

68. The vagal nerves:

- A. Innervate the muscles of the larynx and pharynx
- B. Control the contraction of the muscles of the tongue and pharynx
- C. Their apparent origin lies in the pre-olivary groove
- D. Are mixed cranial nerves
- E. The actual origin of their motor fibres lies in the ambiguous nucleus

69. The bone marrow of the spinal cord carries out the following fundamental functions:

- A. Coordination of the endocrine function
- B. Associative
- C. Conduction
- D. Control
- E. Reflex

70. The conduction function of the spinal cord is achieved through the following pathways:

- A. Exteroceptive sensors
- B. Ascending
- C. Motor
- D. Sensory
- E. Descendent

71. The cerebral trunk:

- A. Is formed by the bulb, the pons Varolii and the diencephalon
- B. Is a part of the encephalon
- C. Is structured on 4 layers
- D. Is the site of certain somatic and vegetative reflexes
- E. Is traversed by ascending motor pathways and descending sensory pathways

72. The cerebellum:

- A. Is shaped like a butterfly
- B. Has a median part called vermis
- C. Together with the bulb and the pons, it delimits the cavity of the third ventricle
- D. Is connected to the bulb by the superior cerebellar peduncles
- E. Is connected to the mesencephalon by the superior cerebellar peduncles

73. The diencephalon:

- A. Is situated posterior to the cerebellum
- B. Is situated posterior to the cerebral trunk
- C. Is situated superior to the mesencephalon
- D. Is a component part of the encephalon
- E. Its centre contains the ependymal canal

74. The thalamus:

- A. Belongs to the diencephalon
- B. Is situated at the base of the diencephalon under the hypothalamus
- C. Is situated under the corpus callosum
- D. Represents a point of obligatory synaptic gap for the olfactory and visual channels
- E. Regulates the states of sleep and wakefulness

75. The hypothalamus:

- A. Has extensive connections to the paleocortex
- B. Has extensive connections to the limbic system
- C. Is situated superior to the thalamus
- D. Represents a relay for all sensory functions
- E. Has vascular connections to the adenohypophysis

76. The hypothalamus integrates, regulates and coordinates:

- A. The endocrine secretion
- B. Thermoregulation
- C. The sleep and wakefulness rhythm
- D. Digestion, through the hunger centres in the brain
- E. All behavioural acts

77. The cerebral hemispheres:

- A. Represent the largest part of the central nervous system
- B. Are interconnected by the medial longitudinal fissure of the brain
- C. Contain the lateral first and second ventricles
- D. Have three facets
- E. All the above

78. The superior nervous activity consists of processes which underlie the following:

- A. Learning
- B. Memory
- C. Thought
- D. Creation
- E. Instinctive behaviour

79. The cerebral cortex:

- A. Is the outermost layer for the integration of the activity of the nervous system
- B. Contains the paleocortex and the neocortex
- C. Lies on the surface of the cerebellar hemispheres
- D. Consists of white matter
- E. Consists of grey matter

80. The limbic system:

- A. Has extensive connections to the hypothalamus
- B. Contains the olfactory bulbs
- C. Has extensive connections to the neocortex
- D. Is a C-shaped structure around the diencephalon
- E. Contains the hippocampus

81. The neocortex:

- A. Is made up of six cellular layers
- B. Is the site of affective-emotional psychic processes
- C. Is the site of superior psychic processes
- D. Contains the olfactory bulb
- E. Is made up of two cellular layers

82. The neocortex is involved in:

- A. Superior psychic processes
- B. Primary protection of olfactory sensitivity
- C. Complex perception of the environment
- D. Memory-based processes
- E. Primary protection of the sense of taste

83. The olfactory region is located in:

- A. The occipital lobe
- B. The lateral part of the frontal lobe
- C. The medial part of the frontal lobe
- D. The medial part of the temporal lobe
- E. In the parietal lobe

84. The gustatory area is located in:

- A. The inferior part of the postcentral gyrus
- B. In the occipital lobe
- C. In the limbic lobe
- D. In the calcarine sulcus
- E. In the posterior part of the temporal gyrus

85. The primary visual area is located in:

- A. The temporal lobe
- B. The limbic lobe
- C. The occipital lobe
- D. The parietal lobe
- E. The frontal lobe

86. The primary auditory area is located in:

- A. The limbic system
- B. The frontal lobe
- C. The inferior temporal gyrus
- D. The superior temporal gyrus
- E. The calcarine sulcus

87. In the heart, sympathetic stimulation produces:

- A. An increase of frequency
- B. A decrease of frequency
- C. An increase of the contraction force
- D. A decrease of the contraction force
- E. No effect

88. The stimulation of the autonomic sympathetic nervous system produces:

- A. Decreased gastric motility
- B. Accelerated heart rate
- C. Stimulation of respiration and bronchoconstriction
- D. Aqueous salivary secretion
- E. Increased intestinal motility and secretion

89. The autonomic parasympathetic nervous system:

- A. Consists of ganglia located in the paravertebral chains
- B. Consists of ganglia located very close to the spinal cord marrow
- C. Produces, in most cases, effects contrary to the sympathetic system
- D. Its chemical mediator is myoglobin
- E. Its chemical mediator is acetylcholine

90. The stimulation of the autonomic parasympathetic nervous system produces:

- A. Relaxation of the sphincters of the gastrointestinal tract (in most cases)
- B. Contraction of the detrusor muscle
- C. Increase in the exocrine secretion of the pancreas
- D. Dilation in some vascular territories
- E. Constriction of the pupil

31.D

32.AD

33. A
34. B
35. A
36. BCDE
37. ACDE
38. AD
39. ABCD
40. CDE
41. AB
42. BCE
43. BDE
44. ACE
45. C
46. CDE
47. BDE
48. AE
49. AB
50. ABCD
51. E
52. E
53. B
54. AC
55. BCD
56. ABCD
57. AB
58. ABCD
59. BC
60. BD
61. CD
62. E
63. CD
64. D
65. BCD
66. AC
67. AD
68. ADE
69. CE
70. ABCDE
71. BD
72. AB
73. CD
74. ACE
75. ABE
76. ABCD
77. E
78. ABCD
79. ABE
80. ABDE
81. AC
82. ACD
83. D
84. A
85. C
86. D
87. AC
88. AB
89. CE

Chapter III

ANALYZERS

91. Analyzers are morphofunctional systems which carry out:

- A. The quantitative analysis at bulbar level of external stimuli which act on the receptors
- B. The qualitative analysis at bulbar level of external stimuli which act on the receptors
- C. The quantitative analysis at cortical level of external stimuli which act on the receptors
- D. The qualitative analysis at bulbar level of internal stimuli which act on the receptors
- E. The qualitative analysis at cortical level of external stimuli which act on the receptors

92. Each analyzer consists of:

- A. 2 segments
- B. 3 segments
- C. 4 segments
- D. 5 segments
- E. 6 segments

93. The peripheral segment of analyzers:

- A. Is a specialised formation
- B. Transforms stimuli into specific sensations
- C. Can perceive a certain energy form from the internal environment as a stimulus
- D. Is made up of ascending pathways
- E. Can perceive a certain energy form from the external environment as a stimulus

94. The intermediate segment of analyzers:

- A. Can perceive a certain energy form from the external environment as a stimulus
- B. Is also called the conductive part
- C. Is also called the receptor
- D. Is formed by the ascending pathways
- E. Is formed by the descending pathways

95. The central segment of the analyzers:

- A. Transforms stimuli into specific sensations
- B. Transforms stimuli into unspecific sensations
- C. Is formed by the ascending pathways
- D. Is represented by areas of the cerebral cortex
- E. Is represented by areas of the cerebellar cortex

96. Which of the following structures are located in the skin:

- A. Ruffini corpuscles
- B. Vater-Pacini corpuscles
- C. Krause corpuscles
- D. Meissner corpuscles
- E. Only Ruffini and Vater-Pacini corpuscles

97. The epidermis has:

- A. A superficial germinal layer
- B. A superficial cornified layer
- C. A deep germinal layer
- D. A deep cornified layer
- E. Blood vessels

98. The dermis:

- A. Is made up of loose connective tissue
- B. Is a thick connective layer
- C. Has a superficial cornified layer
- D. Has dermal papillae in its reticular layer
- E. Is supplied through osmosis from the intracellular fluid

99. The dermal papillae:

- A. Are located in the reticular layer
- B. Look like fingerlike projections
- C. Are more apparent on the surface of the fingers
- D. Form elevations called papillary ridges
- E. Are located in the epidermis

100. The hypodermis:

- A. Contains the Vater-Pacini corpuscles
- B. Contains dermal papillae
- C. Is a pluri-stratified keratinized epithelium
- D. Is made up of loose connective tissue
- E. Contains the glomeruli of the sweat glands

101. The cutaneous receptors:

- A. Are located in the skin
- B. Are located in the muscles
- C. Make possible movement control
- D. Are optical receptors
- E. Are olfactory receptors

102. The tactile receptors:

- A. Perceive pressure (the deep ones)
- B. Are located in the dermis
- C. Are located in the epidermis
- D. Are more numerous in the areas of the skin covered with hair
- E. Are more numerous in the areas of the skin without hair

103. Vater-Pacini corpuscles:

- A. Are rapidly adapting
- B. Detect vibration
- C. Were also considered receptors of cold
- D. Perceive touch
- E. Are located in the upper part of the dermis

104. Thermal receptors:

- A. Perceive touch
- B. Are free nerve endings small in diameter
- C. Are myelinated free nerve endings
- D. Are unmyelinated free nerve endings
- E. Belong to the category of mechanoreceptors

105. The following are considered warmth receptors:

- A. Pacini corpuscles
- B. Krause corpuscles
- C. Merkel discs
- D. Golgi-Mazzoni corpuscles
- E. Ruffini corpuscles

106. Pain receptors:

- A. Decrease the intensity of the sensation if the stimulus persists
- B. Are stimulated by mechanical factors
- C. Are stimulated by thermal factors
- D. Adapt very little or not at all in the presence of stimuli
- E. Are mainly free nerve endings

107. The neurotendinous Golgi corpuscles are:

- A. Located among the smooth muscle fibres
- B. Located among the skeletal muscle fibres
- C. Located at the muscle-tendon junction
- D. Identical to those located in the skin
- E. Located in the periosteum

108. The neuromuscular spindle is:

- A. A network of bagged autonomic nerve fibres
- B. Made up of 5-10 intrafusal fibres
- C. Disseminated among smooth muscle fibres
- D. Disseminated among striated muscle fibres
- E. Disseminated among tendinous muscle fibres

109. The olfactory receptors are located:

- A. In a special area of the buccal mucosa
- B. In the posterosuperior part of the nasal fossae
- C. In a special area of the labial mucosa
- D. In the inferior nasal conchae
- E. In the posteroinferior part of the nasal fossae

110. The four fundamental tastes are perceived as follows:

- A. Sweetness – on the margins of the tongue
- B. Saltiness – on the anterior part of the tongue
- C. Sourness – on the tip of the tongue
- D. Bitterness – on the tip of the tongue
- E. Bitterness – on the back of the tongue

111. The taste buds:

- A. Have an ovoid shape
- B. Are located in the fungiform papillae in the mucous membrane of the tongue
- C. Are located in the filiform papillae
- D. Are chemically stimulated
- E. Contain olfactory cells in their structure

112. The external coat of the eyeball is made up of:

- A. The choroid
- B. The cornea
- C. The lens
- D. The retina
- E. The sclera

113. The cornea:

- A. Is transparent
- B. Does not have blood vessels
- C. Is part of the *tunica media*
- D. Is opaque
- E. Contains several nerve fibres

114. The *tunica media* of the eyeball is made up of:

- A. The sclera
- B. The choroid
- C. The cornea
- D. Ciliary body
- E. The iris

115. The ciliary body:

- A. Has an aperture in its middle called pupil
- B. Is located immediately before the ora serrata
- C. Is a part of the external layer of the eyeball
- D. Is a part of the internal layer of the eyeball
- E. Is a diaphragm on the anterior face of the lens

116. The iris:

- A. Contains the ciliary muscle in its structure
- B. Is a part of the *tunica media*
- C. Acts like a diaphragm
- D. Has an aperture in its middle called pupil
- E. Regulates the quantity of light that reaches the cornea

117. The macula lutea:

- A. Is located alongside the visual axis
- B. Is located anterior to ora serrata
- C. Does not have photosensitive elements
- D. Has more cone cells than rods
- E. Has a concave area in its centre called fovea centralis

118. The rods of the retina:

- A. Contain 3 types of visual pigments
- B. Their number is around 6-7 million
- C. Are adapted for nocturnal vision
- D. Their number is about 125 million
- E. Are responsible for perceiving the colour of objects

119. The cone cells of the retina:

- A. Are absent in the fovea centralis
- B. Their number is around 6-7 million
- C. Are adapted for nocturnal vision
- D. Contain 3 types of visual pigments
- E. Are more numerous towards the periphery of the retina

120. Refractive transmission media are represented by:

- A. The lens
- B. The choroid
- C. The cornea
- D. The aqueous humour
- E. The vitreous humour

121. The anterior chamber of the eyeball is located between:

- A. The lens and the macula
- B. The lens and the ciliary body
- C. The lens and the retina
- D. The sclera and the choroid
- E. The iris and the cornea

122. The lens:

- A. Has a biconvex shape
- B. Is opaque
- C. Is located between the iris and the vitreous body
- D. Contains blood vessels
- E. Is located in a vitreous chamber

123. The acoustic analyzer perceives:

- A. Sound waves repeated in a certain sequence
- B. Sounds
- C. Noises
- D. Information about the position of the body
- E. Information about the spatial movement of the body

124. The vestibular analyzer:

- A. Provides information about noise
- B. Provides information about the position of the body
- C. Provides information about the spatial movement of the body
- D. Triggers postural reflexes
- E. Triggers gesture reflexes

125. The external ear contains:

- A. The internal auditory meatus
- B. The external auditory meatus
- C. The membranous labyrinth
- D. The bony labyrinth
- E. The auricula

126. 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. Equalizes the pressure on both faces of the eardrum

127. The organ of Corti lies on the following membrane:

- A. Basal
- B. Basilar
- C. Reticular
- D. Tectorial
- E. Tympanic

128. The endolymph is:

- A. Contained in the tympanic and vestibular cavity walls
- B. Contained in the cochlear canal
- C. Contained in the membranous labyrinth
- D. A fluid secreted by the choroid plexuses
- E. A fluid whose pressure variations determine the basilar membrane to vibrate

129. The auditory cells:

- A. Are located beneath the support cells
- B. Are located above the support cells
- C. Their basal pole has auditory cilia
- D. Their apical pole has auditory cilia
- E. Are located in the membranous semicircular canals

130. The acoustic receptors are located in:

- A. The internal ear
- B. The utricula
- C. Corti's organ
- D. The bony semicircular canals
- E. The saccule

91. CE

92. B

93. ACE

94. BD

95. AD

96. ABCD

97. BC

98. B

99. BCD

100. ADE

101. A

102. ABE

103. AB

104. BD

105. E

106. BCDE

107. C

108. BD

109. B

110. BE

111. ABD

112. BE

- 113. ABE
- 114. BDE
- 115. B
- 116. BCD
- 117. ADE
- 118. CD
- 119. BD
- 120. ACDE
- 121. E
- 122. AC
- 123. ABC
- 124. BCDE
- 125. BE
- 126. BCE
- 127. B
- 128. BCE
- 129. BD
- 130. AC

Chapter IV

THE ENDOCRINE GLANDS

131. The glands of internal secretion:

- A. Are made up of secretory epithelia
- B. Produce active substances called hormones
- C. Discharge secretion products directly into the blood
- D. Produce chemical substances which act at the place of synthesis
- E. All the above

132. Hormones:

- A. Are produced by the endocrine glands
- B. Are unspecific chemical substances
- C. Affect targets that are far from the place of synthesis
- D. Produce particular effects
- E. Are released into the bloodstream

133. The endocrine function of the kidney is to secrete:

- A. Glucocorticoids
- B. Adrenaline
- C. Erythropoietin
- D. Urine
- E. Insulin

134. What is the main role of endocrine glands?

- A. To coordinate the activity of different organs using nervous pathways
- B. To ensure the growth and development of the human body only after puberty has set in
- C. To ensure the locomotion of the body
- D. To determine the appearance of sexual characteristics before puberty
- E. To regulate cell metabolism

135. The adenohipophysis is made up of:

- A. The anterior lobe
- B. The intermediate lobe
- C. The posterior lobe
- D. The neurohypophysis
- E. The epiphysis

136. The hypophyseal portal system ensures the following connections:

- A. Nervous – between the anterior hypothalamus and neurohypophysis
- B. Vascular – between the median hypothalamus and the posterior lobe of the hypophysis
- C. Vascular – between the median hypothalamus and adenohypophysis
- D. Vascular – between the posterior hypothalamus and neurohypophysis
- E. None of the above

137. Which of the glandular tropic hormones are secreted by the adenohypophysis?

- A. ACTH
- B. TSH
- C. FSH
- D. LH
- E. Oxytocin

138. TSH stimulates:

- A. The growth and development of muscles
- B. The growth and development of the viscera
- C. The growth and development of the brain
- D. Chondrogenesis at the level of diaphysis – epiphysis growth cartilage
- E. Long bone growth

139. Prolactin stimulates:

- A. The production of milk by the mammary gland
- B. The contraction of the smooth muscle of the pregnant uterus
- C. The increase of the force and rate of cardiac contractions
- D. Pigmentogenesis
- E. Protein catabolism

140. Vasopressin:

- A. Increases the optional absorption of water in the kidney glomeruli
- B. Induces the decrease of the urine output
- C. Induces urine concentration
- D. Decreases the secretion of all endocrine glands
- E. In large quantities, determines vasoconstriction

141. Oxytocin :

- A. Is secreted by the neurohypophysis
- B. Is being circulated by the anterior hypothalamus
- C. Stimulates the contraction of the smooth muscle in the non-pregnant uterus
- D. Stimulates the contraction of myoepithelial cells that surround the mammary gland alveolae
- E. None of the above

142. Glucocorticoids are represented by:

- A. Aldosterone
- B. Cortisone
- C. Cortisol
- D. Corticotropin
- E. Sexo-steroids

143. Cortisol triggers the following effect(s):

- A. Glycogenesis in the liver
- B. Gluconeogenesis in the adipose tissue
- C. Muscular glycogenesis
- D. Increase in the intestinal glucose uptake
- E. None of the above

144. Lipolysis is enhanced by the following hormones:

- A. Prolactin
- B. Cortisol

- C. Adrenaline
- D. Glucagon
- E. Insulin

145. The main cardiovascular effects of noradrenaline are:

- A. Bradycardia, vasoconstriction and hypertension
- B. Bradycardia, vasodilation and hypertension
- C. Tachycardia, vasodilation and hypotension
- D. Tachycardia, vasodilation and hypertension
- E. Tachycardia, vasoconstriction and hypertension

146. The metabolic effects of the medulla-suprarenal hormones include:

- A. Production of glycogenolysis
- B. Pupil dilation
- C. Mobilisation of fat reserves
- D. Catabolism of fatty acids
- E. Contraction of striated fibres of the hair erector muscles

147. The thyroid is located:

- A. In the anterior neck
- B. In the posterior neck
- C. Behind the trachea
- D. In the thorax
- E. In the abdomen

148. The hormones secreted by the thyroid follicles include:

- A. Calcitonin
- B. Thyroxine
- C. Triiodothyronine
- D. Thyroglobulin
- E. PTH

149. Thyroid hormones have the following effect(s) on the nervous system structure:

- A. Stimulate neuron differentiation
- B. Stimulate the ascending reticular activating system
- C. Stimulate the normal development of synapses and myelination
- D. Induce EEG alterations
- E. Trigger cortical alert, anxiety and fear

150. Thyroid hormones have the following effect(s) on the cardiovascular system:

- A. Cause bradycardia
- B. Increase the heart's force of contraction
- C. Increase response promptness through the myotatic reflex
- D. Increase the rate of heart contractions
- E. Induce vasodilation

151. Calcitonin:

- A. Inhibits calcium levels
- B. Increases blood calcium
- C. Is secreted in hypocalcemic conditions
- D. Mobilizes bone calcium
- E. Is secreted by specialised cells in the thyroid and parathyroid glands

152. The parathormone is secreted by:

- A. The suprarenal
- B. The parafollicular cells in the thyroid

- C. The „C” cells in the parathyroid glands
- D. The main cells in the parathyroid glands
- E. Epiphysis

153. The parathormone has the following effects:

- A. Activates osteoclasts
- B. Increases intestinal calcium absorption
- C. Stimulates calcium tubular reabsorption in the distal nephron
- D. Inhibits renal tubular reabsorption of inorganic phosphates
- E. Conjugated effects: hypocalcemia and hyperphosphatemia

154. Glucagon is secreted by:

- A. The acinar cells of the pancreas
- B. The „C” cells of the parathyroid glands
- C. The α cells of the Langerhans islets in the endocrine pancreas
- D. The β of the Langerhans islets in the endocrine pancreas
- E. The cells of the thymus

155. Insulin is secreted by:

- A. The α cells of the Langerhans islets
- B. The β cells of the Langerhans islets
- C. The cells of the duodenal wall
- D. The cells of the stomach wall
- E. The cells of the colon wall

156. Insulin has the following effect(s) on muscles:

- A. Increases glucose transport in the cell
- B. Increases amino acid uptake
- C. Decreases gluconeogenesis
- D. Increases glycolysis and glycogen synthesis
- E. Increases protein synthesis

157. The metabolic effects of insulin in the liver include:

- A. Increased proteolysis
- B. Increased glycogenesis
- C. Decreased gluconeogenesis
- D. Increased lipolysis
- E. Decreased lipogenesis

158. The metabolic effects of insulin in the adipose tissue include:

- A. Decreases lipolysis
- B. Decreases glucose transport
- C. Increases triglyceride and fatty acid synthesis
- D. Increases lipogenetic enzyme synthesis
- E. Increases glycerol synthesis

159. In the carbohydrate metabolism, glucagon induces:

- A. Glycogenolysis
- B. Glycogenesis
- C. Gluconeogenesis
- D. Hypoglycemia
- E. Hyperglycemia

160. The pineal gland secretes:

- A. MSH
- B. Melanin
- C. Melatonin
- D. Vasotocin
- E. Oxytocin

- 131. ABC
- 132. ACDE
- 133. C
- 134. E
- 135. AB
- 136. C
- 137. ABCD
- 138. ABDE
- 139. A
- 140. BCE
- 141. D
- 142. BC
- 143. E
- 144. BCD
- 145. E
- 146. ACD
- 147. A
- 148. BC
- 149. AC
- 150. BDE
- 151. ACE
- 152. D
- 153. ABCD
- 154. C
- 155. B
- 156. ABDE
- 157. BCE
- 158. ACDE
- 159. ACE
- 160. CD

Chapter V

MOVEMENT

161. The skeleton:

- A. Represents the totality of the bones arranged in an anatomical position
- B. Contains long bones such as the ribs and the clavicle
- C. Contains long bones in which height and width are predominant
- D. Contains short bones in which all three dimensions are approximately equal
- E. Contains wide bones in which only the width is predominant

162. The long bones are represented by:

- A. Sternum
- B. Humerus
- C. Ribs
- D. Femur
- E. Scapula

163. The wide bones:

- A. Are a component of the bony thorax
- B. Consist of bones in which width and thickness are predominant
- C. Are a component of the neurocranium
- D. Are a component of the bony pelvis
- E. Are also called sesamoid bones

164. The short bones:

- A. Can be found in the skeleton of the limbs
- B. Participate in the formation of the forearm
- C. Are represented by the carpal bones, which together with the metatarsals and phalanges form the hand skeleton
- D. Participate in the formation of the foot skeleton
- E. Are represented by phalanges

165. The head skeleton:

- A. Consists of the neurocranium
- B. Consists of the viscerocranium
- C. Contains the encephalon
- D. Contains the peripheral segments of certain sensory organs
- E. Contains the initial segments of the respiratory and digestive systems

166. The neurocranium:

- A. Is a part of the head skeleton
- B. Consists of two paired bones: frontal and parietal
- C. Consists of 7 bones
- D. Contains the cerebral hemispheres
- E. Consists of 6 unpaired bones

167. The following bones participate in the formation of the neurocranium:

- A. Temporal
- B. Maxillary
- C. Parietal
- D. Zygomatic
- E. Cerebral

168. The viscerocranium:

- A. Is a part of the neck skeleton
- B. Consists of two paired bones
- C. Consists of six unpaired bones
- D. Consists of two unpaired bones
- E. Contains the first segment of the respiratory apparatus

169. The paired bones that participate in the formation of the viscerocranium are:

- A. Palatine
- B. Maxillary
- C. Vomer
- D. Lacrimal
- E. Nasal

170. The skeleton of the trunk consists of:

- A. The vertebral column
- B. Ribs
- C. The clavicle

- D. The scapula
- E. The bony pelvis

171. The vertebral column:

- A. Is located in the median and anterior part of the body
- B. Represents the axial skeleton
- C. Plays a role in the protection of the cerebral trunk
- D. Has a triple role
- E. Consists of five regions: cervical, thoracic, dorsal, lumbar and sacral

172. The vertebral column consists of:

- A. Five regions: cervical, thoracic, dorsal, sacral and coccygeal
- B. Four regions: cervical, dorsal, sacral and coccygeal
- C. Specific vertebrae whose vertebral body is located on their posterior part
- D. Vertebrae having a vertebral foramen which, superimposed, form the vertebral canal
- E. Vertebrae which, superimposed, delimit the intervertebral apertures

173. The vertebral canal is delimited by:

- A. The superimposition of two vertebral pedicles
- B. Two vascular pedicles
- C. The vertebral body (anterior segment)
- D. The vertebral arch (posterior segment)
- E. All the above

174. The sacral bone:

- A. Results from the fusion of the five lumbar vertebrae
- B. Results from the fusion of the five sacral vertebrae
- C. Is a median, unpaired, wedge-shaped bone
- D. Is a median, paired, trapezoid bone
- E. On each of its lateral surfaces, it has an articular surface for the coxal bone

175. The coccyx:

- A. Is a part of the vertebral column
- B. Results from the fusion of the three coccygeal bones
- C. Results from the fusion of the 4-5 coccygeal vertebrae
- D. Articulates on its inferior part with the sacrum
- E. Articulates on its superior part with the sacrum

176. The sternum:

- A. Is a wide bone located on the posterior face of the thorax
- B. Is a wide bone, situated anteriorly on the median line of the thorax
- C. Consists of the manubrium, body and the vermiform appendix
- D. Consists of the manubrium, body and the xyphoid appendix which remains permanently cartilaginous
- E. Has a segment that remains cartilaginous until around the age of 40

177. The ribs:

- A. Form 12 pairs
- B. Posteriorly, have a bony arch which articulates with the cervical vertebrae
- C. Posteriorly, have a bony arch which articulates with the thoracic vertebrae
- D. Posteriorly, have a bony arch which articulates with the lumbar vertebrae
- E. Posteriorly, have a bony arch which articulates with the sternum

178. The skeleton of the upper limbs consists of:

- A. The skeleton of the scapular belt
- B. The pelvic girdle
- C. The skeleton of the free upper limb

- D. The skeleton of the arm, forearm and hand
- E. A girdle that connects the upper limb to the thorax

179. The clavicle:

- A. Is a wide bone
- B. Is shaped like an „S” lying horizontally
- C. Articulates laterally with the scapula
- D. Articulates laterally with the manubrium of the sternum
- E. Articulates medially with the scapula

180. The scapula:

- A. Is a wide bone
- B. Has a quadrangular shape
- C. Its base points upwards
- D. Its base points downwards
- E. Articulates laterally with the radius

181. The skeleton of the arm:

- A. Consists of the humerus
- B. Consists of the femur
- C. Is formed by desmal (endoconnective) ossification
- D. Is formed by endochondral ossification
- E. Consists of a bone which articulates inferiorly with the radius and the ulna

182. The skeleton of the forearm consists of:

- A. Two long bones: the tibia and the fibula
- B. Two long bones: the radius and the ulna
- C. A bone situated laterally, called ulna
- D. A bone situated medially, called radius
- E. Two bones which articulate proximally with the humerus

183. The skeleton of the hand:

- A. Belongs to the skeleton of the upper limbs
- B. Consists of 8 carpal bones, 5 metacarpals and 14 phalanges
- C. Consists of 8 carpal bones, 5 metacarpals and 15 phalanges
- D. Contains 14 phalanges (finger I has only 2 phalanges – the hallux)
- E. Contains 14 phalanges (finger I has only 2 phalanges)

184. The skeleton of the lower limb consists of:

- A. The scapular girdle
- B. The skeleton of the lower limb proper
- C. A girdle that connects the lower limb to the skeleton of the thorax
- D. The pelvic girdle formed by the coxal bones
- E. The bones of the thigh, shin and foot

185. The coxal bone:

- A. Results from the fusion of three bones
- B. Articulates posteriorly with the sacrum
- C. Forms the pelvic girdle which connects the skeleton of the free upper limb to the trunk skeleton
- D. Forms the pelvic girdle which connects the skeleton of the lower limb proper to the trunk skeleton
- E. Together with the sacrum, forms the bony pelvis

186. The skeleton of the thigh:

- A. Consists of the femur
- B. Contains the longest bone of the body
- C. Contains a bone which, at its proximal end, articulates with the coxal bone
- D. Contains a bone which, at its distal end, articulates with the patella
- E. Contains a distal end which articulates anteriorly with the tibia

187. The femur:

- A. Is a part of the thigh skeleton

- B. Articulates distally with the tibia and the fibula
- C. Articulates proximally with the sacrum
- D. Has a proximal epiphysis which articulates anteriorly with the patella
- E. Has a distal epiphysis which articulates anteriorly with the patella

188. The skeleton of the shin:

- A. Consists of two bones
- B. Consists of three bones
- C. Has a larger bone situated medially
- D. Has a larger bone situated laterally
- E. Has a triangular bone called patella

189. The patella:

- A. Is a triangular bone with its base downwards
- B. Is a part of the knee joint
- C. Is a triangular bone with its base upwards
- D. On its posterior face, articulates with the proximal epiphysis of the femur
- E. Is attached to the tendon of the quadriceps femoris

190. The wide bones contain:

- A. Hematogenous marrow, in children
- B. Yellow marrow, in children
- C. Hematogenous marrow, in adults
- D. Yellow marrow, in adults
- E. Red marrow, in adults

191. The organic matrix of bone consists of:

- A. 80-95% collagen fibres
- B. 90-95% fundamental substance
- C. Ossein
- D. Collagen fibres which improve fracture resistance
- E. Collagen fibres which extend along the lines of tensile strength

192. Joints:

- A. Are structures connecting bones
- B. Are structures constructed to allow movement
- C. Are divided according to their range of movement
- D. Are called synarthroses, when they permit little or no mobility
- E. Are called diarthroses, when they have a limited range of movement

193. The muscle system:

- A. Consists of muscles which represent the active movement organs
- B. Consists of muscles which represent passive movement organs
- C. Carry out active movement via the skeletal muscles
- D. Carry out active movement via smooth muscles
- E. Consists of muscles having various shapes

194. Skeletal muscles:

- A. Have a larger central part called the belly of the muscle
- B. Have two white-ivory coloured extremities
- C. Have two extremities called tendons
- D. Have two extremities that contain cartilaginous tissue
- E. Contain tendons that contain fibrous tissue

195. Skeletal muscles:

- A. Consist of striated fibres ensheathed in endomysium
- B. Are innervated only via the somatic nervous system
- C. Are innervated only via the the autonomic nervous system

- D. Have a sensory innervation via the axons of somatomotor neurons
- E. Have a somatic motor innervation via the dendrites of sensory neurons

196. Skeletal muscles are grouped as follows:

- A. Muscles of the head
- B. Muscles of the neck
- C. Muscles of the trunk
- D. Posterolateral muscles of the thorax
- E. Anterodorsal muscles of the abdomen

197. The muscles of the head consist of:

- A. Mimic muscles
- B. Muscles which, when contract, determine different facial expressions
- C. The masseters
- D. Muscles involved in mastication
- E. All the above

198. The sternocleidomastoid muscle:

- A. Belongs to the muscles of the neck
- B. Is inserted to the sternum
- C. Wrinkles the skin of the neck
- D. Is innervated by the IX accessory nerve
- E. Is innervated by a cranial nerve which has two roots: bulbar and spinal

199. The muscles of the trunk are grouped as follows:

- A. Muscles of the back and neck
- B. Anterolateral muscles of the thorax
- C. Posterolateral muscles of the thorax
- D. Anterolateral muscles of the abdomen
- E. Posterolateral muscles of the abdomen

200. The diaphragm:

- A. Belongs to the muscles of the trunk
- B. Participates in the delimitation of the splenic lounge
- C. Separates the thoracic cavity from the pelvic cavity
- D. Separates the thoracic cavity from the abdominal cavity
- E. Extends at the bottom of the thoracic cavity

201. The muscles of the upper limb are grouped as follows:

- A. Muscles of the shoulder
- B. Muscles of the humerus
- C. Muscles of the forearm
- D. Muscles of the palm
- E. Muscles of the fingers

202. The arm has:

- A. Anterior and posterior muscles
- B. Anterior muscles that participate in the flexion of the hand in connection to the arm
- C. Posterior muscles that participate in the extension of the hand in connection to the forearm
- D. Muscles: biceps brachii, brachialis, coracobrachialis
- E. In the posterior compartment: the triceps brachii muscle

203. The anterior muscles of the forearm consist of:

- A. Flexors of the forearm and hand
- B. Pronator muscles of the hand
- C. Flexors of the fingers (some of them)
- D. Extensors of the fingers
- E. Extensors of the hand

204. The hand:

- A. Has muscles only on its palmar surface

- B. Has muscles only on the volar surface
- C. Has muscles in the interdigital spaces
- D. Has a simple muscular apparatus
- E. Has a complex muscular apparatus

205. The muscles of the lower limb are grouped as follows:

- A. Muscles of the pelvis
- B. Muscles of the thigh
- C. Muscles of the shin
- D. Muscles of the foot
- E. All the above

206. The muscles of the foot are located in:

- A. The dorsal compartment
- B. The plantar compartment
- C. The volar compartment
- D. The palmar compartment
- E. All the above

207. Skeletal muscles are responsible for:

- A. Posture
- B. Voluntary movement
- C. Balance
- D. Tonus
- E. Mimic

208. Muscles have the following property/properties:

- A. Contractility
- B. Excitability
- C. Extensibility
- D. Elasticity
- E. Muscle tonus

209. Contractility:

- A. Is a property characteristic for the muscle
- B. Is a special property characteristic for muscle cells
- C. Is a general characteristic of body cells
- D. Is the ability of a muscle of generating tension between its ends
- E. Is the ability of a muscle of becoming longer

210. The sarcomere:

- A. Is enclosed between two Z-lines
- B. Is enclosed between two bright H-zones
- C. Is enclosed between two dark H-zones
- D. Represents the anatomical basis of excitability
- E. Is the morphofunctional unit of a myofibril

161. ABD

162. BD

163. ACD

164. AD

165. ABCDE

166. AD

167. C

168. DE

169. ABDE
170. ABE
171. BD
172. DE
173. CD
174. BCE
175. ACE
176. BE
177. AC
178. CDE
179. BC
180. AC
181. ADE
182. BE
183. ABE
184. BDE
185. ABDE
186. ABC
187. AE
188. AC
189. BCE
190. ACE
191. CDE
192. ABCD
193. ACE
194. ABCE
195. A
196. ABC
197. E
198. ABE
199. ABD
200. ABDE
201. AC
202. ADE
203. ABC
204. ABE
205. E
206. AB
207. ABCDE
208. ABCDE
209. ABD
210. AE

Chapter VI

DIGESTION AND ABSORPTION

211. The digestive system consists of:

- A. Organs responsible for the digestion and subsequently the elimination of food
- B. Rectum, where the undigested food is absorbed
- C. Several parts: mouth, pharynx, oesophagus, stomach, small bowel, large bowel
- D. Organs having different functions in digestion, food absorption and waste elimination
- E. Glands: salivary, liver, pancreas

212. The oral cavity contains:

- A. The teeth
- B. The nasopharynx
- C. The laryngopharynx
- D. The lingual frenulum
- E. The tongue

213. The tongue:

- A. Is also a digestive organ
- B. Is located in the oropharynx
- C. Contains taste papillae (filiform, calyciform, fungiform and foliate)
- D. Carries out multiple roles
- E. Acts as a sensory organ

214. The pharynx:

- A. Is a segment of the digestive tract
- B. Communicates in its upper part with the oral cavity
- C. Is delimited superiorly by the hard palate
- D. It is part of both the digestive and the respiratory systems
- E. Contains a cavity

215. The oesophagus:

- A. Is located between the pharynx and the stomach
- B. Is a segment of the pharynx
- C. Conducts the bolus towards the pharynx
- D. Communicates with the stomach through the cardia
- E. All the above

216. The stomach:

- A. Is a dilated part of the digestive tract
- B. Is located in the abdominal cavity
- C. Has an upper opening, the pylorus, through which it communicates with the oesophagus
- D. Has an inferior opening, cardia, through which it communicates with the duodenum
- E. Secretes approximately 3-4 L of gastric secretions/day

217. The small bowel:

- A. Is the segment of the digestive tract between the stomach and the colon
- B. Extends between the stomach and the caecum
- C. In the duodenal mucosa, it contains Brünner's glands
- D. In the duodenum, it contains the opening of the cystic canal
- E. Has three segments: duodenum, jejunum-ileum and caecum

218. The duodenum:

- A. Is the first segment of the small bowel

- B. Is a C-shaped structure which envelops the tail of the pancreas
- C. Is located between the stomach and the ileum
- D. Contains the openings of the choledoch and of the main pancreatic ducts
- E. Extends from the pyloric sphincter to the left colic flexure

219. The intestinal villi:

- A. Are specialised structures of the small bowel mucosa
- B. Have a small surface area
- C. Present a surface pavementous epithelium whose cells contain secretory cells
- D. Contain an arteriole and a venule
- E. Their base contain intestinal crypts

220. The large bowel:

- A. Is a continuation of the duodenum
- B. Ends with the anal canal
- C. Has three segments
- D. Is located in the abdominal and pelvic cavities
- E. Is subdivided into caecum, vermiform appendix and colon

221. The colon:

- A. Is a continuation of the caecum
- B. Is continuous with the rectum
- C. Has several segments
- D. Produces no digestive enzymes
- E. Is a part of the small bowel

222. The rectum:

- A. Is a continuation of the descending colon
- B. Ends with the anal canal
- C. Its walls contain smooth muscle fibres
- D. Is a subdivision of the colon
- E. Is the terminal part of the large bowel

223. The accessory digestive glands are represented by:

- A. Salivary glands
- B. Pyloric glands
- C. Liver
- D. Endocrine pancreas
- E. Brünner's glands

224. The salivary glands:

- A. Secrete saliva
- B. Consist of the submandibular, sublingual and parathyroid glands
- C. Are innervated by the somatic nervous system
- D. Secrete their products into the oral cavity
- E. Are involved in oral digestion

225. The liver:

- A. Is the largest accessory digestive gland
- B. Is projected in the right hypochondrium and the epigastrium
- C. Is located on the right side of the body, above the diaphragm
- D. Lies to the right of the stomach
- E. Is delimited inferiorly by the diaphragm

226. The vascularisation of the liver:

- A. Is a dual one
- B. Is supplied by the hepatic artery which is a branch of the celiac trunk
- C. Is supplied by the portal vein which brings nutrients absorbed intestinally
- D. Is supplied by the celiac trunk which is a branch of the hepatic artery
- E. All the above

227. The gallbladder:

- A. Is located inside the liver
- B. Stores bile during digestion
- C. Stores bile between meals
- D. Belongs to the biliary system
- E. Is a continuation of the cystic canal

228. The pancreas:

- A. Is an accessory digestive gland
- B. Is an exclusively exocrine gland
- C. Has three segments: head, body and tail
- D. Contains only exocrine and ductal cells
- E. Has two functions: exocrine and endocrine

229. Mastication plays the following role(s):

- A. Fragments digestive enzymes
- B. Forms, lubricates and hardens the bolus
- C. Releases odorous substances
- D. Activates digestive enzymes
- E. Stimulates gustatory receptors

230. The saliva contains:

- A. 95% water and 5% dry residue
- B. K^+ ions in a lesser concentration than blood plasma
- C. Ca^{2+} and Mg^{2+} ions in a higher concentration than blood plasma
- D. Lysosomes with bactericidal function
- E. An enzyme that hydrolyzes organic amides converting them to maltose

231. Deglutition:

- A. Refers to all enzymatic processes that ensure the transportation of the bolus from the oral cavity to the stomach
- B. Is a reflex action
- C. Is a three-phase process
- D. Is a three-phase process, the first phase being a voluntary one
- E. Is a three-phase process that takes place in the following order: pharyngeal, oral and oesophageal

232. Gastric secretion:

- A. Continues the digestive processes initiated in the oesophageal lumen
- B. Is a yellowish fluid
- C. In adults, its pH ranges between 1 – 2.5
- D. Contains water (90%) and dry residue (10%)
- E. Is secreted in an amount of approximately 2 L/day

233. The secretion of hydrochloric acid is:

- A. Stimulated by acetylcholine
- B. Inhibited by acetylcholine
- C. Stimulated by secretin and gastrin
- D. Inhibited by secretin and gastrin
- E. Stimulated by somatostatin released from the neurons of the enteric nervous system

234. The exocrine cells of the pancreas:

- A. Are arranged in follicles
- B. Are arranged in acini
- C. Secrete daily (through the ductal cells) 1200-1500 ml pancreatic juice
- D. Secrete four types of digestive enzymes
- E. Secrete a large quantity of HCO_3^-

235. The ductal cells of the exocrine pancreas:

- A. Secrete four types of digestive enzymes
- B. Secrete pancreatic juice
- C. Through their activity, they are involved in neutralising gastric acid
- D. Are arranged in acini
- E. Through their activity, they regulate pH in the upper digestive tract

236. Bile:

- A. Is the exocrine secretion product of hepatocytes and ductal cells bordering the biliary ducts
- B. Is secreted continuously
- C. Is stored in the gallbladder during digestion
- D. Is released in the duodenum through the action of cholecystokinin
- E. Is necessary for the digestion and absorption of carbohydrates

237. The secretion of the small bowel:

- A. Is regulated via nervous and humoral mechanisms
- B. Is stimulated by the sympathetic nervous system
- C. Is stimulated by the parasympathetic nervous system
- D. Contains mucus which protects the intestinal mucosa
- E. Contains, in the intestinal lumen, several enzymes

238. The daily necessary diet of an adult should contain:

- A. Approximately 50-60% carbohydrate intake
- B. 250-800 g/day carbohydrates: sucrose, lactose, starch and cellulose
- C. Proteins: approximately 0.5-0.7 g/Kg bodyweight
- D. Water, electrolytes, vitamins and minerals
- E. Between 25 and 160 g lipids

239. The intestinal absorption of vitamins:

- A. Takes place in the proximal intestine via mycelia (water-soluble vitamins)
- B. Takes place in the form of mycelia (vitamins A, D, K, E)
- C. Takes place proximally, in the small bowel, by facilitated transport or by Na⁺-dependent active transport system (water-soluble vitamins)
- D. Takes place proximally, in the small bowel, by Na⁺-dependent active transport system (fat-soluble vitamins)
- E. None of the above

240. Intestinal iron absorption:

- A. Is stimulated by vitamin C
- B. Takes place in the ileum and jejunum
- C. Is facilitated by gastric HCl
- D. Is facilitated indirectly by the G cells contained in the pyloric glands
- E. Takes place only in the stomach

241. The gastric juices necessary for digestion are:

- A. The pancreatic juice for the digestion of maltose, saccharose and lactose
- B. The pancreatic juice for the digestion of proteins degraded by pepsin
- C. Bile, which turns unemulsified lipids into emulsified lipids
- D. Bile, for the digestion of maltose, saccharose and lactose
- E. Pancreatic and intestinal juice for the digestion of emulsified lipids

242. The end-products of digestion are:

- A. Protein amino acids
- B. Protein oligopeptides
- C. Monosaccharides, especially glucose in carbohydrates
- D. Fatty acids and glycerol contained in fats
- E. Disaccharides, especially maltose and saccharose contained in carbohydrates

243. The gastric juice:

- A. Contains pepsin
- B. Contains ptyalin
- C. Contains 99% water and 1% dry residue
- D. Contains hydrochloric acid
- E. Contains mucin which protects the gastric mucosa

244. Bile:

- A. Is secreted by the small bowel
- B. Is secreted by hepatocytes

- C. Contains biliary pigments
- D. Contains a complex enzymatic apparatus
- E. Between meals, is stored in the gallbladder

245. The following process(es) take place in the oral cavity:

- A. Absorption of alcohol, water, chlorides
- B. Deglutition
- C. Mastication
- D. Chemical digestion of food by ptyalin
- E. Food ingestion

211. CDE

212. ADE

213. ADE

214. ADE

215. AD

216. AB

217. BC

218. AD

219. ADE

220. BCD

221. ABCD

222. BCE

223. AC

224. ADE

225. ABD

226. ABC

227. CDE

228. ACE

229. CE

230. D

231. BCD

232. CE

233. AC

234. BCDE

235. BCE

236. ABD

237. ACD

238. ABCDE

239. BC

240. ABCD

241. CE

242. ACD

243. ACDE

244. BCE

245. CDE

Chapter VII

CIRCULATION

246. The total blood volume of a typical 80 kg adult is:

- A. 4.7 litres
- B. 5.1 litres
- C. 5.6 litres
- D. 6.4 litres
- E. 7.2 litres

247. Which of the following statement(s) about erythrocytes is/are true?

- A. Are mononucleated cells
- B. Lack a cell nucleus
- C. Are involved in O₂ and CO₂ transportation
- D. Are involved in haemostasis
- E. Are involved in the acid-base balance

248. Erythrocytes:

- A. Have a nucleus and mitochondria
- B. Women have approximately 4.5 million/mm³
- C. Men have approximately 5 million/mm³
- D. Can develop pseudopods
- E. Have the capacity for diapedesis

249. The main function of leukocytes lies in their participation in:

- A. O₂ and CO₂ transportation
- B. Maintenance of acid-base balance
- C. The body's defence reaction
- D. Haemostasis
- E. None of the above

250. The antigen:

- A. Is a micromolecular substance external to the body
- B. May be proteic or lipid, external to the body
- C. May be carried by pathogenous agents
- D. Can exist as a free antigen
- E. In the body, it triggers antibody production

251. Antibodies:

- A. Are plasma proteins
- B. Are plasma lipids
- C. Belong to the class of gamma globulins
- D. Once produced, neutralise the antigen
- E. Once produced, destroy the antigen

252. Naturally acquired immunity is:

- A. Active, by transplacental antibody transfer
- B. Passive, following a disease
- C. Developed by administration of toxins and gamma-globulins
- D. Developed through vaccination
- E. None of the above

253. Primary immune response:

- A. Is triggered by a first contact with the antigen
- B. Requires a subsequent contact with the same antigen
- C. Is developed with the help of lymphocytes with immunological memory
- D. Is a non-specific defence reaction
- E. Is a specific defence reaction

254. The figurative elements of the blood involved in haemostasis are:

- A. Neutrophils
- B. Basophils
- C. Lymphocytes
- D. Blood platelets
- E. Thrombocytes

255. Plasma consists of:

- A. 90% water
- B. 1% organic substances, mainly proteins
- C. Proteins: albumins, globulins, fibrinogen
- D. Inorganic substances (Na^+ , K^+ , Ca^{2+} , Mg^{2+} , Cl^- , HCO_3^-)
- E. Organic substances (Na^+ , K^+ , Ca^{2+} , Mg^{2+} , Cl^- , HCO_3^-)

256. According to the rule of agglutinin exclusion with homologous agglutigen, individuals may carry:

- A. A agglutigen on the red blood cells and α agglutinin in the plasma
- B. A agglutinin on the red blood cells and β agglutigen in the plasma
- C. B agglutigen on the red blood cells and β agglutinin in the plasma
- D. B agglutigen on the red blood cells and α agglutinin in the plasma
- E. B agglutinin on the red blood cells and β agglutigen in the plasma

257. Type O (I) blood group:

- A. Has A and B agglutinogens on the erythrocytes
- B. Has α and β agglutinins in the plasma
- C. Can receive blood from group A (II)
- D. Can donate blood to group A (II)
- E. Can donate blood to group B (III)

258. Type A (II) blood group :

- A. Has A agglutigen in the plasma
- B. Has β agglutinin in the plasma
- C. Can donate blood to group 0 (I)
- D. Can donate blood to group B (III)
- E. Can donate blood to group AB (IV)

259. Type B (III) blood group:

- A. Has B agglutigen on the erythrocytes
- B. Has α agglutinin in the plasma
- C. Can donate blood to group 0 (I)
- D. Can donate blood to group B (III)
- E. Can donate blood to group AB (IV)

260. Type AB (IV) blood group:

- A. Has A and B agglutigen on the erythrocytes
- B. Has α and β agglutinins in the plasma
- C. Can receive blood from group 0 (I)
- D. Can receive blood from group A (II)
- E. Can receive blood from group B (III)

261. D antigen:

- A. Is present in individuals with positive Rh

- B. Is present in 15% of the world population
- C. Is present in 85% of the world population
- D. Determines the natural synthesis of anti-Rh agglutinins
- E. Is an agglutinin

262. Primary haemostasis consists of the following processes:

- A. Vasoconstriction of the wall of the damaged vessel
- B. Vasodilation of the wall of the damaged vessel, as a reflex and humoral process
- C. Platelet plug formation
- D. Platelet aggregation
- E. Transformation of platelets into molecular glue

263. Pulmonary circulation:

- A. Begins in the left ventricle, through the trunk of the pulmonary artery
- B. Begins in the right ventricle, through the trunk of the pulmonary artery
- C. Carries deoxygenated blood to the lung
- D. Collects oxygenated blood via the pulmonary veins (one for each lung)
- E. Ends in the right atrium

264. Systemic circulation:

- A. Begins in the left ventricle, through the aorta
- B. Begins in the right ventricle, through the aorta
- C. Carries deoxygenated blood from the heart to organs and tissues through the two venae cavae
- D. Carries deoxygenated blood from organs and tissues to the heart through the aorta
- E. Carries deoxygenated blood from organs and tissues to the right atrium

265. The aortic system consists of:

- A. The aorta and its branches
- B. The ascending aorta originating in the left ventricle
- C. The arch of the aorta which gives off the two coronary arteries
- D. The descending aorta which subdivides into the arch of the aorta and the thoracic aorta
- E. The common iliac arteries, the terminal branches of the abdominal aorta

266. The common carotid arteries:

- A. Originate in the ascending aorta
- B. Ascend to the neck up to the superior margin of the thyroid cartilage
- C. Bifurcate into the right and left carotid arteries
- D. In the bifurcation, they have a dilated area called carotid sinus
- E. In the bifurcation, they have a dilated area rich in receptors

267. The branches of the descending thoracic aorta are:

- A. Parietal
- B. Visceral - bronchial
- C. Visceral – pericardial
- D. Visceral – oesophageal
- E. All the above

268. The branches of the coeliac trunk are:

- A. Splenic
- B. Left gastric
- C. Hepatic
- D. Suprarenal
- E. Renal

269. The transverse colon is vascularised by:

- A. Left gastric artery
- B. Superior mesenteric artery

- C. Inferior mesenteric artery
- D. External iliac artery
- E. Internal iliac artery

270. The rectum is vascularised by:

- A. Superior mesenteric artery
- B. Inferior mesenteric artery
- C. Parietal branches of the internal iliac artery
- D. Visceral branches of the internal iliac artery
- E. External iliac artery

271. The superior vena cava collects, via the azygos system, venous blood from:

- A. Upper limbs
- B. Oesophagus
- C. Bronchia
- D. Pericardium
- E. Diaphragm

272. The venous system of the upper limbs consists of:

- A. Only a deep venous system
- B. Only a superficial venous system
- C. Deep veins that have the same name as the accompanying arteries
- D. Superficial veins that have the same name as the accompanying arteries
- E. Subcutaneous veins which are also the site of intravenous injections

273. The inferior vena cava collects blood from:

- A. The walls of the pelvis
- B. Kidneys
- C. Suprarenal glands
- D. Testicles and ovaries
- E. Liver

274. The portal vein is formed by the confluence of the following veins:

- A. Splenic
- B. Hepatic
- C. Renal
- D. Superior mesenteric
- E. Inferior mesenteric

275. The capillaries of the lymphatic system:

- A. Form terminal networks
- B. Have the same structure as blood capillaries
- C. Are less widespread
- D. Can be found in all organs and tissues
- E. By their confluence, they form blood vessels

276. Lymph nodes have the following functions:

- A. Produce lymphocytes
- B. Produce monocytes
- C. Form antibodies
- D. Prevent certain foreign substances from entering the body
- E. Represent a barrier that prevents infections from spreading

277. The thoracic canal:

- A. Is the smallest lymph collector
- B. Begins with a dilated part, called cisterna chyli
- C. Crosses the diaphragm
- D. Opens at the confluence of the right internal jugular vein and the right subclavicular vein
- E. Collects lymph from the right upper quadrant of the body

278. The spleen is an organ which:

- A. Produces lymphocytes
- B. Destroys young red blood cells
- C. Is involved in iron metabolism
- D. Stores 200-300 g blood
- E. Sends the blood deposit into circulation, in the case of haemorrhages or physical effort

279. The atrioventricular valves:

- A. Are called mitral and tricuspid
- B. Are called aortic and pulmonary
- C. Open during ventricular systole
- D. Open during ventricular diastole
- E. Close during ventricular systole

280. The aortic and pulmonary valves:

- A. Are atrioventricular valves
- B. Are also called semilunar valves
- C. Open during diastole, letting blood to pass from atria into ventricles
- D. Close during diastole, preventing the return of blood from atria into ventricles
- E. Close during diastole, preventing the return of blood from arteries into ventricles

281. Cardiac output represents:

- A. The volume of blood pumped by each ventricle during each systole
- B. The multiple of the stroke volume and heart rate
- C. A parameter that assesses the heart's pump activity
- D. An average resting cardiac output of about 5 L/min
- E. A parameter that increases 30 times during sustained physical effort

282. Heart rate:

- A. Has a resting normal value of 70-75 beats/min
- B. Is subjected to nervous control
- C. Increases by parasympathetic stimulation
- D. Decreases by sympathetic stimulation
- E. Decreases by vagal stimulation

283. Excitability is the property of the cardiac muscle cell to:

- A. React to a stimulus during contraction
- B. Self-stimulate
- C. React to a stimulus through a propagated action potential
- D. Propagate excitation to all its fibres
- E. Develop tension between the ends of its fibres

284. The sinus rhythm corresponds to:

- A. The normal beating of the heart
- B. The cardiac activity conducted by the sinoatrial node
- C. The cardiac activity conducted by the atrioventricular node
- D. An average discharge rate of 70-80 beats/min
- E. The activity of the main cardiac automatism centre

285. Conductivity:

- A. Is a property of the contractile atrial myocardium
- B. Is a property of the contractile ventricular myocardium
- C. Is achieved at a steady rate for all myocardial fibres
- D. Is achieved at different rates depending on the type of myocardial fibre
- E. Is ten times greater in the bundle of Hiss than in the Purkinje tissue

286. A cardiac cycle:

- A. Consists of a systole and a diastole

- B. Takes 0.8 seconds at a rate of 75 beats/minute
- C. Its duration is inversely proportional to the heart rate
- D. Begins with the ventricular systole
- E. All the above

287. Contractility:

- A. Determines a noticeable alteration of the diameter of the atrial lumen
- B. Is carried out by the striated muscles in the arterial wall
- C. Permits a subtle control of the cardiac output towards various organs and tissues
- D. Contributes to the continuous flow of the blood through arteries
- E. Depends on the activity of sympathetic nerves

288. Arterial pressure is directly proportional to:

- A. Cardiac output
- B. Peripheral resistance
- C. Volemia
- D. The volume of extracellular fluids
- E. Blood viscosity

289. The velocity of blood flow in the two venae cavae is:

- A. 0.3 - 0.4 mm/sec
- B. 0 -1 mm/ sec
- C. 0.5 mm/sec
- D. 500 mm/sec
- E. 100 mm/sec

290. Blood:

- A. Is a type of connective tissue with fundamental fluid substance, called plasma
- B. Contains 90% water and 10% dry residue
- C. Is a component of the internal environment
- D. Consists of erythrocytes, leukocytes and thrombocytes
- E. Consists of red blood cells, white blood cells and platelets

246. D

247. BCE

248. BC

249. C

250. CDE

251. ACDE

252. E

253. AE

254. DE

255. ACD

256. D

257. BDE

258. BE

259. ABDE

260. ACDE

261. ACE

262. ACDE

263. BC

264. AE

265. ABE

- 266. BDE
- 267. E
- 268. ABC
- 269. BC
- 270. BD
- 271. BCDE
- 272. CE
- 273. ABCDE
- 274. ADE
- 275. ABD
- 276. ABCDE
- 277. BC
- 278. ACDE
- 279. ADE
- 280. BE
- 281. BCD
- 282. ABE
- 283. C
- 284. ABDE
- 285. ABD
- 286. ABC
- 287. ACE
- 288. ABCDE
- 289. E
- 290. ACDE

Chapter VIII

RESPIRATION

291. The respiratory system is represented by:

- A. Nasal cavity
- B. Pharynx
- C. Larynx
- D. Trachea
- E. Bronchi

292. The trachea:

- A. Is a tubular organ with a length of 10-12 mm
- B. Continues the larynx until the C4 cervical vertebra
- C. Continues the larynx until the T4 thoracic vertebra
- D. Is divided into two main bronchi
- E. Is divided into two bronchi which enter the lung through the hilum

293. The lungs:

- A. Are the main respiratory organs
- B. Are located in the thoracic cavity
- C. Have a total capacity of 5000 mL air, without individual variations
- D. Are wrapped in a serous membrane called pleura, which has a parietal sheet that covers the lung
- E. Are wrapped in a serous membrane called pleura, which has a visceral sheet that lines the thoracic walls

294. The alveolar capillary membrane:

- A. Is also called respiratory membrane
- B. Is formed by the walls of the alveolar ducts and the capillaries surrounding them
- C. Consists of the alveolar walls and a poor capillary network

- D. Ensures gas exchanges between alveolar ducts and blood
- E. Ensures gas exchanges between alveoli and blood

295. Functionally, respiration represents:

- A. Pulmonary ventilation
- B. Diffusion of O₂ and CO₂ between pulmonary alveoli and blood
- C. O₂ transportation through the blood and body fluids from the cells
- D. CO₂ transportation through the blood and body fluids to the cells
- E. Regulation of ventilation

296. The diaphragm:

- A. Is a smooth muscle
- B. Is a striated muscle
- C. Separates the thoracic cavity from the abdominal cavity
- D. During contraction, shortens the thoracic cavity
- E. During contraction, increases the anteroposterior diameter of the thoracic cavity

297. In relaxed breathing, inspiration is determined by:

- A. Contraction of the diaphragm
- B. Elevation of the rib cage
- C. Increase of about 20% in the anteroposterior diameter of the thoracic cavity versus relaxed expiration
- D. Elongation of the thoracic cavity
- E. Contraction of the rectus abdominis muscles

298. The muscles involved in inspiration are:

- A. Muscles of the neck
- B. Rectus abdominis muscles
- C. Diaphragm
- D. Muscles which elevate the ribs
- E. Muscles which lower the ribs

299. The alveoli contain:

- A. Air
- B. A thin layer of tensioactive fluid, on the internal alveolar surface
- C. A thick layer of tensioactive fluid, on the internal alveolar surface
- D. Forces of surface tension
- E. Surfactant

300. Tidal volume represents:

- A. The air volume inspired during normal breathing
- B. The air volume expired during normal breathing
- C. An average of 500 mL air
- D. A component of the inspiratory reserve volume
- E. A component of the expiratory reserve volume

301. After forced expiration, the lung contains:

- A. Inspiratory reserve volume
- B. Expiratory reserve volume
- C. Tidal volume
- D. Residual volume
- E. Vital capacity

302. The total lung capacity represents the sum of:

- A. Tidal volume plus inspiratory reserve volume

- B. Inspiratory reserve volume plus residual volume
- C. Inspiratory reserve volume plus expiratory reserve volume
- D. Residual volume plus vital capacity
- E. None of the above

303. Alveolar ventilation:

- A. Has an average value of 4.5-5 L/min
- B. Includes the ventilation of the dead space
- C. Is a major factor that determines the partial pressures of O₂ and CO₂ in the alveoli
- D. Is the multiple of the tidal volume and the respiratory rate
- E. Has an equal value to respiratory minute volume

304. Respiratory gas transfer through the alveolocapillary membrane is achieved:

- A. By diffusion
- B. By passive transport
- C. From an area with higher pressure to an area with lower pressure
- D. From an area with lower pressure to an area with higher pressure
- E. From alveoli to the blood in the case of CO₂ and the opposite in the case of O₂

305. The oxygen diffused through the alveolocapillary membrane:

- A. Induces a decrease of alveolar pressure of O₂ to 47 mm Hg
- B. Initially dissolves in the plasma and then diffuses in the red blood cells
- C. Initially diffuses in the red blood cells and subsequently in the plasma
- D. Once in the red blood cells, transforms deoxyhaemoglobin into oxyhaemoglobin
- E. Once in the tissues, diffuses in the interstitia and hence in the cells

306. Carbon dioxide:

- A. Has a diffusion gradient representing only one tenth of that of O₂
- B. Diffuses 25 times faster than O₂
- C. Is 25 times more soluble in body fluids than O₂
- D. Balances its partial pressures, alveolar and blood pressure, in 0.50 sec
- E. Its partial pressure in the alveolar air is 46 mm Hg

307. Blood oxygen transport is:

- A. Carried out by carbohaemoglobin
- B. 1.5% physically dissolved in plasma
- C. 98.5% oxyhaemoglobin
- D. A reversible combination with iron ions in the haemoglobin
- E. A reversible combination with the terminal NH₂ groups of the haemoglobin

308. The partial pressure of tissue O₂:

- A. Is 100 mm Hg
- B. Is 40 mm Hg
- C. Decreases rapidly, also decreasing haemoglobin capacity to bind O₂
- D. Decreases rapidly, also decreasing the dissociation of oxyhaemoglobin
- E. Induces the decrease of O₂ haemoglobin saturation with 50-70%

309. Blood carbon dioxide:

- A. Is the final result of tissue oxidation processes
- B. Diffuses from cells into interstitia and hence into blood capillaries
- C. Determines an increase with 5-6 mm Hg of its partial pressure in the arterial blood versus venous blood
- D. Has only two forms of transport
- E. Has three forms of transport

310. The respiratory system consists of:

- A. The oral cavity
- B. The trachea
- C. The bronchi
- D. The lungs
- E. The buccal cavity

291. ABCDE

292. CDE

293. AB

294. AE

295. ABE

296. BC

297. ABD

298. ACD

299. ABDE

300. ABC

301. D

302. D

303. AC

304. ABC

305. BDE

306. AC

307. BCD

308. BCE

309. ABE

310. BCD

Chapter IX

EXCRETION

311. The kidneys:

- A. Are located in the abdominal cavity
- B. Are located in the pelvic cavity
- C. Are situated on either side of the vertebral column, in the thoracic region
- D. Are situated on either side of the vertebral column, in the lumbar region
- E. Belong to the excretory system

312. Structurally, a kidney consists of:

- A. Renal capsule
- B. Cortex
- C. Medulla
- D. Two renal arteries
- E. Two renal veins

313. Bowman's capsule:

- A. Represents the initial part of a nephron
- B. Is a cup-like structure with triple walls
- C. Contains the renal glomerulus, formed of 50 capillaries
- D. The renal glomerulus is reached by the efferent arteriole
- E. The renal glomerulus is reached by the afferent arteriole

314. The renal medulla:

- A. Contains a Malpighi pyramid
- B. Contains bulbar pyramids
- C. Its section has triangular formations with their bases towards the cortex
- D. Its section has triangular formations with their bases towards the minor calyx
- E. Contains structures called Malpighi's pyramids whose tips are called renal papillae

315. The renal cortex:

- A. Is located towards the periphery of the kidney
- B. Is located in the central part of the kidney
- C. Contains renal glomeruli
- D. Contains renal papillae
- E. Is wrapped in the renal capsule

316. The nephron:

- A. Is entirely located in the renal cortex
- B. Has two parts: the renal corpuscle and the tubular system
- C. Has two parts: the renal corpuscle and a glomerular system
- D. Contains, in its initial part, the glomerular capsule
- E. Contains, in its initial part, the renal glomerulus

317. The loop of Henle:

- A. Is situated in the continuation of the distal convoluted tubule
- B. Is situated in the continuation of the proximal convoluted tubule
- C. Is continued with the distal convoluted tubule
- D. Is always long in the cortical glomeruli
- E. Is a part of the renal corpuscle

318. The collecting ducts:

- A. Collect urine from several distal convoluted tubules
- B. Cross Malpighi's pyramids
- C. Open into the minor calyces
- D. Open into the major calyces
- E. Open directly in the renal pelvis

319. The arterial vascularisation of the kidneys is provided by:

- A. Renal arteries, superior and inferior
- B. Renal arteries, left and right
- C. Parietal branches of the abdominal aorta
- D. Visceral branches of the abdominal aorta
- E. Branches of the coeliac trunk

320. The venous blood of the kidney is collected by:

- A. The splenic vein
- B. The renal vein, which opens in the superior vena cava
- C. The renal vein, which opens in the inferior vena cava
- D. The renal artery
- E. The suprarenal vein

321. The renal pelvis:

- A. Is also called suprarenal pelvis
- B. Is a small, thin tubule, in the continuation of the major calyces
- C. Its tip points towards the kidney and its base points towards the ureter
- D. Is formed by the convergence of the major calyces
- E. Its tip is continuous with the ureter

322. The ureters:

- A. Are striated muscle tubes
- B. Are smooth muscle tubes
- C. Are small, short tubes, in the continuation of the renal pelvises
- D. Descend to the gallbladder
- E. Have an ascending trajectory

323. Cortical nephrons:

- A. Represent 85% of the total number of nephrons
- B. Represent 15% of the total number of nephrons
- C. Their glomerulus is located in the renal cortex
- D. Have a long loop of Henle
- E. Have a short loop of Henle

324. Juxtamedular nephrons:

- A. Represent 85% of the total number of nephrons
- B. Their glomerulus is located at the junction of the capsule and renal medulla
- C. Their glomerulus is located in the renal capsule
- D. Their glomerulus is located in the renal medulla
- E. Their glomerulus is located at the junction of the renal cortex and renal medulla

325. The renal blood flow:

- A. Is approximately 1200 mL/min
- B. Is approximately 420 mL/100 mg tissue/min
- C. Represents 80% of the resting cardiac output, in basal conditions
- D. Represents 20% of the resting cardiac output, in basal conditions
- E. Represents 20% of the blood volume

326. The following product(s) remain(s) after glomerular filtration:

- A. Final urine
- B. Glomerular filtrate
- C. Primary urine
- D. A fluid that filtrates from Bowman's capsule into the glomerular capillaries
- E. A fluid that filtrates from the glomerular capillaries into Bowman's capsule

327. The glomerular filtrate:

- A. Is a plasma containing significant quantities of proteins
- B. Is a plasma rich in proteins
- C. Has almost the same composition as the fluid filtrating from the interstitia at the arterial end of the capillaries
- D. Has almost the same composition as the fluid filtrating into the interstitia at the venous end of the capillaries
- E. None of the above

328. Tubular reabsorption:

- A. Extracts most of the useful substances from the primary urine
- B. Extracts small quantities of glomerular filtrate compounds
- C. Is achieved by the cells of the uriniferous tubules
- D. Its underlying layer results from the morphological adaptation of uriniferous tubules
- E. Its underlying layer results from the biochemical adaptation of uriniferous tubules

329. Tubular reabsorption of water:

- A. Is carried out in all the parts of the nephron, but in different proportions
- B. Is carried out in all the parts of the nephron, in identical proportions
- C. Is carried out only in certain parts of the nephron
- D. Is obligatory in the distal convoluted tubules
- E. Is obligatory in the collecting ducts

330. Active tubular transport:

- A. Is selective
- B. Uses the metabolic activity of the nephron
- C. Uses energy and oxygen
- D. Uses the chemical energy of ATP
- E. Is carried out in accordance with the concentration gradient

331. Tubular secretion:

- A. Is the main method for cleaning plasma of usable nitrogen catabolites
- B. Is the main method for recovering non-usable nitrogen catabolites
- C. Completes the process of elimination of certain acid and toxic substances

- D. Completes the process of elimination of certain drugs
- E. Can be carried out over the entire length of a nephron

332. The urethra:

- A. Represents the evacuation segment of the urinary system
- B. The male urethra belongs to both the urinary and to the genital system
- C. The female urethra belongs to both the urinary and to the genital system
- D. Is a duct which in males is longer than in females
- E. Is a duct which in males is shorter than in females

333. The urinary bladder:

- A. Is a solid organ
- B. Is a hollow organ
- C. Its walls are made of smooth muscles
- D. Its walls are made of striated muscles
- E. Consists of two parts

334. The urinary bladder has:

- A. An internal, striated sphincter, also called the sphincter urethrae muscle
- B. An internal sphincter whose natural tonus normally prevents urine from entering the bladder and the urethra
- C. An internal sphincter which prevents the release of urine from the bladder before reaching a critical pressure threshold
- D. An external sphincter, made of smooth muscle, under voluntary control
- E. An external sphincter which can prevent micturition

335. The sympathetic stimulation of the urinary tract induces:

- A. Decrease of urine output
- B. Increase of urine output
- C. Increase of renin secretion
- D. Contraction of the internal urethral sphincter
- E. Relaxation of the internal urethral sphincter

336. The parasympathetic stimulation of the urinary tract induces:

- A. Contraction of the internal urethral sphincter
- B. Relaxation of the internal urethral sphincter
- C. Contraction of the detrusor muscle
- D. Relaxation of the detrusor muscle
- E. None of the above

337. The following statement(s) about the chemical composition of urine is/are true:

- A. Urine contains Na^+ , K^+ , Mg^{2+} salts
- B. Urine contains Na^+ , K^+ , Mn^{2+} salts
- C. Urine contains organic substances: urea, hormones
- D. Urine contains organic substances: urea, red blood cells
- E. Urine contains 95% water and 5% other components

338. Urine:

- A. Is eliminated continuously in the ureters
- B. Is eliminated intermittently in the ureters
- C. Is evacuated intermittently and rhythmically, 4 – 6 times/24 hours
- D. Is evacuated continuously and rhythmically, 4 – 6 times/24 hours
- E. Is evacuated through micturition

339. Urine contains:

- A. 90% water
- B. 95% water
- C. 10% various components
- D. Mineral substances
- E. Organic substances

340. Kidneys eliminate the following endogenous substances from the body:

- A. Drugs

- B. Nitrogen catabolic products
- C. Biliary pigments
- D. Dyes
- E. Ketone bodies

- 311. ADE
- 312. ABC
- 313. ACE
- 314. CE
- 315. ACE
- 316. BDE
- 317. BC
- 318. ABC
- 319. BD
- 320. C
- 321. DE
- 322. B
- 323. ACE
- 324. E
- 325. AD
- 326. BCE
- 327. E
- 328. ACDE
- 329. A
- 330. ACD
- 331. CDE
- 332. ABD
- 333. BCE
- 334. BCE
- 335. AD
- 336. BC
- 337. ACE
- 338. ACE
- 339. BDE
- 340. BCE

Chapter X

METABOLISM

341. Metabolism defines:

- A. Catabolism, which produces energy partially used in the synthesis of ATP from ADP
- B. Anabolism, which decomposes exogenous or endogenous macromolecular substances
- C. Biochemical reactions involved in the storage of energy in macroergic compounds
- D. Energy storage as macroergic compounds
- E. All the above

342. Catabolism defines:

- A. Biochemical reactions which repair used macromolecules of the cell structure
- B. Biochemical reactions which decompose exogenous or endogenous macromolecular substances
- C. Biochemical reactions which produce energy
- D. Biochemical reactions which consume energy
- E. Energy storage in macroergic compounds, such as ATP

343. The role of catabolic processes is to:

- A. Produce energy
- B. Store the energy in ADP
- C. Repair used macromolecules in the cell structure
- D. Ensure the growth and development of the body
- E. Decompose exogenous or endogenous macromolecular substances

344. Anabolism refers to:

- A. The totality of biochemical synthesis reactions
- B. The totality of biochemical breaking-down reactions
- C. Reactions which consume energy
- D. Reactions which produce energy
- E. Reactions which involve energy loss in the form of heat

345. During intermediary metabolism:

- A. The body metabolises endogenous substances, absorbed in the digestive tract
- B. The body metabolises exogenous substances: CO_2 și H_2O
- C. The body produces substances which can be excreted
- D. All the above
- E. None of the above

346. Metabolic reactions are biocatalysed by:

- A. Enzymes of the digestive tract
- B. Cellular enzymes
- C. Hormones
- D. Vitamins
- E. Biogenic amines

347. The main carbohydrates absorbed in the digestive tract are:

- A. Lactic acid
- B. Glucose
- C. Fructose
- D. Starch
- E. Galactose

348. The glucose absorbed in the intestine reaches the liver via:

- A. Blood pathway
- B. Lymphatic pathway
- C. Portal vein
- D. Hepatic artery
- E. Coeliac trunk

349. Carbohydrate metabolism pathways consist of:

- A. Lipogenesis
- B. Tissue oxidation
- C. Glycogenogenesis
- D. Glycolysis
- E. Lipolysis

350. In the liver, glucose can be used as the main energy source through:

- A. Glycogenolysis
- B. Glycolysis in aerobic conditions
- C. Glycogenogenesis
- D. Lipogenesis
- E. Gluconeogenesis

351. Glycogenogenesis:

- A. Is the process of glucose polymerisation and glycogen formation
- B. Is the process of glycogen depolymerisation
- C. Takes place mainly in the liver and muscles

- D. Is stimulated by insulin
- E. Is activated by adrenaline and glucagon

352. Glycogenolysis:

- A. Is the process in which glucose is stored in the form of glycogen
- B. Is the process of glycogen depolymerisation
- C. Is stimulated by insulin
- D. Is activated by adrenaline and glucagon
- E. Is activated by the somatic nervous system

353. Anaerobic glycolysis:

- A. Takes place in the presence of oxygen
- B. Produces lactic acid
- C. Releases the energy stored in two ATP molecules for one molecule of lactic acid
- D. Releases a great quantity of energy, stored in 34 ATP molecules
- E. Has a very low output (3%)

354. Glucose releases energy through:

- A. Glycolysis
- B. Gluconeogenesis
- C. Glycogenogenesis
- D. The pentose phosphate pathway
- E. All the above

355. The following substances are involved in gluconeogenesis:

- A. Aminoacids
- B. Products resulted from protein catabolism
- C. Products resulting from lipid decomposition
- D. Fatty acids
- E. None of the above

356. The normal blood sugar value is:

- A. 0.7-1.0 mg/L
- B. 70-100 mg/L
- C. 70-100 g/100 L
- D. 35-65 mg/100 mL
- E. None of the above

357. Glycaemia:

- A. Represents the concentration of glucose in the blood.
- B. Its normal value is 65-110 mg/dL
- C. Is lowered by insulin which facilitates glucose penetration and uptake in the cell
- D. Is elevated by glucagon which stimulates glycogenolysis and gluconeogenesis
- E. Is lowered by adrenaline which stimulates glyconeogenesis

358. Glycaemia is maintained within relatively normal limits due to certain complex mechanisms which maintain the balance between the processes of:

- A. Glycogenolysis
- B. Glycogenogenesis
- C. Glycolysis
- D. Gluconeogenesis
- E. Lipogenesis

359. The hormones which increase glycaemia by gluconeogenesis stimulation are:

- A. Cortisol
- B. Glucagon
- C. Adrenaline
- D. STH
- E. All the above

360. Glycaemia decreases due to increased glycogen deposits induced by:

- A. Noradrenaline
- B. Insulin

- C. STH
- D. Glucagon
- E. Aldosterone

361. The complete breakdown of one gram of glucose during glycolysis and oxidation releases:

- A. 4.1 cal
- B. 4.1 Kcal
- C. 9.3 cal
- D. 9.3 Kcal
- E. 9.1 Kcal

362. Glycogen:

- A. Is stored mainly in the liver and muscles
- B. Represents an energy reserve of approximately 3,000 kcal
- C. Is mainly mobilised during moderate physical effort
- D. Is mobilised as an energy source when the body is exposed to cold
- E. Is depolymerised under the action of adrenaline

363. Lipogenesis is stimulated by:

- A. Adrenaline and noradrenaline
- B. Cortisol
- C. Insulin
- D. Somatotrophic hormone
- E. Thyroid hormones

364. The following hormones have lipolytic effects:

- A. Cortisol
- B. Somatotrophic
- C. Adrenaline
- D. Noradrenaline
- E. Thyroid hormones – calcitonin

365. Lipids have the following function(s):

- A. Defense of the body
- B. Enzymatic
- C. Energetic
- D. Plastic
- E. Functional

366. The breakdown of one gram of lipids releases:

- A. 4.1 calories
- B. 4.1 Kcal
- C. 9.3 calories
- D. 9.3 Kcal
- E. 9.1 Kcal

367. Protein anabolism is stimulated by:

- A. Insulin
- B. The growth hormone
- C. Testosterone
- D. Estrogens
- E. The autonomic sympathetic nervous system

368. Protein catabolism is stimulated by:

- A. Insulin
- B. Cortisol
- C. Thyroxine
- D. The autonomic parasympathetic nervous system
- E. The autonomic sympathetic nervous system

369. Proteins have the following functional role(s):

- A. Are enzymes which catalyse biochemical reactions
- B. Some of them are hormones, such as cortisol, testosterone, estrogens
- C. Transport various substances in the blood
- D. Transport various substances through the interstitial fluids
- E. Transport various substances through the plasmalemma

370. The burning of one gram of protein in the body releases:

- A. 4.1 calories
- B. 4.1 Kcal
- C. 9.3 calories
- D. 9.3 Kcal
- E. 9.1 Kcal

371. Energy metabolism includes:

- A. Energy exchanges between the body and the environment
- B. The total amount of energy resulting during intermediary metabolism
- C. The use of energy for maintaining the body's vital functions
- D. The use of energy for achieving the body's adaptive reactions
- E. The use of heat in the body's anabolic processes

372. ATP hydrolysis releases energy for:

- A. Muscle contraction
- B. Glandular secretion
- C. Active transmembrane transport
- D. Synthesis and growth
- E. Nervous conduction

373. Basal metabolism:

- A. Is the daily amount of energy consumed by an organism at rest
- B. Is the fixed amount of energy expended to maintain vital functions in an organism
- C. Is approximately 1 kcal/kg/hour
- D. Has a value of 40 kcal/m²/hour
- E. Is determined by indirect calorimetry

374. A balanced food ration should contain:

- A. Energetic substances (carbohydrates and lipids)
- B. Mineral substances
- C. Hormones and enzymes
- D. Plastic substances (proteins)
- E. Substances which cannot be synthesised in the body (vitamins)

375. The hunger centre is located in:

- A. Certain cortical areas of the limbic system
- B. Amygdala
- C. The lateral part of the hypothalamus
- D. The ventro-medial part of the hypothalamus
- E. The superior part of the cerebral trunk

376. The satiety centre is located in:

- A. The lateral part of the hypothalamus
- B. The ventro-medial part of the hypothalamus
- C. The inferior part of the cerebral trunk
- D. Amygdala
- E. Certain cortical areas of the limbic system

377. Which of the following vitamins is/are liposoluble?

- A. Calciferol
- B. Cobalamin
- C. Retinol
- D. Riboflavin
- E. Tocopherol

378. Which of the following vitamins is/are hydrosoluble?

- A. Ascorbic acid
- B. Phylloquinone
- C. Nicotinamide
- D. Pyridoxine
- E. Thiamine

379. Which of the following vitamins is/are anti-haemorrhagic?

- A. Vitamin A
- B. Vitamin B₁
- C. Vitamin C
- D. Vitamin K
- E. Vitamin E

380. Which of the following vitamins is/are involved in haematopoiesis?

- A. Vitamin E
- B. Vitamin B₆
- C. Vitamin B₁₂
- D. Vitamin PP
- E. Vitamin C

381. Which of the following vitamins is/are involved in calcium/phosphorus metabolism?

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

382. Which of the following vitamins influence(s) sight?

- A. Calciferol
- B. Phylloquinone
- C. Nicotinamide
- D. Retinol
- E. Riboflavin

383. Thermoregulation:

- A. Maintains body temperature constant (homeothermia)
- B. Permanently maintains the balance between heat production and heat loss in the body
- C. Is the result of a permanent imbalance between thermolysis and thermogenesis
- D. Maintains an average normal body temperature of de 37°C in humans
- E. Is the result of regulation mechanisms which ensure a permanent balance between thermogenesis and thermolysis

384. Thermogenesis:

- A. Is inversely proportional to the oxygen consumption
- B. Is based on catabolic reactions of cell oxidoreduction
- C. Represents the body's heat loss
- D. The body's thermogenetic gland is considered to be the thyroid
- E. All hormones stimulating oxygen consumption increase thermogenesis

385. Thermolysis:

- A. Represents the body's heat production
- B. Is based mainly on thermal exchange physical mechanisms between the body and the environment
- C. Is the result of the dynamic balance between the body's heat production and heat loss
- D. Is the result of the processes of irradiation, conduction, convection and water evaporation on the body's surface
- E. Represents the body's heat loss

341. ACD

342. BCE
343. AE
344. AC
345. C
346. B
347. BCE
348. AC
349. ABCD
350. B
351. ACD
352. BD
353. BE
354. AD
355. ABCD
356. E
357. ABCD
358. ABCDE
359. AB
360. B
361. B
362. ABCDE
363. C
364. ABCD
365. CDE
366. D
367. ABCD
368. BCE
369. ACDE
370. B
371. ABCD
372. ABCDE
373. BCDE
374. ABDE
375. C
376. B
377. ACE
378. ACDE
379. D
380. C
381. C
382. DE
383. ABDE
384. BDE
385. BDE

Chapter XI

REPRODUCTION

386. The female genital apparatus consists of:
A. Exclusively the vagina
B. A mixed gland – the ovary
C. The reproductive tract
D. The external genitalia
E. An annex gland – the mammary gland

387. The female external genital organs are represented by:

- A. Ovary
- B. The vulva, with its annex structures
- C. The Fallopian tubes
- D. Uterus
- E. Vagina

388. The ovary:

- A. Is a paired organ
- B. Is located in the abdominal cavity
- C. Looks like a flattened sphere
- D. Produces – through its endocrine function – the ova
- E. Secretes hormones: estrogens and progesterone

389. The release of the ovum by ovulation:

- A. Is carried out by the mature follicles
- B. Is carried out by developing follicles
- C. Takes place on the 14th day of the ovarian cycle
- D. Induces the development of *corpus luteum*, which has a secretory role
- E. Induces the development of *corpus albicans*, which has a secretory role

390. The Fallopian tubes:

- A. Belong to the female genital system
- B. Do not open into the abdominal cavity via the uterine ostia
- C. Are two musculo-membranous tubes
- D. Are vascularised by tubal branches of the internal iliac and uterine arteries
- E. Are 15-20 cm long

391. The uterus:

- A. Is a hollow, paired organ
- B. Is located in the pelvic cavity, between the urinary bladder and the rectum
- C. It contains a fundus and a cervix
- D. Gives insertion to the urethra (on its cervical part)
- E. Is pear-shaped, with the wider part pointing downwards

392. Ovulation:

- A. Takes place on the 14th day of the ovarian cycle
- B. Is a consequence of the rupture of the secondary (cavitary) follicle
- C. Is stimulated by FSH
- D. Is stimulated by LH
- E. Is inhibited by LH

393. The internal secretion of the ovary:

- A. Consists in secretion of female sexual hormones
- B. Is stimulated by gonadotropins
- C. Is inhibited by FSH and LH
- D. Is carried out by the cells of the surface epithelium in the walls of the ovarian follicle
- E. Is carried out by the cells of the internal epithelium in the walls of the ovarian follicle

394. The estrogen hormones of the ovary:

- A. Stimulate the development of the mammary glands
- B. Stimulate the occurrence and development of secondary sexual characteristics in females
- C. Support gestation
- D. Induce ovulation
- E. Stimulate female sexual behaviour

395. Progesterone:

- A. Is secreted by the cells in the wall of the ovarian follicle
- B. Is secreted by the *corpus luteum* which is influenced by FSH and prolactin
- C. Supports gestation
- D. Prepares the endometrium for the fixation of the ovum (implantation)

E. During pregnancy, is also secreted by the corticosuprenals and the placenta

396. The male genital system consists of:

- A. Testicles
- B. Vestibular bulbs
- C. Sperm ducts
- D. Annex glands
- E. Spermatozoa

397. The testicle:

- A. Is a paired organ, situated on the median line
- B. Is shaped like a sagittally flattened ovoid
- C. Weighs about 25 g
- D. Is the male genital gland
- E. Is located in the scrotum

398. The male genital gland:

- A. Has a double function: exocrine and endocrine
- B. Secretes androgenic hormones in the convoluted seminiferous tubules
- C. Form interstitial cells (the spermatozoa)
- D. Is the site of spermatogenesis
- E. Is a median, unpaired organ

399. The prostate:

- A. Is vascularised by a branch of the external iliac artery
- B. Is an exocrine glandular organ
- C. Produces a secretion which participates in sperm formation
- D. Is located under the urinary bladder, around the ureter
- E. Is an annex gland of the male genital system

400. Testosterone:

- A. Is the main androgenic hormone
- B. Stimulates the growth of male genitalia
- C. Is a hormone with protein structure
- D. Maintains the tonus of the ovogenetic epithelium
- E. In hyposecretion, leads to early puberty

386. BCDE

387. B

388. AE

389. ACD

390. AC

391. BC

392. AD

393. ABE

394. ABE

395. ACDE

396. ACD

397. CDE

398. AD

399. BCE

400. AB

REFERENCES

Gray's Anatomy for Students. Richard Drake, A. Wayne Vogl, Adam W. M. Mitchell. Churchill Livingstone, 2004. **ISBN** 978-0-443-06612-2

Molecular Biology of the Cell, Fourth Edition. Alberts B., Johnson A., Lewis J., Raff M., Roberts K., Walter P. Garland Science Publishing House, 2002, ISBN 0-8153-3218-1

Physiology: Pre Test self-assessment and review. Seventh Edition. Eileen M. Mulligan. McGraw-Hill, 1993. ISBN: 0070519978, 9780070519978

MULTIPLE CHOICE QUESTIONS IN HUMAN PHYSIOLOGY: with Answers and Comments. Ian C. Roddie, D.Sc., M.D., F.R.C.P.I., and William F. M. Wallace, B.Sc., M.D., M.R.C.P. London: Lloyd-Luke, 1971.

Campbell Biology, Ninth Edition, Jane B. Reece , Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Robert B. Jackson, Copyright © 2011, 2008, 2005 Pearson Education, Inc., publishing as Pearson Benjamin Cummings, 1301 Sansome St., San Francisco, CA 94111

