UNIVERSITY OF AGRONOMIC SCIENCES AND VETERINARY MEDICINE
FACULTY OF VETERINARY MEDICINE
Splaiul Independenţei 105, sector 5, 050097, BUCHAREST, ROMANIA
Tel.: + + 4021 318 0469; Fax:+ + 40 21 318 0498
www.fmvb.ro, e-mail: info@fmvb.ro

DEPARTMENT: PRECLINICAL SCIENCES

DISCIPLINE: ANATOMY
Course responsible teacher: Assoc. Prof. Cristian Belu, DVM PhD

THEMATIC AND BIBLIOGRAPHY

1. Lymphatic system – The topography of muscular lymph centers (of the head, neck, limbs), visceral (of the thoracic and abdominal cavity) and the afferent and efferent vessels in ruminants and swine.
2. Anatomical formations from thoracic and abdominal cavities:
a. the organs from thoracic and abdominal cavities and the projection areas on the walls;
b. vascular formations and their distribution to the organs in equines.
3. Ventro-lateral abdominal regions in horses (male):
a. inguinal region and testicular covers;
b. the flank region.
4. The thoracic and pelvin regions of acropodium in equine (fetlock, pastern, coffin and hoof).

Total number of pages – 63 (text and images)

Bibliography:

1. Predoi, G. și col. – Anatomia animalelor domestice (angiologie, neurologie, organe de simț). Lito. AMD-UȘAMV, București, 2002 (pag. 56-68, 173-186).
2. Predoi G., Belu C - Anatomia animalelor domestice (anatomie clinică). Editura All, București, 2001 (pag. 103-107, 116-120, 142-144).
3. Cotofan V., Predoi G. - Anatomia topografica a animalelor domestice. Editura All, Bucuresti, 2003 (pag. 157-162, 163-169, 359-368).

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QUESTIONNAIRE
100 questions with five possible answers, of which only one is correct.

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. In swine, intercostal lymph nodes:
a. are placed at the origin of the intercostal arteries;
b. are placed at the bifurcation of the intercostal artery;
c. are missing;
d. they have the same configuration as found in sheep;
e. are well represented.

7. In swine, ventral thoracic lymph center:
a. are represented only by the cranial sternal lymph nodes;
b. includes the cranial and caudal sternal lymph nodes;
c. are represented only by the caudal sternal lymph node;
d. are placed at the insertion on the sternum of the diaphragm muscle;

e. are covered by the cranial insertion of the ascending pectoral muscle.

8. 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. include caudal sternal lymph nodes.

9. 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 elongated and located dorsal to the esophagus and ventral aorta.

10. 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.

11. 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.

12. 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.

13. Superficial inguinal lymph nodes are arranged:
a. at the origin of the femoral artery;
b. at the origin of the external pudendal artery;
c. at the level of the deep inguinal ring;
d. anterior to the base of the udder;
e. caudal to the base of the udder.

14. 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.

15. The inguinal region has an anatomical basis in:
a. the deep inguinal ring;
b. the prepubian tendon;
c. superficial inguinal ring only in the male;
d. aponeurosis of the oblique muscle of the abdomen;
e. superficial inguinal ring.

16. The superficial inguinal ring represents:
a. the deep opening of the inguinal canal;
b. an elliptical slot in the aponeurosis of the external oblique muscle of the abdomen;
c. vaginal ring;
d. superficial opening of the inguinal canal present only in the male;
e. elliptical slot in the yellow tunic of the abdomen.

17. In general, the inguinal traject is delimited cranially by:
a. the lateral face of the internal oblique muscle of the abdomen;
b. the medial face of the external oblique muscle of the abdomen;
c. inguinal ligament;
d. the medial face of the internal oblique muscle of the abdomen;
e. aponeurosis of the muscle transverse to the abdomen.

18. Vaginal ring:
a. is the opening of the vagina in the vaginal vestibule;
b. is the deep inguinal ring lined by the transverse fascia and peritoneum;
c. is female-specific structure;
d. represents the vaginal fornix;
e. represents the opening of the cervix in the vagina.

19. Testicular artery:
a. represents a collateral of the external iliac artery;
b. arises from the internal iliac artery;
c. has a rectilinear path near the cranial pole of the testicle;
d. initially attaches on the free edge of the testicle;
e. is extremely flexible at the level of the pampiniform plexus.

20. External pudendal artery of the horse:
a. represents the end of the internal iliac artery;
b. is detaches from the common trunk with cremaster artery;
c. it ends with the abdominal subcutaneous artery and the cranial artery of the penis;
d. it crosses the vaginal cavity and enters the testicular cord structure;
e. it splits into the common trunk with the umbilical artery, forming the pudendo-umbilical trunk.

21. The tendonous synovial sheath used by the deep digital flexor at the level of the metacarpo sesamo phalangian joint:
a. extends proximally until the inter sesamoidian ligament;
b. herniates between the lateral bands of the post-sesame-phalangeal fascia;
c. it is separated proximally from the recessus of the metacarpo sesamo falangian joint by the tendon of the median interosseous muscle;
d. communicates with the recessus of the metacarpo sesamo falangian joint in the horse;

e. represents a double vaginal synovial.

22. The distal reccesus of the great sesamoidian sheath:
a. has a palmar protrusion between the superficial flexor insertions and the fascia that strengthens the palmar aponeurosis;
b. herniates between the proximal and middle insertions of the postsesamo-phalangeal fascia;
c. herniates between the middle and distal insertions of the postsesamo-phalangeal fascia;
d. rests on the small glenoid burelet;
e. can communicate in 30% of cases with the palmar ecessus of the distal interphalangeal joint.

23. The great glenoidal burelet:
a. represents the proximal shield;
b. offers insertion place for the deep digital flexor tendon muscle;
c. represents the distal shield;
d. is inserted wide on the intermediate phalanx;
e. is inserted on the small sesamoid.

24. The proper, lateral and medial digital arteries in the equine:
a. are placed before the satellite veins;
b. are positioned subfacially;
c. ends inside the distal phalanx through the terminal arch;
d. are placed caudal to the corresponding posterior digital nerve;
e. ends at the edge of the complementary cartilages through 3-4 coronary arteries.

25. The lateral and medial digital veins are formed by the convergence of 3-4 veins in equines:
a. which only discharge the sensitive/ dermal laminae venous plexus;
b. which only discharge blood from the internal venous apparatus of the foot;
c. detached from superficial and deep cartilaginous venous plexuses;
d. deep digital veins;
e. disposed at the deep face of the keratogenous membrane.

26. The palmar digital nerve:
a. it is placed before the proper digital veins;
b. is located caudal to the digital artery;
c. it crosses at an acute angle the external face of the ligament of the pastern;
d. is finer than the middle digital nerve;
e. is placed subfacially.

27. White line:
a. is masked by a sensitive/ dermal sheet;
b. marks the boundary between the sole and the frog;
c. marks on the solar 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.

28. 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.

29. The cutidural burelet:
a. it is disposed at the upper edge of the perioplic burelet;
b. determines the increase in the length of the hoof wall;
c. generates the keraphillum (*Lamellae epidermales*);
d. projections under the skin at the coronary edge of the wall;
e. produces the keratin of the sole.

30. Keraphillum (*Lamellae epidermales*):
a. is the superficial layer of the hoof wall;
b. is generated by the cutidural burelet;
c. is generated by the podophyllous tissue;
d. is strongly pigmented;
e. represents a keratogenic membrane structure.

31. Complementary fibrocartilage:
a. have the outer face completely covered with skin;
b. they have no continuity with the bulb of the frog;
c. come in contact through the deep face with the recessuses of the distal interphalangeal joint;
d. they have the same form in equines and ruminants;
e. are generated by the keratogenic membrane.

32. 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 digits should be performed;
e. the bulb of the frog must also be removed.

33. External layer of the straight abdominal muscle in the equine:
a. comes from the yellow tunic;
b. it arises only from the aponeurosis of the external oblique muscle of the abdomen;
c. represents only the continuation of the aponeurosis towards the white line of the internal oblique muscle of the abdomen;
d. it results from the interposition of the aponeuroses of the external and internal oblique muscles of the abdomen;
e. it represents the continuation of the aponeurosis of the transverse muscle of the abdomen.

34. Anastomotic arch performed by the cranial and caudal epigastric artery:
a. is placed at the latero-dorsal edge of the straight muscle of the abdomen;
b. it is placed at the medial edge of the straight muscle of the abdomen;
c. is disposed obliquely from the external angle of the ilium to the xiphoid appendix;
d. is placed on the ventral face of the straight muscle of the abdomen;
e. is placed in the thickness of the internal oblique muscle of the abdomen.

35. Abdominal subcutaneous vein:

a. is better represented at the mare than the cow;
b. connects to the external pudendal vein in bulls;
c. it is continued with the internal thoracic vein in equines;
d. is continued with the internal thoracic vein in calves;
e. it is thick and flexible in the calves and located subfascially.

36. Iliohypogastric nerve:
a. represents the dorsal branch of the first pair of lumbar nerves;
b. represents the dorsal branch of the second pair of lumbar nerves;
c. emits on the path branches for transverse muscles of the abdomen, right abdomen, internal oblique of the abdomen;
d. is a sensory nerve;
e. is a motor nerve.

37. The ilioinguinal nerve:
a. is a motor nerve;
b. it is purely sensory;
c. precedes the origin of the iliohypogastric nerve;
d. through the ventral branch ends at the scrotum or at the skin of the udder;
e. it innervates the upper abdominal muscles.

38. The subcutaneous abdominal vein in equines:
a. is the root of deep femoral vein;
b. is placed at the lateral edge of the rectus abdominalis muscle;
c. discharges into the accessory pudendal vein;
d. discharges into the internal pudendal vein;
e. it is more voluminous than in cattle.

39. External pudendal artery:
a. is the first collateral of the external iliac artery;
b. can be dissected at the level of the cranio-lateral commissure of the superficial inguinal ring;
c. can be dissected at the caudal-medial commissure of the superficial inguinal ring;
d. is accompanied in equine by the external pudendal vein;
e. enters the structure of the testicular cord.

40. The portal vein in equines:
a. has the roots of the cranial mesenteric vein, the caudal mesenteric vein and the splenic vein;
b. it ensures the trophic circulation of the liver;
c. has no relation to the pancreas;
d. it has its roots only the cranial mesenteric vein and the splenic vein;
e. does not contribute to the delimitation of the omental hiatus.

41. The left gastroepiploic artery:
a. irrigates the omentum and small curvature of the stomach;
b. anastomoses in the thick region of the large omentum with the right gastric artery;
c. represents the continuation of the splenic artery;
d. is found in the thickness of the small omentum;
e. comes from the gastro-duodenal artery.

42. The gastro-duodenal artery:
a. is terminal of the hepatic artery;
b. it ends with the left gastro-epiploic artery and the caudal pancreatic-duodenal artery;
c. irrigates the area of the small curvature of the stomach;
d. it ends with the right gastro-epiploic artery and the cranial pancreatico-duodenal artery;
e. represents the indirect branch of the first jejunal artery.

43. The left bundle of the cranial mesenteric artery:
a. is represented by 18-20 jejunal arteries;
b. is represented by the ileo-ceco-colic artery;
c. is the middle colic artery;
d. it is divergent in the thickness of the small mesentary;
e. anastomoses with the left colic artery.

44. The caudal pancreato-duodenal artery:
a. represents the terminal branch of gastro-duodenal artery;
b. originates in the hepatic artery;
c. represents the indirect branch of the first jejunal artery;
d. represents the direct branch of the last jejunal artery;
e. is anastomosed with the middle colic artery.

45. The ventral colic artery:
a. represents the left bundle of the cranial mesenteric artery;
b. irrigates III and IV segments of the ascending colon;
c. engages on the great curvature of the 1st and 2nd segment of the ascending colon;
d. engages on the small curvature of the 1st and 2nd segment of the ascending colon;
e. is anastomosed with the middle colic artery.

46. The anterior fascicle of the cranial mesenteric artery:
a. is represented by the ventral colic artery;
b. represents only the dorsal colic artery;
c. is the common trunk of the right colic artery and the middle colic artery;
d. is the left colic artery;
e. is the ileo-ceco-colic artery.

47. The cranial rectal artery:
a. represents the indirect branch of the last branch of the caudal mesenteric artery;
b. represents the only artery that irrigates the rectum;
c. represents the last direct branch of the caudal mesenteric artery;
d. it is represented by 13-14 branches that engages in the thickness of the great mesentery;
e. it is anastomosed with the caudal rectal artery.

48. At the inner face of the hypochondrium, under the parietal serosa can be found:
a. caudal epigastric artery;
b. cranial epigastric artery;
c. the musculo phrenical artery and vein;
d. ilio-hypogastric nerve;
e. ilio-inguinal nerve.

49. The dorsal limit of the thoracic cavity in equines is represented by:
a. the line joining the thoracic angle of the scapula with the coxal tuberosity;

b. the line joining the tuberosity of the scapular spine with the coxal tuberosity;
c. the line joining the cervical angle of the scapula with the cranial angle of the paralumbar fossa;
d. the line joining the tuberosity of the scapular spine with the cranial angle of the paralumbar fossa;
e. the line joining the scapulo-humeral joint with the cranial angle of the paralumbar fossa.

50. The ventral limit of the projection of the liver on the left in the equine is:
a. the horizontal line joining the olecranon with the patella;
b. the line joining the cranial angle of the paralumbar fossa to the olecranon;
c. the horizontal line that passes equal distance between the coxal tuberosity and the patella;
d. the line joining the olecranon with the coxal tuberosity;
e. the line joining the thoracic angle of the scapula with the patella.

51. The position of the head of the cecum:
a. on the left side, at the level of the paralumbar fossa;
b. on the left side, at the slope of the flank;
c. on the right side, at the level of the paralumbar fossa;
d. on the right side, next to the last 3-4 ribs;
e. cannot be projected.

52. The bovine cecum is situated:
a. in the right para lumbar fossa;
b. near the last intercostal space, at the level of the line joining the cranial angle of the paralumbar fossa with the thoracic angle of the scapula;
c. on the right side, at the level of the the chord of the flank;
d. on the right side, at the level of paralumbar fossa;
e. on the right side, at the slope of the flank.

53. In the canidae, the anatomical position of the heart is described as:
a. on the left, between ribs 6 – 13;
b. on the left, between ribs 3-7;
c. on the left, between ribs 3-9;
d. on the left, between ribs 7-11;
e. on the left side, between ribs 5-9.

54. 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.

55. The flank region:
a. It is wide in the equine;
b. is regular in form;
c. in cattle and pigs it is narrow;
d. extends from the hypochondrium to the external angle of the ischium;
e. in cattle it is wide.

56. The following statement about the flank region is not true:
a. in the carnivores it is very elongated;
b. the division of the region into the paralumbar fossa, rope and slope of the flank is not specific for the ungulates;
c. extends from the hypochondrium to the angle of the hip and thigh region;
d. equine is very narrow;
e. in cattle and swine it is wide.

57. In the flank region:
a. subcutaneous connective tissue is reduced;
b. the nerve fibres perforate the superficial fascia at one level;
c. all answers are incorrect;
d. at the level of subcutaneous connective tissue the dorsal branches of the lumbar nerves appear at the tip of the lumbar transverse processes;
e. the lateral branches of the lumbar nerves from the subcutaneous connective tissue together with the ribs of the I and II lumbar pairs, appear successively on the line joining the costochondral joint of the last rib with the coxo-femoral joint.

58. The interfascial connective tissue from the flank region:
a. is devoid of adipose tissue and rich in elastic fibers;
b. in females there are acini of the mammary gland not covered by the mammary capsule;
c. in males, the suspensory ligaments of the penis are differentiated;
d. superficial inguinal lymph nodes are found;
e. vascular formations (descending branch of the deep iliac circumflex artery) are found.

59. The distal recessus of the great synovial sheath (great sesamoidian sheath) has a palmar protrusion between:
a. deep flexor insertions and palmar aponeurosis;
b. deep flexor insertons and superficial flexor insertion;
c. superficial flexor insertions and palmar aponeurosis;
d. superficial flexor insertions and fascia (aponevrosis) that strengthens palmar aponeurosis;
e. palmar aponeurosis and fascia (aponevrosis) that strengthen the palmar aponevrosis.

60. The proximal branch of the palmar ramus of the proximal phalangeal artery supplies the:
a. distal extremity of the phalanx;
b. proximal extremity of the middle phalanx;
c. synovial membrane of the coffin joint;
d. synovial membrane of the pastern joint;
e. synovial membrane of the interphalango-sesamoidian (fetlock) joint.

61. In cow, caudally of the base of the udder, are placed:
a. ischiatic lymph-nodes;
b. superficial inguinal lymph-nodes;
c. ileo-femoral lymph-nodes;
d. deep inguinal lymph-nodes;
e. scrotal lymph-nodes.

62. Keraphillum (*Lamellae epidermales*) is generated by:
a. white line;
b. chusion;

c. hoof wall;
d. podophillum (*Lamellae dermales*);
e. velutous tissue (*Dermis soleae*).

63. The ligament of ergot are located on the lateral sides of:
a. post sesamophalangian fascia;
b. fascia lata;
c. post-carpal fascia;
d. fascia of the chusion;
e. fascia of the frog.

64. Complementary fibrocartilage is found to the lateral and medial side of:
a. frog;
b. heels;
c. bulbs of the chusion;
d. the white line;
e. colateral groove (lateral gap).

65. 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. collateral groove (lateral gap).

66. 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.

67. Between the white line and the body of the frog is:
a. the body of the sole;
b. the bulbs of the chusion;
c. fibrocartilage body;
d. perioplic burelet;
e. cutidural burelet.

68. The fibrous sheath of the digit is inserted through two pairs of bridle on:
a. extremities of the first phalange;
b. extremities of the metacarpal bone;
c. the extremities of the middle phalange;
d. extremities of the distal phalange;
e. flexor tendons.

69. The most superficial of the sesamoidian ligaments is the:
a. oblique sesamoidian;
b. cruciate sesamoidian;
c. short sesamoidian;
d. straight sesamoidian;

e. metacarpo-intersesamoidian.

70. 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.

71. The cutidural burelet generates:
a. the horn of the sole;
b. periopla (*Perioplum*) and keraphillum (*Lamellae epidermales*);
c. horn of the wall, including periople/ periopla (*Perioplum*);
d. the horn of the wall apart from the keraphillum (*Lamellae epidermales*);
e. the horn of the wall without the periople/periopla (*Perioplum*) and the keraphillum (*Lamellae epidermales*).

72. The middle shield is:
a. placed proximal to the metacarpo-sesamo-phalangian joint;
b. small glenoidal burelet;
c. the great glenoidal burelet;
d. placed behind the small sesamoid;
e. fixed to the III phalanx.

73. The coronary artery of the distal phalanx is arises from:
a. dorsal artery of distal phalanx;
b. proximal artery of distal phalanx;
c. the plantar artery of the middle phalanx;
d. dorsal artery of the middle phalanx;
e. the dorsal artery of the proximal phalanx.

74. The insertion point of the deep flexor is:
a. on the palmar face of the middle phalanx;
b. on the palmar face of the proximal phalanx;
c. on the great glenoidal burelet;
d. on the small glenoidal burelet;
e. on the great sesamoids.

75. The white line is formed:
a. at the junction of the sole with the frog;
b. at the junction of the sole with the periopla (*Perioplum*);
c. at the place of engagement of the sole with the velutous tissue;
d. at the place of engagement of the sole with the coronary edge of the wall;
e. at the place of engagement of the sole with the solar edge of the wall.

76. Podophyllous lamellae (*Lamellae dermalis*):
a. are less common in the toe region (*Pars dorsalis*);
b. are located on the external part of the wall;
c. belong to the velutous tissue of the sole (*Dermis soleae*);
d. are less common in the heels region;
e. have a total number of 50-100.

77. Testicular artery (internal spermatic artery):
a. detaches from the internal pudendal artery;
b. It has its origin in the external iliac artery;
c. detaches from the external iliac artery;
d. detaches from the external pudendal artery;
e. is detached from the abdominal aorta.

78. The cremasteric artery (small testicular artery, external spermatic artery):
a. in the equine is a branch of the deep femoral artery;
b. in the ram it is detached from the cranial epigastric artery;
c. in the equine it is detached from the external iliac artery near the origin;
d. in cattle, swine and carnivores it is detached from the caudal epigastric artery;
e. in the equine it is detached from the internal iliac artery near the origin.

79. Which statement regarding the testicular cord is true:
a. it consists of the deferential duct suspended by *mesoductus deferens*;
b. it is represented by the pampiniform plexus and the deferential duct;
c. consists of the pampiniform plexus and nerve fibers;
d. it consists of the vasculo-nervous fascicle and the deferent duct connected by the mesorchium;
e. it is represented only by the deferent duct.

80. 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*).

81. The splenic artery in equines results in the:
a. retrograde esophageal branches;
b. gastric branches for the small curvature of the stomach;
c. branches for the right extremity of the large curvature of the stomach;
d. pyloric branches;
e. branches for the left half of the large curvature of the stomach.

82. Celiac artery in equines:
a. represents the first parietal collateral of the abdominal aorta;
b. it detaches behind the cranial mesenteric artery;
c. ends only with the splenic and hepatic arteries;
d. has three terminal arteries;
e. it has a length of 8-10 cm.

83. The middle rectal artery:
a. is the last direct branch of the caudal mesenteric artery;
b. anastomoses with the left colic artery;
c. comes from the umbilical artery;
d. comes from the prostate artery in the male;
e. comes from the perineal artery.

84. The renal arteries are collateral vessels of the abdominal aortic artery arising from:
a. caudal region of the cranial mesenteric artery;
b. cranial celiac trunk;
c. caudal region of the caudal mesenteric artery;
d. caudal to the arteries of the gonads;
e. the common trunk.

85. In equines, the cecal artery:
a. comes from ileonic artery:
b. represents the left bundle of the cranial mesenteric artery;
c. bifurcates into the lateral cecal artery and medial cecal artery:
d. follows the great curve of the cecum;
e. supplies only the apex of the cecum.

86. 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*).

87. The deep layer of the hoof wall:
a. is the keraphillum (*Lamellae epidermales*), generated by the cutidural burelet (*Dermis coronae*);
b. it consists of corneous tubes and intertubular tissue;
c. is strongly vascularized and innervated;
d. consists only of keraphyllous lamellae *(Primary epidermal lamella);*
e. consists of *primary epidermal lamella* and *secondary epidermal lamella*.

88. Podophyllous lamellae (*Lamellae dermales*):
a. constitutes the generating layer of the corneous tubes;
b. are arranged parallel with the keraphyllous lamellae (*Lamellae epidermales*);
c. missing in the heel region;
d. are placed at the deep part of the hoof wall;
e. generates the sole.

89. The sole:
a. represents the parietal potion 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.

90. 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. periostuem of the solear face of phalanx III.

91. 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.

92. 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.

93. The coronary groove:
a. represents the anatomical basis of the coronary region;
b. marks the upper limit of the coronary region;
c. it houses the perioplic burelet (*Limbus*);
d. offers a place of support for the cutidural burelet (*Dermis coronae*);
e. marks the boundary between the skin and the wall of the hoof.

94. The anterior portion of the wall of the hoof:
a. is the lowest;
b. is the highest but the thinnest;
c. it is called the toe (*Pars dorsalis*);
d. it is continued posteriorly with the heels;
e. continue on the solar face forming the bars.

95. 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 gap.

96. The chord of the flank:
a. represents the aponeurotic portion of the straight abdominal muscle;
b. consists of the muscular portion of the external oblique muscle of the abdomen that is inserted into the last rib;
c. integrates into the transverse abdominal muscle;
d. represents the part of the internal oblique muscle of the abdomen that is inserted cranially on the last rib;
e. participates in the formation of the coxo-lombo-sternal fossa.

97. The endoabdominal fascia from the flank region:
a. continues caudally on the diaphragm;
b. is inserted dorsally on the white line;
c. is a connective, thin sheet, which adheres tightly to the inner face of the *transversus abdominis*;
d. in the sub-sacral region it forms the lumbo iliac fascia;

e. it covers the latero-cranial walls of the pelvic cavity.

98. In swine the caudal commissure of the superficial inguinal ring:
a. consists of the merging of the fibers of the two pillars of the ring at the pubic insertion of the *rectus abdominis* muscle;
b. it is placed very close to the pubic arch;
c. is part of the aponeurosis of the internal oblique muscle of the abdomen;
d. belongs to the muscular portion of the external oblique muscle;
e. does not exist.

99. Vaginal ring:
a. results from the lining of the superficial inguinal ring by the peritoneum and the transverse fascia;
b. in the boar it has a diameter of 12-14 cm;
c. results from the lining of the deep inguinal ring by the transverse fascia and peritoneum;
d. belongs to the femoral triangle (Scarpa's triangle);
e. represents the limitation between the pelvic cavity and the neck of the vaginal pouch.

100. The vaginal process (vaginal tunic):
a. belongs to the abdominal cavity;
b. it is covered on the internal face by the internal cremaster muscle;
c. consists of 3 sheets;
d. it is covered on the external face by the external cremaster muscle;
e. it is made up exclusively of the peritoneum.

101. The ventral superficial cervical lymph nodes (prescapular) in ruminants:
a. are palpable in cervicoscapular groove;
b. are palpable in jugular groove;
c. are placed on the traject of common carotid artery, at the base of the neck;
d. is absent in small ruminants;
e. is placed at the origin of subscapular artery.

102. Lymph nodes found superficially in pigs are:
a. axillary of the first rib;
b. testicular and phrenico-abdominal lymph node;
c. gluteal lymph nodes;
d. ischiatic lymph nodes;
e. mandibular lymph nodes.

103. Which from the following sentence regarding the external pudendal artery of the horse is correct?
a. ends in abdominal subcutaneous artery and cranial artery of the penis;
b. represents the end of the femoral artery;
c. has the same origin with the internal pudendal artery;
d. it crosses the vaginal cavity and enters in the testicular cord structure;
e. from a common trunk with the umbilical artery.

104. The distal interphalangeal joint must be in forced extension:
a. during the operation of the inflammed perioplic burelet;
b. during the application of the horse shoe;
c. during the operation of the inflammed complementary fibrocartilage of the hoof;

d. when we want to palpate the palmar recessus of the metacarpo-sesamo-phalangeal joint;
e. in case of inflamation of keraphillum *(Lamellae epidermales).*

105. Cranial mezenteric vein is one of the roots of:
a. hepatic vein;
b. cava caudal vein;
c. celiac vein;
d. cranial cava vein;
e. portal vein.

106. The right fascicle of cranial mesenteric artery:
a. is represented by the ventral colic artery;
b. is represented only by the dorsal colic artery;
c. is represented only by the jejunal artery;
d. is represented by the middle colic artery;
e. is the ileo-ceco-colic artery.

107. Superficial inguinal lymph nodes in cow are placed:
a. lateral from the base of the tail;
b. cranial from the base of the udder;
c. caudal from the base of the udder;
d. dorsal from the superficial inguinal ring;
e. on the traject of femoral artery.

108. The great glenoidal burelet is synomyn with:
a. the middle shield;
b. the proximal shield;
c. the distal shield;
d. the ungulosesamoidian ligament;
e. the tallest spinous processes of thoracic vertebrae.

109. The insertion point of the deep tendon of flexor is:
a. on the palmar face of the proximal phalanx;
b. on the palmar face of the middle phalanx;
c. on the pisiform;
d. on the caudal side of radius;
e. has no insertion in its traject.

110. Which of the following affirmation regarding the sesamoidian ligament is correct:
a. the most superficial ligament is the oblique ligament;
b. the straight sesamoidian has insertion on the small glenoidal burelet;
c. the deepest ligament is the straight sesamoidian;
d. the cruciate sesamoidian ligament is the most superficial;
e. the most superficial ligament is the straight ligament.