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**DEPARTMENT: PRECLINICAL SCIENCES**

**DISCIPLINE: FORENSIC PATHOLOGY AND DIAGNOSTIC NECROPSY**
**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).**

**1. Predoi, G. și col. – Anatomy of domestic animals (angiology, neurology, sense organs). Lito. AMD-UȘAMV, Bucharest, 2002 (pag. 56-68, 173-186).**
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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.