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## DEPARTMENT: PRECLINICAL SCIENCES

## **DISCIPLINE: ANATOMY**

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## **TOPICS AND REFERENCES**

1. The circulatory system (apparatus) - the heart (pericardium, external conformation of the heart, internal conformation of the heart, structure of the heart, cord vascularization, differential characteristics of the heart in domestic species, brachiocephalic trunk and pulmonary trunk).

2. Central nervous system - spinal cord and encephalon (myelencephalon; metencephalon - pons, cerebellum, fourth ventricle; mesencephalon - cerebral peduncles, quadrigeminal tubercles/colliculi; third ventricle; telencephalon - external conformation, internal conformation, meninges).

3. Lymphatic system - lymphoid follicles, lymph nodes, hemal lymph nodes, spleen, thymus, cloacal bursa, lymphatic vessels, systematics and topography of lymphocenters, particularities of lymphocenters in leporids, particularities of lymphocenters in birds).

4. Analyzers - visual analyzer, corneous formations of the skin (hoof, hooves)

5. Cutaneous projection of the organs of the digestive tract in domestic mammals (cutaneous projection of the organs of the digestive tract in equines, cattle, sheep and goats, pigs, canids and leporidae).

6. Topography of skin sensitive areas (topography of sensitive areas in equines, cattle, sheep, canids).

Total pages - 100 (text and images)

Bibliography:

Predoi G., Belu C., Georgescu, B., Dumitrescu I. – Anatomy of domestic animals (angiology, neurology, sense organs). Ed. Ceres, Bucureşti, 2013 (pag. 7-18, 19-39, 90-123, 167-183)
Predoi G. - Topographic anatomy of domestic animals. Ed. Ceres, Bucureşti, 2012 (pag. 122-132, 133-143)

## QUESTIONNAIRE

Questions with five possible answers, of which only one is correct.

- White line: a. is marked by a sensitive/dermal sheet; b. marks the boundary between the sole and the frog; c. marks on the solear face the place where the hoof wall meets the sole; d. delimits externally the area where the horseshoes can be fixed; e. represents the ventral projection of the corneous tubes and intertubular tissue.
- 2. Perioplic burelet: a. generates corneous tubes from the wall of the hoof; b. is situated dorsally to the cutidural burelet; c. is in continuity with the podophyllous tissue; d. it is continued at the extremities with the velvety tissue of the frog; e. is the external structure of the hoof.
- 3. The cutidural burelet: a. it is disposed at the upper edge of the perioplic burelet; b. generates the corneous tubes and the intertubular tissue; c. generates the keraphillum (*Lamellae epidermales*); d. protrudes under the skin at the coronary edge of the wall; e. produces the keratin of the sole.

- 4. Complementary fibrocartilages: a. have the outer face completely covered with skin; b. they have no continuity with the bulb of the chusion; c. come in contact through the deep face with the lateral and medial recessuses of the distal interphalangeal joint; d. they are not present in equines; e. are generated by the keratogenic membrane.
- 5. During the operation of the inflammed complementary fibrocartilage of the hoof: a. the distal interphalangeal joint must be in forced extension; b. distal interphalangeal joint must be in flexion; c. the extension or flexion of the joint does not influence the surgical work; d. the nervectomy of the anterior digital nerve should be performed; e. the bulb of the chusion must also be removed.
- 6. The ligament of ergot is located on the lateral sides of: a. postsesamophalangian fascia; b. fascia lata; c. post-carpal fascia; d. fascia of the chusion; e. fascia of the frog.
- The bars of the hoof are on the lateral margin of: a. branches of the frog; b. heel bulbs; c. the tip of the frog; d. complementary fibrocartilage; e. continuation of the wall of the horn of the hoof.
- 8. Nails can be used to secure a horseshoe: a. in the sole; b. in the frog; c. inside the white line; d. on the white line; e. outside the white line.
- 9. At the boundary between the skin and the horn of the hoof is found: a. the solar groove; b. cutidural groove; c. cutidural burelet; d. perioplic burelet; e. keratogen tissue.
- 10. Periopla (*Perioplum*) is generated by: a. cutidural burelet (*Dermis coronae*); b. podophyllum (*Lamellae dermales*); c. no answer is correct; d. the velutous tissue of the sole (*Dermis soleae*); e. keraphillum (*Lamellae epidermales*).
- 11. The middle layer of the hoof wall: a. it is thinner than the periopla (*Perioplum*); b. is totally depigmented; c. is strongly vascularized; d. is generated by the cutidural burelet (*Dermis coronae*); e. it is represented by keraphillum (*Lamellae epidermales*).
- 12. The internal layer of the hoof wall: a. is the keraphillum, generated by the cutidural burelet (*Dermis coronae*); b. is made up of the corneous tubes and the intertubular tissue; c. is strongly vasculized and innervated; d. is only represented through keraphillous blades; e. is represented by 500 600 primary blades which powerfully engage with the structures of the podophyllum (*Lamellae dermales*).
- 13. The sole: a. represents the parietal portion of the hoof; b. has the periphery circumscribed by the frog; c. has horn softer than the level of the wall of the hoof; d. has horn softer than that of the frog; e. presents a concave dorsal face.
- 14. The corneous layer of the sole is produced by: a. keraphillum (*Lamellae epidermales*); b. the cutidural tissue of the sole; c. the podophyllous tissue of the sole; d. the velutous tissue of the sole (*Dermis soleae*); e. periosteum of the solear face of phalanx III.
- 15. Palmar chusion: a. it is different in conformation in the thoracic limbs compared to the pelvic limbs; b. it is in contact with the dorsal face of the aponeurosis that reinforces the palmar aponeurosis; c. is in contact with the palmar face of the aponeurosis that reinforces the palmar aponeurosis; d. is the only element of the hoof amortization apparatus; e. it has a quadrilateral appearance.
- 16. The fascia of the chusion is positioned: a. on the dorsal side of the acropodial region; b. only in the metapodial region; c. at the deep face of the postsesamo-phalangeal fascia; d. between the skin and the postsesamo-phalangeal fascia; e. at the tip of the chusion.
- 17. The anterior portion of the wall of the hoof: a. is the lowest; b. is the pincers; c. it is called the toe (*Pars dorsalis*); d. it is continued posteriorly with the heels; e. continues on the solar face forming the bars.
- 18. Branches of the frog: a. are placed on the dorsal face of the frog; b. converge in the caudal direction; c. they are divergent in the caudal direction; d. does not participate in the formation of heel bulbs; e. they are separated from the sole by a median groove.

- 19. The anatomical base of the hoof is: a. the distal extremity of the proximal phalanx; b. the fetlock joint; c. the pastern joint; d. represented by the distal half of the II phalanx, the III phalanx and the lesser sesamoid; e. the III phalanx.
- 20. The strengthening fascia (aponeurosis) of the palmar/plantar aponeurosis represents: a. the anterior wall of the greater sesamoid sheath; b. the anterior wall of the lesser sesamoid sheath; c. the posterior wall of the greater sesamoid sheath; d. the posterior wall of the lesser sesamoid sheath; e. the lesser glenoidian burelet.
- 21. In the solear region the keratogenic membrane is represented: a. only through the velutous tissue of the sole; b. only through the velutous tissue of the frog and the bars; c. only through the plantar podophyllum (*Lamellae dermales*); d. only through the velutous tissue of the sole and the frog; e. the velutous tissue of the sole, frog, bars and the palmar/plantar podophyllum.
- 22. The solear portion of the hoof in ruminants is represented: a. only through the sole, without the frog and bars; b. only through the frog; c. only through the bars; d. through the bars and the frog; e. through the sole and frog.
- 23. The solear portion of the horn of the hoof includes: a. the sole, the frog and the perioplic burelet; b. the sole, the frog and the bars; c. the sole, the frog and the cutidural burelet; d. the sole, the bars and the perioplic burelet; e. the sole, the bars and the cutidural burelet.
- 24. The eyeball has an approximately spherical shape in: a. sheep, swine, carnivores and rabbits; b. sheep, equines, carnivores and rabbits; c. swine, carnivores, bovines and rabbits; d. sheep, swine, carnivores, bovines, rabbits; e. sheep, bovines, equines, swine, carnivores, rabbits.
- 25. The posterior portion of the fibrous tunic of the eye is represented by the: a. transparent cornea; b. retina; c. sclerotic; d. choroid; e. ciliary body.
- 26. The internal side of the sclera is encountered in contact with the choroid through a layer of lax, pigmented connective tissue called: a. sclerocorneal limbus; b. transparent cornea; c. choroid; d. lamina fusca; e. visual retina.
- 27. The anterior opening of the sclera is occupied by the cornea, the continuity area represented by the: a. short ciliary arteries; b. ciliary nerves; c. long posterior ciliary arteries; d. lamina fusca; e. sclerocorneal limbus.
- 28. The choroid is located between: a. the sclerotic and the retina; b. the sclerotic and the ciliary body; c. the retina and the ciliary body; d. the iris and the retina; e. the iris and the ciliary body.
- 29. The ciliary body includes: a. the iris and the ciliary muscle; b. the ciliary muscle and the ciliary processes; c. the ciliary processes and the iris; d. the retina and the ciliary processes; e. the retina and the ciliary muscle.
- 30. The anterior chamber of the eye is located between: a. the iris and the crystalline; b. the cornea and the crystalline; c. the cornea and the iris; d. the cornea and the retina; e. the retina and the crystalline.
- 31. The posterior chamber of the eye is located between: a. the iris and the crystalline; b. the cornea and the crystalline; c. the cornea and the iris; d. the cornea and the retina; e. the retina and the crystalline.
- 32. The junction area between the two portions of the retina (visual and blind) corresponds to: a. the iris; b. the crystalline; c. the sclerocorneal limbus; d. the ciliary processes; e. the ora serrata.
- 33. The optic nerve detaches from: a. the choroid; b. the ciliary processes; c. the ora serrata; d. the optic papilla; e. the crystalline.
- 34. The refractive parts of the eye are represented by: a. aqueous humor, crystalline and vitreous humor; b. aqueous humor, blind retina and vitreous humor; c. crystalline, blind retina and aqueous humor; d. crystalline, blind retina, aqueous humor and vitreous humor; e. vitreous humor, aqueous humor and the visual retina.
- 35. The protective annexes of the eye are represented by: a. the orbital cavity, eyebrows and conjunctive; b. the orbital cavity, eyebrows and eyelids; c. the orbital cavity, eyebrows and the

Tenon capsule; d. the orbital cavity, the eyelids and the conjunctive; e. the orbital cavity, the eyelids and the Tenon capsule.

- 36. The secretory annexes of the eye are represented by: a. mucous glands, sebaceous glands and the lacrimal apparatus; b. mucous glands, sebaceous glands the aqueous humor; c. mucous glands, sebaceous glands the crystalline; d. mucous glands, sebaceous glands and vitreous humor; e. vitreous humor, aqueous humor and lacrimal apparatus.
- 37. Tapetum lucidum is present in all mammalians except: a. equines; b. goats; c. swine; d. canids; e. canids and felines.
- 38. The muscles of the III eyelid in birds are: a. the ciliary and the quadratus muscle; b. the quadratus and pyramidal muscle; c. the retractor muscle of the eye and the pyramidal muscle; d. the dorsal rectus muscle of the eye and the quadratus muscle; e. the ventral rectus muscle of the eye and the pyramidal muscle.
- 39. The proper levator muscle of the superior eyelid: a. is thick and cylindrical; b. has its origin on the trochlear fosset; c. inserts on the external side of the tarsal membrane; d. inserts on the tarsus ligament; e. is covered by the dorsal rectus muscle of the eye.
- 40. The posterior chamber of the eyeball communicates with the anterior chamber through the: a. choroid; b. sclerocorneal limbus; c. pupil; d. iris; e. retina.
- 41. In birds, from the choroid, on the papilla, a pigmented vascular membrane detaches towards the internal chamber. This membrane is called: a. tapetum lucidum; b. crystalline; c. choroid; d. retina; e. pectin.
- 42. In the canidae the stomach is positioned: a. on the right side, between ribs 7-11; b. on the left side, between ribs 7-11; c. on the left, between ribs 9-12; d. on the right, between ribs 8-12; e. on the left side, between ribs 8-11.
- 43. The parietal projection of the convexity of the diaphragm in bovines is done through: a. a line which starts from the dorsal extremity of the last rib, heading towards the dorsal extremity of the XI or X rib, then descending in a curved line ventro-cranially, passing through the middle of the VI rib; b. a line which starts from the dorsal extremity of the last rib, heading towards the dorsal extremity of the XII or even XI rib, then descending in a curved line ventro-cranially, passing through the middle of the VII rib; c. a line which starts from the dorsal extremity of the last rib, heading towards the dorsal extremity of the XIII or even XI rib, c. a line which starts from the dorsal extremity of the last rib, heading towards the dorsal extremity of the XIII or even XII rib, then descending in a curved line ventro-cranially, passing through the middle of the IX rib; d. a line which starts from the dorsal extremity of the first rib, heading towards the dorsal extremity of the XII or even XI rib, then descending in a curved line ventral extremity of the X rib; e. a line which starts from the dorsal extremity of the VII rib then reaching the ventral extremity of the X rib; e. a line which starts from the dorsal extremity of the first rib, heading towards the dorsal extremity of the XII or even XI rib, then descending in a curved line ventral extremity of the X rib; e. a line which starts from the dorsal extremity of the first rib, heading towards the dorsal extremity of the XI or even X rib, then descending in a curved line ventro-cranially, passing through the middle of the VII rib and then reaches the ventral extremity of the VI rib.
- 44. The right kidney in equines is located: a. under the dorsal extremity of the first two ribs and under the first lumbar transverse process; b. under the dorsal extremity of the last two ribs and under the first lumbar transverse process; c. under the dorsal extremity of the first two ribs and under the last lumbar transverse process; d. under the dorsal extremity of the last three ribs and under the first lumbar transverse process; e. under the dorsal extremity of the last three ribs and under the first lumbar transverse process; e. under the dorsal extremity of the first two ribs and under the first lumbar transverse process; e. under the dorsal extremity of the first two ribs and under the last lumbar transverse process.
- 45. The body of the caecum in equines projects: a. in the area corresponding to the chord and slope of the left flank; b. in the area corresponding to the chord and the empty (paralumbar fossa) of the right flank; c. in the area corresponding to the chord and the slope of the right flank; d. only in the area corresponding to the chord of the right flank; e. in the area corresponding to the empty of the right flank.

- 46. The base of the spleen in equines is located: a. dorsally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last four intercostal spaces, slightly overtaking the last rib caudally; b. dorsally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last four intercostal spaces, slightly overtaking the last 5 ribs caudally; c. dorsally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last 6 intercostal spaces, slightly overtaking the last rib caudally; d. dorsally, on the projection line of the thoracic and abdominal cavity, occupying the last 6 intercostal spaces, slightly overtaking the last rib caudally; d. dorsally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last 4 intercostal spaces, slightly overtaking the last rib caudally; e. ventrally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last 4 intercostal spaces, slightly overtaking the last rib caudally; e. ventrally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last 4 intercostal spaces, slightly overtaking the last rib caudally; e. ventrally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last 4 intercostal spaces, slightly overtaking the last rib caudally; e. ventrally, on the projection line of the roof of the thoracic and abdominal cavity, occupying the last 4 intercostal spaces, slightly overtaking the last rib caudally.
- 47. The left ventral colon (the sterno-pelvic portion) is supported on: a. the floor of the abdominal cavity, dorsal from the line of the hypochondrium; b. the floor of the thoracic cavity, dorsal from the line of the hypochondrium; c. the roof of the abdominal cavity, ventral from the line of the hypochondrium; d. the roof of the abdominal cavity, dorsal from the line of the hypochondrum; e. the floor of the abdominal cavity, ventral from the line of the hypochondrum.
- 48. The descending colon in equines is projected in: a. the empty of the left flank (paralumbar fossa); b. the empty of the right flank; c. the slope of the left flank; d. the slope of the right flank; e. the empty and the slope of the right flank.
- 49. The jejunal mass in equines is located: a. in the centre of the cavity, closer to the right wall of the abdomen; b. in the centre of the cavity, closer to the left wall of the abdomen; c. retrodiaphragmatically; d. before the entrance in the pelvic cavity; e. in the empty of the right flank.
- 50. The dorsal ruminal sac: a. projects on the entire ventral side of the abdomen; b. occupies the entire right flank; c. occupies the entire left flank; d. is located in the hypogastric region; e. is located ventro-cranially from the public bone.
- 51. The jejunum in bovines projects: a. in the empty and the slope of the left flank; b. in the empty of the left flank (paralumbar fossa); c. on the entire slope of the left flank; d. on the entire slope of the right flank; e. in the left sublumbar region.
- 52. The right kidney in bovines is located: a. in the sublumbar region, near the last rib and the first three lumbar transverse processes (sometimes under the first four processes); b. in the sublumbar region near the first rib and the first three lumbar transverse processes (sometimes under the first four processes); c. in the sublumbar region, near the first rib and the first two lumbar transverse processes; d. in the sublumbar region, near the last rib and the first two lumbar transverse processes; e. in the sublumbar region, near the first rib and the first lumbar transverse processes; e. in the sublumbar region, near the first rib and the first lumbar transverse processes (sometimes under the first two processes).
- 53. The omasum in sheep and goats: a. does not have direct rapports to the abdominal wall and is more voluminous than in bovines; b. is more reduced than in bovines, with no direct rapports to the abdominal wall; c. is more reduced than in bovines and has rapports directly to the abdominal wall; d. is more voluminous than in bovines and has rapports directly to the abdominal wall; e. comes in contact with the left abdominal wall.
- 54. In equines, between the projection line of the diaphragm and the one of the cranial edge of the spleen is the projection area of the: a. left ventral colon and left dorsal colon; b. stomach and liver; c. duodenum and right ventral colon; d. liver and left kidney.
- 55. In what species does the cecum project on the left side: a. equines; b. bovines; c. swine; d. canids; e. rabbits.
- 56. The head of the cecum in equines occupies: a. the empty of the right flank (paralumbar fossa);b. the slope of the right flank; c, the floor of the abdominal cavity; d. the middle third of the slope of the left flank; e. the chord of the left flank.

- 57. In what species is the right kidney placed caudally from the left one: a. swine; b. goats; c. bovines; d. equines; e. rabbits.
- 58. The duodenum in canids projects: a. on the ventral wall of the abdomen; b. in the left flank; c. on the right side of the abdominal cavity in the middle third of the last rib towards the cranio-ventral side of the ilium; d. in the last left intercostal space; e. on the floor of the abdominal cavity before the jejunum.
- 59. In bovines, the projection area of the omasum has an almost circular contour and projects on: a. the left wall of the thorax; b. in the empty of the flank; c. on the ventral wall of the abdominal cavity; d. on the right wall of the thorax; e. on the empty and slope of the right flank.
- 60. The tip of the cecum in equines tends to reach: a. the xyphoidian appendix (process); b. the hypochondrium; c. the pubis; d. the coxal tubercle; e. the sublumbar region.
- 61. The spleen in rabbits occupies: a. the internal side of the last two ribs; b. the internal side of the first rib; c. the internal side of the first two ribs; d. the internal side of the last rib; e. the entire area of the left flank.
- 62. On the left side, the liver in the leporidae is located: a. behind the diaphragm, between the 5th and 9th ribs; b. behind the diaphragm, between the 7th and 11th ribs; c. behind the diaphragm, between the 8th and 10th ribs; d. behind the diaphragm, between the 6th and 12th ribs; e. behind the diaphragm, between the 6th and 10th ribs.
- 63. The leporid jejunum is projected: a. in the whole region of the left flank; b. in the whole region of the right flank; c. on the ceiling of the abdominal cavity; d. on the floor of the abdominal cavity; e. under the transverse apophyses of the lumbar vertebrae on the right side.
- 64. The jejunal loops in the canids occupy: a. the ventral half of the right flank, on the inner face of the spleen, up to the stomach; b. the ventral half of the left flank on the inner side of the spleen, up to the stomach; c. the first two intercostal spaces; d. the dorsal half of the right flank, on the inner side of the spleen, up to the stomach; e. the dorsal half of the left flank on the inner side of the spleen, up to the stomach.
- 65. Which organ projects to the leporidae on the right side of the abdominal cavity, only when it is in a state of fullness: a. jejunal loops; b) spleen; c. stomach; d. the duodenum; e. no answer is correct.
- 66. The spinal cord has cervical intumescence located between the vertebrae: a. the 5th cervical and the second thoracic; b. the fourth cervical and the second thoracic; c. the 5th cervical and the 3rd thoracic; d. the fourth cervical and the third thoracic; e. 5th cervical and 4th thoracic.
- 67. At the level of the dorsal medial face of the spinal cord, the following grooves are present: a. the dorsal median groove, the median ventral fissure and the dorsal collateral groove; b. the dorsal median groove, the ventral median fissure and the intermediate groove; c. the dorsal median groove, the dorsal collateral groove and in the cervical region an intermediate groove; d. the dorsal median groove, the dorsal median groove, the dorsal collateral groove and in the thoracic region an intermediate groove; e. the dorsal median groove, the dorsal collateral groove and in the sacral region an intermediate groove.
- 68. The gray matter of the spinal cord has two dorsal horns with function: a. motor; b. vegetative; c. motor and vegetative; d. sensitive; e. sensitive and vegetative.
- 69. The dorsal cord of the white matter in the spinal cord is between: a. the dorsal and ventral horn; b. between the median ventral fissure and the ventral horns; c. between the median ventral fissure and the dorsal horns; d. between the dorsal median groove and the dorsal horns; e. between the dorsal median groove and the ventral horns.
- 70. The ventral face of the base of the myelencephalon, arranged orally, continues with: a. the cerebral peduncles; b. spinal cord; c) pons; d. quadrigeminal tubercles; e. geniculate bodies.

- 71. The trapezoidal body is placed: a. on the ventral side of the pons; b. at the level of the bulbar trigone; c. on the ventral side of the bulb; d. on the dorsal side of the bulb; e.at the level of the pontine trigone.
- 72. On the lateral sides of the trapezoidal body, which nerve pairs have their apparent origin: a.VI, VII, VIII; b. VII, VIII; c. IX, X, XI; d. IX, X; e. V, VI
- 73. In the dorsal lateral groove of the spinal bulb are found the apparent origins of the pairs: a. IX, X, XI; b) X, XI, XII; c, VII, IX, X; d. IX, X, XII; e. VII, XI, XII.
- 74. The fourth ventricle represents an intranevraxial space arranged on: a. The dorsal face of the spinal bulb; b. the ventral face of the spinal bulb; c. the dorsal face of the pons; d. the ventral face of the diencephalon; e. the ventral face of the telencephalon.
- 75. The pons is separated from the myelencephalon by the following groove: a. pontopeduncular; b. bazilar; c. interpeduncular; d. postcvadrigeminal; e. bulbopontin.
- 76. The tectal recess of the fourth ventricle enters among the following lobes of the cerebellum: a. declive and lingula; b. nodulus and tuber vermis; c. pyramis and lingula; d. nodulus and lingula; e. uvula and nodulus.
- 77. The mesencephalic aqueduct establishes the connection between: a. the third ventricle and the lateral ventricle; b. the fourth ventricle and the third ventricle; c. the fourth ventricle and the lateral ventricle; d. between the two lateral ventricles; e. the two cerebellar hemispheres.
- 78. Gray tubercle and mammilary tubercle are formations belonging to: a. metatalamus; b) epitalamus; c) hypothalamus; d) thalamus; e. telencephalon.
- 79. Quadrigeminal colliculi belong to: a. myelencephalon; b. metencephalon; c. mesencephalon (midbrain); d. diencephalon; e. telencephalon
- 80. The posterior perforated area is located on the aboral portion of: a. the interpeduncular fossa; b. the pons; c. myelencephalon; d. cerebellar peduncles; e. of the cerebellum.
- 81. The termination of the optical tracts is marked by: a. the medial geniculate body; b. lateral geniculate body; c. optical chiasm; d. anterior white commissure; e. posterior white commissure.
- 82. The anterior common hole represents the orifice through which: a. the lateral ventricles communicate with each other; b. the lateral ventricles communicate with the fourth ventricle; c. the third ventricle communicates with the lateral ventricles; d. the third ventricle communicates with the fourth ventricle; e. the ventricle of the olfactory lobe communicates with the lateral ventricles.
- 83. On the ventral face of the telencephalon, behind the sylvan fossa, there is a relief that constitutes: a. the olfactory triangle; b) corpus callosum; c. the olfactory bulb; d. piriform lobe; e. olfactory peduncle.
- 84. The pellucid septum is a thin blade of nervous substance that forms a septum between: a. the third ventricle and the fourth ventricle; b. cerebral peduncles; c. cerebellar peduncles; d. the anterior white commissure and the posterior white commissure; e. the two lateral ventricles.
- 85. The corpus callosum presents in sagittal section: a. the trunk of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum and the knee of the corpus callosum; b. the trunk of the corpus callosum, the burr of the corpus callosum, the beak of the corpus callosum and the cerebral trigone; c. The trunk of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the burelet of the corpus callosum, the beak of the corpus callosum, the knee of the corpus callosum, the cerebral trigone and the pellucid septum.

- 86. The internal white capsule in the striated body structure divides the gray matter into two main nuclei: a. gracilis and cuneatus; b. caudate and lentiform; c. caudate and claustrum; d. claustrum and lentiform; e. gracilis and lentiform.
- 87. The denticulate ligaments are detached from the external face of: a. dura mater; b) arachnoid; c) pia mater; d. dura mater and pia mater; e. arachnoid and pia mater.
- 88. The tenctorium hypophysis is: a. A fibrous fold in the shape of a scythe blade that penetrates the interhemispheric groove; b. a fibrous crease located between the caudal extremity of the cerebral hemispheres and the cerebellum; c. it is formed by doubling the material at the level of the Turkish saddle; d. is formed by doubling the dura mater at the level of the Turkish saddle; e. is formed by doubling the arachnoid at the level of the Turkish saddle.
- 89. Which is the structure implicated in the formation of choroidal vellum and plexuses that produce cerebrospinal fluid: a. dura mater; b. arachnoid; c. arachnoid and pia mater; d. dura mater and pia mater; e. pia mater.
- 90. The fibrous pericardium has origin in the: a. deep cervical fascia; b. transverse fascia of the abdomen; c. mediastinal septum of the endothoracic fascia; d. superficial cervical fascia; e. gluteal fascia.
- 91. On the floor of the right atrium is present: a. orifice of the coronary sinus; b. right atrioventricular orifice; c. orifice of the cranial vena cava; d. orifice of the pulmonary artery; e. orifices of the pulmonary veins.
- 92. The left atrioventricular orifice: a. is located caudally, provided with a bicuspid or mitral valve; b. has a pulmonary valve, consisting of three crescent valves; c. it is wide, provided with a triple incised valve, consisting of three cusps; d. consists of an aortic valve composed of three crescent valves; e. has an intervenous tubercle.
- 93. The left atrium, arranged caudally, has: a. dorsocranial opening of the cranial vena cava; b. caudolateral opening of the caudal vena cava; c. the orifice of the coronary sinus; d. the orifice of the pulmonary trunk; e. caudodorsal 4-6 wide orifices, representing the opening of the pulmonary veins.
- 94. The left face of the ventricular mass is crossed obliquely by: a. the longitudinal interventricular subsinuous groove; b. the coronary groove; c. the intermediate longitudinal groove; d. paraconal interventricular longitudinal groove; e. two coronary grooves.
- 95. In goats the intermediate longitudinal groove is: a. absent; b. rectilinear and reaches the apex; c. rectilinear, but does not reach the apex; d. very short; e. inconstant.
- 96. In bovines, the edge of the left ventricle has: a. a rectilinear intermediate groove, which reaches the apex; b. the subsinuous longitudinal interventricular groove; c. coronary groove; d. caudal vena cava; e. the intermediate groove that does not approach the tip of the heart.
- 97. Equine auricules are: a. with very denticulated edges; b. smaller than ruminants, but with less denticulated edges; c. similar to those of pigs; d. larger than ruminants, have less denticulated edges; e. similar to carnivores.
- 98. The right auricle in pigs is: a. very well represented, with smooth edges; b. low, with slightly denticulated edges; c. very well represented with slightly denticulated edges; d. low, with strongly denticulated edges; e. is similar to the left one.
- 99. The paraconal and subsinusal grooves join on the anterior edge of the heart, reason for which, seen from the profile, this edge appears slightly incised in: a. cattle; b) pigs; c. goats; d. rabbits; e. carnivores.
- 100.In which species in the right atrium are opened two cranial vena cavae: a. ruminants; b) pigs; c. goats; d. rabbits; e. carnivores.
- 101.In which species the intermediate groove of the heart sometimes appears very short or absent in: a. cattle; b) pigs; c. goats; d. rabbits; e. carnivores.

- 102.In which species in the right atrium are opened two cranial vena cavae and the caudal vena cava: a. only in birds; b) pigs; c. goats; d. birds and rabbits; e. carnivores.
- 103.In pigs, the left subclavian artery detaches directly from: a. the common brachiocephalic trunk; b. common carotid artery; c. the trunk of the lung; d. aortic arch; e. right subclavian artery.
- 104. The parotid lymphcenter in equines: a. cannot be palpated transcutaneously; b. it is arranged above the acini of the parotid gland; c. originates at the level of the sublingual artery; d. is disposed rostral to the temporomandibular joint; e. can be palpated transcutaneously.
- 105. The parotid lymph node in ruminants: a. it is the same conformation as in equines; b. it can be differentiated from parotidian acini by its chocolate brown color; c. exceeds the head of the parotid gland aborally; d. it is partially covered by the parotid, but can be surpassed rostrally; e. it cannot be palpated transcutaneously.
- 106.The mandibular lymph node in bulls: a. is located in the anterior third of the intermandibular space; b. converges symmetrically in a "V" shape with the tip pointing rostrally; c. it can be felt through the soft tissue of the neck; d. cannot be palpated transcutaneously as it is masked by the mandibular gland; e. it is in contact with the tail of the mandibular gland.
- 107.The ventral superficial cervical lymph nodes (prescapular) in ruminants: a. are disseminated along the path of the axillary artery; b. they are also called prepectorals; c. are in continuity with the cranial mediastinal lymph nodes; d. are palpable in the cervicoscapular groove; e. are located on the deep cervical artery.
- 108.In swine, the mandibular lymph center: a. can be confused with the globular aspect of the mandibular gland; b. fuses symmetrically at the level of the rostral extremity; c. also includes accessory mandibular lymph nodes; d. is situated on the occipital artery; e. is disseminated among the acinii of the mandibular gland.
- 109.In swine, the thoracic limb lymph center comprises: a. proper axillary lymph nodes; b. cubital lymph nodes; c. accessory axillary lymph nodes; d. prescapular lymph nodes; e. axillary lymph nodes of the first rib.
- 110.In what species is the thymus completely cervical: a. rabbits; b. birds; c. ruminants; d. equines; e. swine and carnivores.
- 111.In swine, ventral thoracic lymph center: a. is represented only by the cranial sternal lymph nodes; b. includes the cranial and caudal sternal lymph nodes; c. is represented only by the caudal sternal lymph node; d. is placed at the insertion on the sternum of the diaphragm muscle; e. is covered by the cranial insertion of the ascending pectoral muscle.
- 112.In ruminants, the parietal lymph centers of the thoracic cavity: a. do not include thoraco-aortic lymph nodes; b. do not include intercostal lymph nodes; c. the cranial sternal lymph nodes are not present; d. may have thoraco-aortic lymph nodes associated with hemal lymph nodes; e. do not include caudal sternal lymph nodes.
- 113.Caudal mediastinal lymph nodes in ruminants: a. are large and located ventral to the oesophagus; b. are missing; c. are lower than in pigs; d. appear globular; e. are located dorsal to the esophagus and ventral to the aorta.
- 114.Eparterial lymph nodes (cranial tracheo-bronchial) are found: a. only in bovines; b. only in sheep; c. in equines and ruminants; d. in ruminants, equines and pigs; e. at the origin of the tracheal bronchus.
- 115.The ileofemoral lymph nodes in ruminants: a. includes in sheep the epigastric lymph node; b. it is represented in sheep by the ileofemoral lymph nodes arranged along the femoral artery; c. is identical to that of equines; d. is placed on the external iliac artery; e. it is part of the ileo-sacral lymph node.
- 116.Lymph nodes found specifically in pigs are: a. coxal and accessory coxal lymph nodes; b. ischiatic lymph nodes; c. gluteal lymph nodes; d. testicular and phrenico-abdominal lymph nodes; e. scrotal lymph nodes.

- 117.In mares, the lymph nodes located between the abdominal wall and the udders are the ones which have, as afferents, the lymphatic vessels originating from: a. the peritoneum; b. the perineal region; c. the defferent duct; d. the area of the femoral trigone; e. the fallopian tubes (oviducts).
- 118. The popliteal lymph center in pigs: a. includes superficial popliteal lymph nodes and deep popliteal lymph nodes; b. may be palpated transcutaneously; c. does not exist; d. is placed on the popliteal artery; e. it is compact and singular.
- 119. The proper axillary lymph nodes in equines are arranged at the origin of: a. the humero-radioulnar artery; b. ulnar collateral artery; c. subscapular artery; d. internal thoracic artery; e. aorta.
- 120. The caudal sternal lymph nodes in equines: a. are located on the path of the aorta; b. are located in the space delimited by the brachial biceps muscle, dorsal by the medial portion of the triceps muscle; c. are constant and very voluminous; d. they are inconsistent, and when they exist they are reduced, located on the trajectory of the internal thoracic artery; e. do not exist.
- 121. The bronchial lymph center in equines consists of: a. three lymph node groups; b. two lymph node groups; c. a lymph node group; d. four lymph node groups; e. five lymph node groups.
- 122.Celiac lymph nodes in equines are: a. located along the left gastric artery; b. associated with splenic veins; c. placed along the portal vein and the hepatic artery; d) absent; e. located at the origin of the celiac artery that surrounds it forming a voluminous mass.
- 123. The retropharyngeal lymph center in carnivores is: a. represented by the medial retropharyngeal lymph nodes; b. represented by the lateral retropharyngeal lymph nodes; c. missing in canids; d. represented by the medial retropharyngeal lymph nodes, the lateral ones being inconsistent; d. missing in cats; e. highly developed in cats and reduced in canines.
- 124.In cats, the following appear exceptionally: a. the xiphoid lymph node; b. phrenic lymph node; c. the xiphoid lymph node and the phrenic lymph node, the latter being placed near the orifice of the vena cava; d. the xiphoid lymph node and the phrenic lymph node, the latter being placed near the orifice of the aortic artery; e. xiphoid lymph node and phrenic lymph node, the latter being placed near the esophageal orifice.
- 125.The ileosacral lymph center in carnivores is characterized by: a. the development of lateral iliac lymph nodes; b. absence of lateral iliac lymph nodes and anorectal lymph nodes; c. reduced volume of anorectal lymph nodes; d. reduced volume of anorectal lymph nodes and absence of lateral iliac lymph nodes; e. low volume of lateral iliac lymph nodes and absence of anorectal lymph nodes.
- 126.The ischiatic lymph centre in carnivores is: a. missing in cats; b. is represented by a voluminous mass in canids; c. is absent; d. is absent in cats, and in canids it is represented only by the gluteus lymph node; e. is absent in canids, and in cats it is represented only by the gluteus lymph node.
- 127.In leporids, the lateral iliac lymph nodes are: a. inconstant; b. very voluminous; c. located at the origin of the internal iliac artery; d. arranged in the suspensory ligament of the ovary; e. located along the caudal vena cava.
- 128. The jejunal lymph nodes in carnivores are represented by: a. three voluminous lymph node bundles located on either side of the origin of the jejunal artery; b. two large lymph node bundles located on either side of the origin of the jejunal artery; c. two very small lymph node bundles located on either side of the origin of the jejunal artery; d. three very small lymph node bundles located on either side of the jejunal artery origin; e. a compact lymph node package located at the origin of the jejunal artery.
- 129.In leporids, the cervical lymph nodes are dominated by: a. the deep cranial cervical lymph nodes; b. middle deep cervical lymph nodes; c. cranial superficial cervical lymph nodes; d. caudal superficial cervical lymph nodes; e. deep caudal cervical lymph nodes.
- 130.The ischiatic lymph node in leporidae is: a. very voluminous; b. reduced but constant; c. voluminous, but inconstant; d. reduced, but inconstant; e. absent.

- 131.Spleen in cattle: a. it is oval or slightly triangular; b. has a narrow and elongated appearance; c. has a reduced pedicle in the middle third of the cranial margin; d. it is elongated, elliptical on the contour, with approximately equal and slightly rounded extremities; e. has tapered extremities.
- 132.In chickens, the cloacal bursa: a. has a piriform or globular appearance; b. has a fusiform appearance; c. does not exist; d. has an elongated appearance; e. is tapered at the extremities.
- 133.The axillary lymph center in equines: a. is represented only by its proper axillary lymph nodes; b. is represented only by the ulnar (elbow) lymph nodes; c. it is represented by the proper axillary lymph nodes and by the ulnar lymph nodes (of the elbow); d. is absent; e. is constantly represented by its proper axillary lymph nodes and inconsistently by the ulnar (elbow) lymph nodes.
- 134.The lacrimal nerve (from the ophthalmic branch of the trigeminal nerve) in equines, takes over the sensitivity of the skin: a. from the parieto-temporal region and the lacrimal gland; b. from the region of the forehead and the upper eyelid; c. from the facial region; d. from the base of the ear; e. from the buccinatory region.
- 135.The zygomatotemporal nerve (from the lacrimal nerve) in the equines, collects the sensitivity of the skin: a. from the nasal region; b. from the region delimited between the base of the ear, the temporal line, the frontoparietal ridge and the zygomatic arch; c. from the maxillary region; d. from the regions of the nostrils, the tip of the nose, the upper lip; e. from the buccinatory region.
- 136.The sensitive cutaneous area dependent especially on the infraorbital plexus in equines includes: a. the region of the forehead and upper eyelid; b. the parieto-temporal region and the lacrimal gland; c. the nasal region, the maxillary region, the regions of nostrils, the tip of the nose, the upper lip and a small portion of the buccal region; d. the lower lip and the region of the chin, being aborally limited by the corner of the lips; e. the prepectoral (presternal) region.
- 137.The superficial temporal nerve through the rostral atrial branch innervates, in equines: a. the area of the zygomatic arch from the articulation angle with the orbital arch to the zygomatotemporal suture (5-6 cm behind the maxillary spine); b. a large masseter and buccinatory area; c. the skin between a line starting from a point located on the facial ridge about 5 cm behind the maxillary spine; d. the temporal area, comprising the skin covering the zygomatic arch from the angle of union with the orbital arch at the base of the ear; e. mandibular molars, mandibular incisors and mandibular gum.
- 138. The sensitive cutaneous area, dependent on the mental plexus, corresponds in equines to: a. the anterior mucosa of the soft palate; b. the skin on the outer face of the ear; c. the skin of the intermandibular groove; d. the neck region; e. the lower lip and the region of the chin, being aborally limited by the line joining the corners of the lips.
- 139. The alveolomandibular nerve in equines innervates: a. the mandibular molars and the mandibular incisors; b. the nasal mucosa on the walls and on the ventral turbinate; c. the mucosa of the lateral buccal vestibule and the molar glands; d) pharynx; e. parotid gland.
- 140.The cervical ventral branches in equines, give sensitivity to the skin between: a. the line that unites the base of the ear with the thoracic angle of the scapula; b. the line joining the base of the ear with the tuberosity of the scapular spine and the ventral edge of the neck; c. the line joining the points represented by the base of the ear with tuberosity of the scapular spine; d. the line rising from the olecranon to meet the line joining the tuberosity of the scapular spine with the patella; e. the line joining the tracheal appendix with the elbow fold.
- 141. The supraclavicular nerve, through the dorsal branch, innervates in equines: a. a cutaneous area from the scapulohumeral region; b. esophagus and trachea; c. a small area at the base of the neck, before the cervicoscapular groove; d. the origin of the trachea and the origin of the esophagus; e. the nasal mucosa on the walls and on the ventral nasal cornet.

- 142.In equines, the liver, pancreas, stomach and intestine (up to and including the transverse colon) are innervated by: a. the renosuprarenal plexus (from the vagus nerve and the renosuprarenal ganglion); b. hypogastric plexus; c. solar plexus (vagus nerve-parasympathetic fibers and celiomezenteric ganglion-orthosympathetic fibers); d. caudal mesenteric plexus; e. vagus nerve and renosuprarenal ganglion.
- 143. The pelvic portion of the vas deferens and the male annex glands, the oviducts, the uterus, the vagina and the vaginal vestibule in equines are innervated by: a. the renosuprarenal plexus (from the vagus nerve and the renosuprarenal ganglion); b. hypogastric plexus; c. solar plexus (vagus nerve-parasympathetic fibers and celiomezenteric ganglion-orthosympathetic fibers); d. caudal mesenteric plexus; e. vagus nerve and renosuprarenal ganglion.
- 144. The cranial lateral cutaneous nerve of the arm innervates in equines: a. the skin covering the muscular body of the carpo-radial extensor muscle; b. the skin on the anterior face of the arm, corresponding to the biceps muscle and partially to the cleidobrachial muscle; c. the skin covering the lateral portion of the brachial triceps muscle; d. the skin covering the muscular portion of the common digital extensor muscle and the lateral digital extensor muscle; e. which envelops the caudal muscles of the forearm (except the projection area of the carporadial flexor muscle), respectively of the extensor carpoulnar muscle and the flexor carpoulnar muscle.
- 145.The caudal cutaneous nerve of the forearm in equines gives sensitivity to the skin: a. which covers the muscular body of the extensor carpo-radial muscle; b. on the anterior face of the arm, corresponding to the biceps muscle and partially to the cleidobrachial muscle; c. covering the lateral portion of the brachial triceps muscle; d. covering the muscular portion of the common digital extensor muscle and the lateral digital extensor muscle; e. which envelops the caudal muscles of the forearm (except the projection area of the carporadial flexor muscle), respectively of the extensor carpoulnar muscle and the flexor carpoulnar muscle.
- 146.The dorsal branch of the ulnar nerve (dorsal nerve of the hand) in equines gives sensitivity to the skin: a. on the latero-caudal side of the carpal and metacarpal region; b. on the anterior face of the arm, corresponding to the biceps muscle and partially to the cleidobrachial muscle; c. covering the lateral portion of the brachial triceps muscle; d. covering the muscular portion of the common digital extensor muscle and the lateral digital extensor muscle; e. which envelops the caudal muscles of the forearm (except the projection area of the carporadial flexor muscle), respectively of the extensor carpoulnar muscle and the flexor carpoulnar muscle.
- 147. The axillary nerve in the equine innervates: a. the humeroradioulnar joint with the synovial; b. synovial of the great postcarpal sheath, tendons of the phalangeal flexors, synovial of the great sesamoid sheath; c. scapulohumeral joint with synovial; d. the living tissues of the hoof; e. synovials of precarpal sheaths.
- 148. The sciatic nerve in the equine innervates: a. the articular complex of the hock; b. the synovial of the large sesamoid sheath and the small sesamoid sheath; c. perioplic and cutidural burette; d. synovials of the pretarsal sheaths; e. synovial of the hip joint.
- 149. The tibial nerve in the equine innervates: a. the articular complex of the hock; b. the synovial of the large sesamoid sheath and the small sesamoid sheath; c. perioplic and cutidural burelet; d. synovials of the pretarsal sheaths; e. synovial of the hip joint.
- 150.The cervical organs (esophagus and trachea) in equines are sensitively innervated by: a. the pneumogastric nerve (vagus nerve); b. the auriculotemporal nerve; c. the zygomatic nerve; d. the large atrial nerve; e. the oral nerve.