

**FACULTY OF VETERINARY MEDICINE
ENGLISH GROUP**

**License Exam Guide
SUBJECTS AND BIBLIOGRAPHY**

**Anatomy
Physiology
Pathophysiology
Pharmacology
Semiology
Microbiology
Pathological anatomy**

IASI 2020

I. ANATOMY

1. Where is placed the parotid lymph node?
 - a. deep, within the parotid gland
 - b. to the caudal edge of the parotid gland, under the atlas wing
 - c. **to the cranial edge of the parotid gland, ventral placed by the temporo-mandible joint.**

2. What is the lymph node that collect the primary lymph from the eye?
 - a. the lateral retropharyngeal lymph nodes
 - b. mandibular lymph node
 - c. **parotid lymph node.**

3. Who collects the primary lymph from the mouth and nose?
 - a. **mandibular lymph node**
 - b. parotid lymph node
 - c. the lateral retropharyngeal lymph nodes.

4. The principals (main) axillary lymph nodes are placed:
 - a. **under the humeral insertion of the m. teres major**
 - b. under the humeral insertion of the m. infraspinosus.
 - c. near by the origin of the a. collateralis ulnaris.

5. Which lymph nodes collect the primary lymph from the lateral side of the scapular and arm regions?
 - a. **cervical superficial lymph nodes**
 - b. deep cervical lymph nodes
 - c. the principals axillary lymph nodes

6. Superficial inguinal ring in boars appears as a slot, being located:
 - a. **cranially by pubis, laterally to linea alba**
 - b. over the ischial arch, laterally to the perineal membrane
 - c. on the subanal region.

7. The scrotum of the testicular bursa is innervated by:
 - a. **nn. ilioinguinalis**
 - b. n. pudend
 - c. n. obturator

8. The dorsal artery of the penis in stallions comes from:
 - a. through symmetrical anastomosis of both pudenda arteries (interna and externa)
 - b. **through anastomosis of the cranial, middle and caudal arteries of the penis**
 - c. through anastomosis of the caudal artery with the medial artery of the penis

9. The external cremaster muscle comes from:
 - a. **m. internal abdominal oblique muscle**
 - b. m. external abdominal oblique muscle
 - c. m. rectus abdominis

10. The trunk anesthesia of the dorsal nerve of the penis is performed:
- at the level of ischiadic arch, laterally to the penis radix**
 - on the dorsal face of the penis, in inguinal region.
11. Which nerve innervates the skin of the dorsal face of the carpus in horses?
- n. cutaneus antebrachialis cranialis and n. dorsalis manus**
 - n. dorsalis carpii
 - sensitive branches of the palmary nerves
12. A digitalis communis II is a main artery of the metacarpal region in horses, being placed:
- parallel to the flexors tendons, on the lateral face,
 - parallel to the flexors tendons, on the medial face**
 - on the dorso-medial face of the metacarpus.
13. Where is the place of choice for anesthesia of nerve that innervating the m. interosseus in horses?
- on the medial face of the pisi (os accessory carpal)-metacarpal ligament**
 - lateral by the flexors tendons, in the middle third of metacarpal region
 - on the lateral face of the pisi-piramidalis ligament.
14. What is the dorso-palmary position of the blood vessels and nerves in the digital area at horses:
- nerve, vein, nerve, artery, nerve**
 - nerve, artery, nerve, vein, nerve
 - artery, vein, nerve.
15. Which are the structures that ensure growth in horn length of the box?
- perioplic dermis and coronary dermis**
 - laminar dermis
 - tubules and intertubular horn of the sole.
- 16 Where is projected the base of cecum in horses on the abdominal wall?
- in the right part of the abdomen, in the flank area, from the 15th rib to the coxal tuber**
 - in the left flank, occupying the flank gap, flank cordon and slope of the flank
 - in the ventral half of the right abdominal wall
17. The live at horses, on the right side, has the following projection area on the abdominal wall:
- no projection
 - cranially being delimited by diaphragm, ventrally by the middle line of abdomen and caudally by the 17-th rib.**
 - cranially being delimited by diaphragm, ventrally by middle line of abdomen and caudally by the 10-th rib.
18. Bovine gall bladder is projected on the abdominal wall:
- on the right side, into the 10-th inter ribs space, about 3 cm under the middle line of the abdomen**
 - on the left side, into the 10-th inter ribs space, about 3 cm under the middle line of abdomen

c. no area

19. The rumen in ruminants has the following abdominal wall projection:

- a. on the right side of the abdominal cavity
- b. on the left side of the abdominal cavity**
- c. on the floor of the abdominal cavity

20. The reticulum in cattle is projected on the abdominal wall:

- a. in the left side, between the 6th and the 8th ribs, under the middle line of the abdomen**
- b. in the right side, between 6th and 8th ribs, under the middle line of the abdomen
- c. into the left flank gap.

23. In ruminants, the reticulum takes contact with the ventral wall of the abdomen in:

- a. cattle**
- b. sheep
- c. goats.

24. The lymph from the buccal cavity is collected by:

- a. the mandibular lymph node**
- b. the parotid lymph node
- c. the cranial cervical lymph nodes.

1. Lymph System

The topography of the lymphatic nodes of head, neck, forelimb, thoracic and abdominal in ruminants.

2. The abdominal organs in animals.

Right and left lateral walls projection of the abdominal viscera in ruminants and horses

The splanchnic vasculo-nervous structures and their distribution

3. The hipogastric region in male.

Inguinal region and the testicular pouch

4. The autopodial skeleton, the muscles and structure supporting, the vessels and nerves of the forelimb and hindlimb in horses and ruminants

Bibliography:

1. Dyce M. K., Sack O.W., Wensing G.J.C., Textbook of Veterinary Anatomy. 3rd Ed. Sanders 2002 SUA.
2. König, H.E.& Liebich, H.G. (2004) Veterinary Anatomy of Domestic Mammals, Textbook and Colour Atlas, ISBN 3-7945-2101-3
3. Spataru, M.C. (2019) Veterinary Anatomy, Splanchnology of domestic animals, Ed. "Ion Ionescu de la Brad" din Iași, ISBN 978-973-147-349-9

II. PHYSIOLOGY

1. Which of the following is not always a component of a reflex arc?
 - a. Receptor
 - b. Sensory neuron (CNS afferent)
 - c. Central nervous system (CNS) interneuron
 - d. Motor neuron (CNS efferent)
 - e. Target (effector) organ

2. Which of the following regarding sensory receptors is false?
 - a. They transduce environmental signals, directly or indirectly, into neuronal action potentials.
 - b. A primary receptor can be a specialized peripheral region of a sensory neuron.
 - c. They directly transduce CNS action potentials into physical activity of a target organ.
 - d. They are the initial component of a reflex arc.

3. When the intensity with which a receptor is stimulated is increased, what happens to the frequency of action potentials along the sensory neuron from that receptor?
 - a. Increases
 - b. Decreases
 - c. No change

4. Which of the following is not an example of a segmental reflex?
 - a. Quadriceps stretch reflex
 - b. Pupillary light reflex
 - c. Vestibulospinal postural reflexes

5. An intersegmental reflex arc is one in which:
 - a. The course of the arc is restricted to one or a small number of segments of the CNS.
 - b. No target organ is present.
 - c. No receptor is present.
 - d. The course of the arc traverses several segments of the CNS.

6. Which statement is correct for the muscle spindle.
 - a. It is made of extrafusal muscles surrounded by connective tissue capsule
 - b. It is made of extrafusal muscles with no connective tissue capsule
 - c. It is made of intrafusal muscles surrounded by connective tissue capsule
 - d. It is made of smooth muscles surrounded by connective tissue capsule

7. Gamma motor neurons are:
 - a. Present in the dorsal horn of the spinal cord
 - b. Much larger than alpha motor neurons
 - c. Large motor neurons innervating extrafusal muscle fibers
 - d. Small motor neurons innervating intrafusal muscle fibers

8. The gamma loop is made of:
 - a. Ia primary sensory fibers and alpha motor neurons
 - b. Ia primary sensory fibers and extrafusal muscle fibers
 - c. Gamma motor neurons, Ia primary sensory fibers, and alpha motor neurons
 - d. Gamma motor neurons and intrafusal muscle fibers

9. Axons of the alpha motor neurons of the spinal cord:

- a. Are not myelinated
- b. Pass through the dorsal root to innervate the smooth muscle
- c. Terminate in skeletal muscle fibers as motor end plates
- d. Terminate in intrafusal fibers of muscle spindles

10. Passive stretching of the muscle by tapping its tendon stretches intrafusal muscle fibers and decreases firing of Ia sensory fibers.

- a. True
- b. False

Correct answers:

- 1. c
- 2. c
- 3. a
- 4. c
- 5. d
- 6. c
- 7. d
- 8. c
- 9. c
- 10. b

11. Cell bodies of the sympathetic postganglionic neurons that play a role in pupillary dilation are located in the:

- a. Intermediolateral nucleus
- b. Cranial cervical ganglion
- c. Ciliary ganglion
- d. Motor nucleus of the oculomotor nerve

12. A tissue innervated solely by the sympathetic division is the:

- a. Blood vessels of skeletal muscle
- b. Gastrointestinal tract
- c. Heart
- d. Bronchiolar smooth muscle

13. Which statement regarding the autonomic innervation of the adrenal medulla is true?

- a. The adrenal medulla is innervated by both the sympathetic and parasympathetic divisions
- b. The adrenal medulla is innervated only by the parasympathetic division
- c. Sympathetic preganglionic neurons innervate chromaffin cells in the medulla
- d. Chromaffin cells release ACh in response to their preganglionic stimuli

14. Pupillary contraction is mediated by:

- a. Cranial cervical ganglion
- b. Parasympathetic nucleus of the vagus nerve
- c. Cervicothoracic ganglion

d. Parasympathetic nucleus of the oculomotor nerve

15. Horner's syndrome results from a lesion involving:

- a. Vagus nerve
- b. Cervicothoracic ganglion
- c. Lumbar spinal cord
- d. Pelvic nerve

16. Absence of voluntary micturition associated with strong resistance to manual evacuation of bladder suggests that the lesion most likely involves:

- a. Spinal cord segments T3–T5
- b. Spinal cord segments S1–S3
- c. Hypogastric nerve
- d. Pudendal nerve

17. Sympathetic postganglionic neurons innervating the heart release the neurotransmitter _____ that binds to _____ receptors.

- a. Acetylcholine, muscarinic (M)
- b. Acetylcholine, nicotinic
- c. Norepinephrine, adrenergic (β 1)
- d. Norepinephrine, adrenergic (β 2)

18. A dog shows the following clinical signs: pupillary dilation of the right eye, lateral strabismus of the right eye and drooped right eyelid. The lesion likely involves:

- a. Pons
- b. Midbrain
- c. Medulla oblongata
- d. Spinal cord

19. Which of the following is not a feature of Horner's syndrome?

- a. Miosis
- b. Strabismus
- c. Third eyelid protrusion
- d. Enophthalmos

20. Choose the incorrect statement below:

- a. A ganglion is a collection of nerve cell bodies outside the CNS.
- b. Acetylcholine is a chemical transmitter at the parasympathetic postganglionic-to-target organ synapse.
- c. Sympathetic postganglionic neurons are usually longer than those of the parasympathetic system.
- d. The adrenal medulla secretes mostly norepinephrine and relatively little epinephrine.

21. A chemical neurotransmitter between preganglionic and postganglionic neurons of the parasympathetic component of the autonomic nervous system is:

- a. Norepinephrine.
- b. Acetylcholine.
- c. Epinephrine.

d. Serotonin.

22. A neurotransmitter most often found at the synapse between sympathetic postganglionic neurons and their targets is:

- a. Norepinephrine.
- b. Epinephrine.
- c. Acetylcholine.
- d. Dopamine.

23. Horner's syndrome is caused by the loss of:

- a. Sympathetic innervation to the eye.
- b. Parasympathetic postganglionic innervation to the eye.
- c. Peripheral muscarinic receptors.
- d. Vagus nerve fibers.

11. b

12. a

13. c

14. d

15. b

16. a

17. c

18. b

19. b

20. d

21. b

22. a

23. a

24. The receptor organ detecting rotary acceleration and deceleration of the head is located in the:

- a. Utricle
- b. Sacculle
- c. Ampulla of the semicircular duct
- d. Scala media of the cochlea
- e. Vestibular nuclear complex

25. Which two of the following are not generally associated with the macula?

- a. Otoliths
- b. Cupula
- c. Detection of linear acceleration of the head
- d. Hair cells
- e. Normal nystagmus

26. You are presented with a dog with a head tilt, compulsive circling, and spontaneous nystagmus. The most likely site of this dog's pathological lesion is the:

- a. Oculomotor nucleus.

- b. Vestibular system.
- c. Cervical spinal cord.
- d. Spinal accessory (eleventh cranial) nerve.

27. Which one of the following statements is false?

- a. All hair cells of a single utricle are oriented in the same direction with respect to their cilia.
- b. In a single vestibular hair cell, displacement of the cilia toward the largest cilium increases the firing rate of the hair cell's associated sensory neuron.
- c. A gelatinous layer is associated with the vestibular macula.
- d. The vestibular nuclear complex is located in the brainstem.

24. c

25. b,e

26. b

27. a

28. Erythropoiesis is stimulated by (2 correct answer):

- a. high level of the blood oxygen
- b. low level of the blood oxygen
- c. endocrine function of the kidney
- d. endocrine function of the spleen

29. Reticulocyte is a stage of the development for:

- a. Erythrocyte
- b. Lymphocyte
- c. Granulocyte
- d. Thrombocyte

30. Intravascular hemolysis has occurred and hemoglobinemia is apparent, so:

- a. Hemoglobinuria will never be present
- b. Hemoglobinuria will always follow
- c. Hemoglobinuria presence will depend on the amount of hemolysis

31. Icterus is very visible in a dog. Which one of the following would indicate obstructive jaundice as being part of the problem?

- a. Dark yellow urine
- b. No urobilinogen in urine
- c. Recent episode of hemolytic disease

32. Which of the following statements is not true?

- a. Erythrocyte formation takes place mainly in the marrow of long bones during adult life
- b. Erythrocyte formation may be stimulated by an increase in arterial O₂ content
- c. Erythrocyte formation may be reduced in chronic renal failure
- d. Erythrocyte formation may slow down following gastrectomy

33. Which of the following statements is true?

- a. people of blood group AB, Rhesus positive are referred to as 'universal donors' because they carry no antibodies against relevant red cell antigens in their blood

- b.** people of blood group AB, Rhesus positive are referred to as ‘universal donors’ because they carry all the relevant blood group antigens on their red cells
- c.** people of blood group AB, Rhesus positive are referred to as ‘universal recipients’ because they carry all the relevant blood group antigens on their red cells
- d.** people of blood group AB, Rhesus positive are referred to as ‘universal recipients’ because they carry no antibodies against relevant red cell antigens in their blood

28. bc

29. a

30. c

31. b

32. b

33. d

34. In which of the following respects is fermentative digestion different from glandular digestion?

- a. Enzymes are not involved in fermentative digestion.
- b. Chemical bonds are not split by hydrolysis in fermentative digestion.
- c. Only carbohydrates are digested by fermentative digestion.
- d. Substrates are more extensively altered in fermentative digestion than in glandular digestion.

35. In a comparison of hindgut fermentation and forestomach fermentation, which of the following statements is true?

- a. The microbial populations are considerably different, but the products of digestion are the same.
- b. The microbial populations are the same, but the products of digestion are considerably different.
- c. Both the microbial populations and the digestion products are similar.
- d. Structural carbohydrates of plants are not digested by hindgut fermentation.

36. The three VFAs—acetate, propionate, and butyrate—are:

- a. Net-reaction products of the fermentative action of the entire rumen biomass.
- b. The individual products of cellulose, starch, and hemicellulose digestion, respectively.
- c. The individual products of bacterial, protozoal, and fungal digestion, respectively.
- d. Volatile products that leave the rumen with the gas phase during eructation.

37. Matching protein and energy availability in the rumen is an important nutritional goal in feeding ruminants. Which of the following completions of this statement concerning protein and energy availability in the rumen is false? Diets well matched in available protein and energy result in:

- a. The most efficient use of energy for microbial growth.
- b. Maximal delivery of protein to the host.
- c. Minimal breakdown of protein in the rumen.
- d. Loss of a minimal amount of dietary amino acids due to formation of excess ammonia.

38. The eructation reflex:

- a. is initiated by distension of the reticulum

- b. is a contraction which start in the caudal rumen and move forward from the caudo- dorsal blind sac in order to drop the fluid level around the cardia region
- c. is stimulated by ingestion of lucerne
- d. allows the cow to bring large particle material from the rumen to the mouth

39. The rumination reflex:

- a. is initiated by presence of a fibrous material that floats on the rumen fluid
- b. don't include regurgitation
- c. includes eructation
- d. is a contraction which start in the caudal rumen and move forward from the caudo-dorsal blind sac in order to drop the fluid level around the cardia region

40. Reticular groove reflex:

- a. closes the reticulo-omasal orifice and avoids the passage of cold milk into the omasum
- b. shunts the milk from the esophagus directly into the omasum in order to avoids having milk enter the rumen
- c. is blocked by suckling action and the presence of milk proteins and electrolytes
- d. is blocked by milk proteins and electrolytes

34. d

35. c

36. a

37. c

38. b

39. a

40. b

1. The Concept of a Reflex. Reflex and Rhythmic Motor Control
2. Autonomic Nervous System Physiology
3. Vestibular system
4. Erythrocytes
5. Ruminant Digestive Physiology

Bibliography:

1. W. O. Reece, H. H. Erickson, J. P. Goff, E.E. Uemura, 2015, Dukes' Physiology of Domestic Animals, Thirteenth Edition, Wiley & Sons, Inc.
2. Bradley G. Klein, 2013, Cunningham's Textbook of Veterinary Physiology, Fifth Edition, Elsevier Saunders.
3. Ana Chelaru, Geta Pavel, 2005 – Physiology – simulation models, Ed. Tehnopress, Iasi.

III. PATHOPHYSIOLOGY

1. The classic pathways of action in the general adaptation syndrome are the following, with one exception:
 - a. *parasympathetic autonomic nervous system*;
 - b. the hypothalamo-pituitary-cortico-adrenal system;
 - c. The sympatho-adrenergic system.

2. Are considered stressful agents all environmental factors that determine at the organism level:
 - a. inhibition of the reticulo-cortico-reticulat circuit;
 - b. the decrease of ACTH secretion;
 - c. *stimulation of the hypothalamo-pituitary-cortico-adrenal axis*.

3. The reactions from the resistance phase of the general adaptation syndrome are the result of the intervention of the following mechanisms:
 - a. the decrease of the secretory activity of the corticoadrenals;
 - b. stimulation of the parasympathetic vegetative system;
 - c. *intensification of the secretory activity of the corticoadrenals*.

4. In the acute solicitations of the body there is an increase in the secretion of:
 - a. dopamine;
 - b. *adrenalina*;
 - c. lipomoduline.

5. In the general adaptation syndrome some neuroendocrine systems are activated which result in:
 - a. decrease of the activity of the medullary adrenal;
 - b. decrease of glucocorticoid hormone secretion;
 - c. *increased glucocorticoid secretion*.

6. The resistance phase of the general adaptation syndrome is characterized by:
 - a. increasing the resistance to the action of all the aggressors;
 - b. decreasing the resistance to the action of all the aggressors;
 - c. *increasing the resistance of the body to the aggressor who triggered the reaction*.

7. The phenomena of counter-shock in the alarm phase of the general adaptation syndrome are represented by:
 - a. hypotension, hypothermia, bradycardia, bradypnea;
 - b. tachycardia, hypotension, hypoglycemia;
 - c. *tachycardia, hyperglycemia, polyglobulia*.

8. In the general adaptation syndrome, the hypertrophy and hyperplasia of the corticoadrenals occur in:
 - a. the alarm phase;
 - b. *the resistance phase*;
 - c. the exhaustion phase.

9. The definite causes of shock are the following:
 - a. all polyglobules;

- b. hyperbilirubinemias;
- c. significant bleeding.**

10. The adaptive-compensatory reactions in shock concern the following:

- a. centralization of circulation and decrease of cardiac output;
- b. auto-transfusion dependent on the predominantly vagal reaction;
- c. peripheral constriction with blood redistribution following catecholamine discharges.**

11. In shock, at the level of lipid metabolism, the following changes occur, with one exception:

- a. increased level of ketoacids, following the intensification of lipolysis;
- b. increased metabolic alkalosis;**
- c. the worsening of the hemodynamics due to the increase in blood viscosity.

12. Hyperlactacidemia in shock represents:

- a. an index directly proportional to the severity of the shock;**
- b. a treatment modification index;
- c. a shock reversibility factor.

13. The increase of blood volume in shock is achieved by the following mechanisms with one exception:

- a. mobilization of blood from deposits;
- b. integration of interstitial liquids;
- c. stimulation of erythropoiesis.**

14. The irreversible shock phase is characterized by the following changes:

- a. increasing blood pressure;
- b. alkalosis phenomena;
- c. activation of lysosomal enzymes and self-digestion.**

15. The changes of the protein metabolism in shock are the following:

- a. the decrease of amino acids;
- b. increasing ammonia;**
- c. albumin growth.

16. In shock, the cell perfusion is most accurately mirrored by:

- a. the blood pressure value;
- b. the extracellular concentration of potassium;
- c. pH and plasma concentration of lactic acid.**

17. In shock, hemodynamic disorders at the level of microcirculation are dependent on:

- a. local acidosis;**
- b. the total volume of blood;
- c. the activity of vasomotor centers.

28. The central pathophysiological element of any form of shock is:

- a. decrease of the actual circulating blood volume;**
- b. increase of the actual circulating blood volume;
- c. decrease in total blood volume.

19. The adaptive-compensatory hemodynamic changes in shock are aimed at:
- vascular bed growth, increased heart activity and blood volume;
 - decreasing the vascular bed, increasing the activity of the heart and blood volume;***
 - peripheral constriction and decrease of heart activity.
20. All types of shock start with:
- alteration of a hemodynamic factor;***
 - profound alteration of metabolism;
 - both situations.
21. In shock, at tissue level, there will be a decrease of:
- pH;***
 - ammonia;
 - lactic acid.
22. Increased ESR in inflammation is a consequence of:
- albumin increase;***
 - alphaglobulin decrease;
 - increase in the number of red blood cells.
23. The pain in inflammation is the result of the action of the following mediators:
- histaminei;
 - bradikininei;***
 - fibrinogenului.
24. The early growth in permeability in the inflammatory site is carried out under the action of:
- histamine and serotonin;***
 - prostaglandins and leukotrienes;
 - interleukin 1.
25. The mediators with vasodilatation effect in the inflammatory site are as follows:
- adrenaline;
 - noradrenaline;
 - histamine and serotonin.***
26. Activation of A₂ phospholipase in the phagocytes results in the following reactions:
- limiting the release of lysophospholipids;
 - decrease of prostaglandin synthesis under the action of cyclooxygenases;
 - amplification of vasculo-exudative and chemotactic phenomena.***
27. The amplification of the vascular-exudative phenomena in the inflammatory site are the **result of the following interventions:**
- increased concentration of histamine, serotonin, prostaglandins;***
 - decreased concentration of kinins and prostaglandins;
 - increase in glucocorticoid concentration.
28. In general, at the level of the inflammatory site, the chemical mediators of inflammation produce:
- decrease of vascular permeability;

- b. diminishment of blood flow;
- c. increased blood flow and vascular permeability.**

29. The general reactions in inflammation are as follows:

- a. fever;**
- b. decreased hepatic glycoprotein secretion;
- c. leukopenia.

30. In the inflammatory site, activation of XIIth Hageman factor determines

- a. release of prostaglandins;
- b. activation of arachidonic acid metabolites;
- c. activation of complementary cascade, coagulation and fibrinolysis systems, plasma kinin system;**

31. Interleukin 1 also called granulocyte pyrogen mediates inflammation through:

- a. decrease of hepatic glycoprotein secretion;
- b. decrease of leukocyte production;
- c. stimulation of the hypothalamus and hyperthermia.**

32. The febrile reaction is:

- a. a general non-specific adaptive-defensive reaction of the organism;**
- b. a disturbance of the thermogenesis-thermolysis balance, by increasing the heat production;
- c. a disturbance of the thermal balance due to the inefficiency of the thermolysis.

33. The following factors have a pyrogenic effect:

- a. histamina;
- b. bacteria, fungi;**
- c. kininele.

34. The origin of endogenous pyrogen is:

- a. leucocitara;**
- b. eritrocitara;
- c. hipotalamica.

35. The febrile reaction is triggered by:

- a. heated and humid environment;
- b. the action of pyrogenic factors;**
- c. discharges of catabolic hormones.

36. The mechanism of overheating is represented by:

- a. functional restructuring of the thermoregulation center;
- b. diminution of thermogenesis;
- c. amplification of thermogenesis and or diminution of thermolysis.**

37. The temperature increase phase of the febrile reaction is characterized by:

- a. increasing of thermolysis;
- b. intensification of thermogenesis;**
- c. peripheral vasodilation.

38. Increased hematocrit (PCV), plasma proteins, intracellular compartment concomitant with decreased plasma volume means:

- a. isotonic dehydration;
- b. hypotonic dehydration;**
- c. hypertonic dehydration.

39. Decreased hematocrit (PCV), plasma proteins, intracellular compartment concomitant with increased plasma volume means:

- a. hypotonic hyperhydration;
- b. hypertonic dehydration;
- c. hypertonic hyperhydration.**

40. The lack of thirst sensation is specific to the following disorder of the hydroelectrolytic balance:

- a. extracellular isotonic dehydration;
- b. extracellular hypertonic dehydration;
- c. extracellular hypotonic dehydration.**

41. The compensatory mechanisms in isotonic dehydration are:

- a. those who intervene in hypovolemia;**
- b. increasing the parasympathetic activity;
- c. hyposecretion of ADH and aldosterone.

42. The mechanisms of edema development include:

- a. decrease in intravascular hydrostatic pressure;
- b. increase of intravascular oncotic pressure;
- c. decrease of oncotic pressure in hypoalbuminemia.**

43. The consequences of hyperkalemia are represented by:

- a. metabolic disorders translated by metabolic alkalosis;
- b. digestive disorders;
- c. cardiac disorders manifested by arrhythmias.**

44. The consequences of hyperphosphatemia are:

- a. tetanic contractions secondary to hypocalcemia;**
- b. hematological changes characterized by disturbance of the structure and function of the erythrocytes;
- c. metabolic changes translated by metabolic acidosis.

1. General Adaptation Syndrome
2. Shock Pathophysiology
3. Inflammation Pathophysiology
4. Thermal Homeostasis Pathophysiology
5. Hydro-electrolytical Balance Pathophysiology

Bibliography:

1. Pathophysiology – Lecture notes

IV. SEMIOLOGY

1. Emprosthotonus is:

- a. **An exaggerated occipito-cervical flexion**
- b. Keeping the head on a horizontal line
- c. Turning the head around the neck

2. Incoercible vomiting refers to:

- a. **Exhausting, almost continuous vomiting**
- b. Repeated vomiting (also called vomiturition)
- c. Repeated vomiting interrupted by cough

3. Conformation is revealed by:

- a. **The rapport between various body regions and segments**
- b. The anatomical and biochemical structure of the body
- c. The general aspect of the animal

4. The temperament consists of:

- a. The mimic or facial expression
- b. **The way the animal reacts to different stimuli from the environment**
- c. The position that the animal adopts in relation to the external environment

5. Pulsions can be defined as:

- a. Different positions that the animal adopts depending on the illness status
- b. Variations of the pulse
- c. **Movements with a uni-sense direction**

6. In dogs, morphologic proteinuria has a origin:

- a. pre-renal and renal
- b. Strictly renal
- c. **Vesical (from the urinary bladder)**

7. The urinary sediment is examined:

- a. Macroscopically after it has acidified
- b. **Microscopically on a slide**
- c. Macroscopically after it has been centrifuged and acidified

8. Calcium oxalate crystals have a microscopic aspect of:

- a. A prismatic shape
- b. **An letter envelope**
- c. A hexagonal shape

9. Glerous (glere) vomiting means:

- a. High-frequency vomiting
- b. **Vomiting with a lot of mucus**
- c. Vomiting blood

10. 3rd-type dysphagia is caused by:

- a. **Esophageal lesions**

- b. The presence of a foreign body in the pharynx
- c. Lesions of the teeth and tongue

11. The crop/crow (frill) of the esophagus refers to:

- a. The necrotic inflammation of the esophagus
- b. The obstruction of the esophagus caused by a foreign body

c. The sack-like dilatation of the esophagus

12. The cardiac auscultation focuses are:

- a. Auscultation areas of the valvular sounds

b. The projection of the cardiac orifices on the surface of the thorax

- c. The projection of the excito-conductor system's focuses

13. In listening for heart sounds, when doubled, the number 1 sound can be heard like:

a. dup-dup-lup

- b. dup-lup- dup

- c. dup-lup-lup

14. Tachycardia can be caused by:

- a. A state of vagotonia

b. A state of sympathicotonia

- c. A state of cortical inhibition

15. Choose the correct option (frequency value):

a. The cardiac frequency of dogs is 70-120/min

b. The cardiac frequency of cows is 40-80/min

- c. The cardiac frequency of horses is 16-32/min

16. Pick the correct answer regarding lumbago:

- a. It is the kyphosis of the dorso-lumbar spine due to gastric pain

b. It is the contracture of the dorsal region due to vertebral pain

- c. It is the contour of the lumbar region due to vertebral pain

17. The orthopneic position adopted by an animal consists of:

- a. A lifted head and dyspneic breathing

- b. A tetanic attitude and a lifted head

c. An elongated head on the neck and keeping the legs apart from each other

18. How is the coordination of movements examined?

a. By inspection and with the help of the Babinski, Romberg tests

- b. Using the test of the inclined plane

- c. By inspection and with the help of the Falke, Argyl-Robertson tests

19. Forced movements are expressed by:

a. Dromomania

- b. Plerodynia

c. Pulsions

20. Bradykinesia refers to:

- a. A loss in sensitivity
- b. A loss in contraction capability**
- c. A loss in moving capability

21. The Romberg test is applied for:

- a. Differentiating vestibular ataxia from cerebellar ataxia**
- b. Differentiating cerebellar ataxia from bulbar ataxia
- c. Differentiating medular ataxia from bulbar ataxia

22. Pleurothotonus means:

- a. Head spinning and looking toward the sky
- b. Orienting the head toward the abdomen and vomiting
- c. Maintaining the head toward the thorax**

23. A quail-like sound is due to:

- a. An extension of cardiac sounds
- b. The 2nd sound being doubled**
- c. An extension of the 1st sound

24. The special examination methods applied to the esophagus are:

- a. Palpation, probing, and an X-ray examination
- b. An X-ray examination, probing, and endoscopy**
- c. Esophagoscopy, puncture, and probing

25. Pick the correct answer regarding opisthotonus:

- a. Keeping the head switched to either side due to otitis
- b. Keeping the head in hyperextension due to vertebral lesions**
- c. Keeping the head bowed down due to sinusitis

Correct answers: 1a, 2a, 3a, 4b, 5c, 6c, 7b, 8b, 9b, 10a, 11c, 12b, 13a, 14b, 15a and b, 16b, 17c, 18a, 19 a and c, 20b, 21a, 22c, 23b, 24b, 25b

Semiology

1. General examination of the animal. The gums (superficial mucosae), lymph nodes
2. Urine examination. Proteinuria, the urinary sediment examination
3. Digestive apparatus examination. The vomiting (emesis) oesophagus examination and semiology, stomach (in monogastrics) examination and semiology
4. Cardiovascular apparatus examination. Heart auscultation (without arrhythmias, without cardiac pathologic sounds)
5. Nervous system examination. The behavior and the motility examination

Bibliography:

1. Vulpe V., 2016 - General veterinary semiology, PIM, Iași
2. Vulpe V., 2020 – Veterinary examination of the organs and systems, PIM, Iași

V. PHARMACOLOGY

1. What is the difference between a bactericidal and a bacteriostatic drug ?

A bactericidal is an agent with the ability to kill bacteria while a bacteriostatic has the ability to inhibit the growth or reproduction of bacteria.

2. Antiseptic drugs - definition: **substances that kill or inhibit the growth of microorganisms on living tissue**

3. Disinfectants kill or inhibit the growth of microorganisms on **b** objects.

- a. Animate b. **Inanimate**

4. To sanitize means **make clean and hygienic**

5. To sterilize means **removal/destruction of all microbes**

6. List at least 3 disinfecting agents: **phenol, quaternary ammonium compounds, aldehydes, alcohols, halogens, hydrogen peroxide, soaps/detergents**

7. Physically removing of organic material from a surface isn't necessary prior to apply a disinfectant? **False/True**

8. Sporicidal activity means: **substance that kills spores, which are especially resistant to chemicals**

9. Virucidal activity means? **substance that kills viruses/drugs that prevent viral penetration of the host cell, or inhibit the virus's production of DNA or RNA**

10. Biostatic activity means? **inhibition of the growth or reproduction of bacteria**

11. Biocidal activity means? **capacity of a drug to "kill" microorganisms**

12. Spectrum of action means? **the range of bacteria on which an antibiotic is effective**

13. Broad spectrum means? **antibiotics effective against G+ and G- bacteria**

14. Narrow spectrum means? **antibiotics that are effective against either G+ or G- bacteria. Not Both!**

15. Antibiotic residue means? **presence of an antibiotic or its metabolites in animal tissues or food products.**

16. Antibiotics can only be either bacteriostatic or bacteriocidal; they can't be both? **False/True**

17. A broad-spectrum antibiotic is effective against all bacteria? **False/True**

18. Failing to use an antibiotic for an adequate period of time can lead to antibiotic resistance? **False/True**

19. Bacteria can transfer genes for antibiotic resistance to different, unrelated bacteria?
False/**True**

20. What is a good example of antibiotics responsibly use in animals?
a. Using a broad spectrum antibiotic instead of a narrow spectrum antibiotic to have a more powerful treatment as quickly as possible.
b. Prescribing antibiotics prior to vaccination to prevent infection.
c. Avoiding use of antibiotics for bacterial infections unless there is a secondary, viral infection.
d. Choosing the antibiotic based on culture and susceptibility testing.

21. What is the most important factor in antibiotic selection?
a. Age of the animal
b. A defined indication (justification) for use and choice of antibiotics
c. Previous experience with animal/herd/flock and response to antibiotics in similar situation.
d. Price

22. A class of antibiotics effective against bacteria, coccidia, and Toxoplasma is?
a. Sulfonamides
b. Cephalosporins
c. Penicillins
d. Fluoroquinolones

23. Antibiotics that inhibit bacterial protein synthesis include:
a. Aminoglycosides
b. Penicillins and Cephalosporins
c. Chloramphenicol
d. Tetracyclines

24. Antibiotics that inhibit nucleic acid enzymes include:
a. Sulfonamides
b. Cephalosporins
c. Penicillins
d. Fluoroquinolones

25. Antibiotics that interfere with bacterial metabolism includes:
a. Sulfonamides
b. Cephalosporins
c. Penicillins
d. Fluoroquinolones

26. Antibiotics that inhibit bacterial cell wall synthesis includes:
a. Cephalosporins
b. Penicillins
c. Fluoroquinolones
d. Bacitracin

27. Penicillin G is given?

- a) Orally
- b) Subcutaneously
- c) Parenterally**
- d) Intramuscular

28. Antibiotics that are susceptible to inactivation by beta-lactamase include:

- a. Aminoglycosides
- b. Penicillins**
- c. Cephalosporins**
- d. Chloramphenicol

29. Third-generation cephalosporins tend to have a better activity against Gram (-) bacteria than first-generation cephalosporins ? False/**True**

30. Cephalosporins can trigger an allergic response in animals allergic to ___ **Penicillin**

31. Cefazolin is a ___ **cephalosporin antibiotic**

32. What potential side effect of penicillins and cephalosporins can occur in rabbits and rodents? _____ **fatal Diarrhea (it disrupts their normal gut flora and kills the good bacteria)**

33. Fluroquinolones examples: ___ **enrofloxacin (Baytril), orbifloxacin, difloxacin, marbofloxacin, sarafloxacin, ciprofloxacin**

34. Aminoglycosides are used to treat infections caused by

- a. Gram positive bacteria
- b. Gram negative bacteria**
- c. Anaerobic bacteria
- d. Systemic fungi

35. Aminoglycosides are highly nephrotoxic? False/**True**

36. Aminoglycosides examples: ___ **gentamicin, amikacin, streptomycin, tobramycin, neomycin**

37. What group of antibiotics currently have many bacteria that are resistant to them due to being used for so many years? _____ **Tetracyclines**

38. Tetracycline antibiotics should not be given to growing animals because they can cause

- a. Bubbles in joint cartilage
- b. Yellow discoloration of teeth**
- c. Stunted growth
- d. Poor hair coat

39. Chloramphenicol is contraindicated in ___ **food producing animals**

40. Antibiotics used for external infections: _____ **polypeptides**

41. Bacitracin disrupts the bacterial _____ and is effective against gram _____ bacteria?
- nucleus / positive
 - cell membrane / negative
 - cell wall / positive**
 - cell wall / negative
42. An example of a macrolide is erythromycin and it is used to treat:
- Penicillin-resistant infections**
 - Only gram-negative bacteria
 - Resistant infections
 - Narrow spectrum, gram-positive bacteria
43. Lincosamide antibiotics: ___ **lincomycin, clindamycin**
44. Why is chloramphenicol banned in food-producing animals?
- It can cause birth defects in calves
 - It can cause birth defects in people
 - It can cause bone marrow suppression in people**
 - It can cause antibiotic resistance
45. Glycopeptide antibiotics are used to treat ___ **infections that are resistant to penicillin and cephalosporins**
46. Glycopeptide antibiotics: ___ **vancomycin**
47. Should you use antimicrobials for any mild infection? True/**False**
48. Antifungals are chemicals used to treat diseases caused by?
- Fungi**
 - Virus
 - Bacteria
 - People
49. The main classes of antifungal drugs are ___ **Polyenes, Imidazole antifungal, agents, Antimetabolic antifungal agents.**
50. Ketoconazole, fluconazole, itraconazole are ___ **imidazole agents**

Farmacology

- Chapter 32. Antiseptics and Disinfectants
- Chapter 33. Potentiated Sulfonamides
- Chapter 34. Beta-Lactam Antibiotics: Penicilins, Cephalosporin
- Chapter 35. Tetracycline Antibiotics:
- Chapter 36. Aminoglycoside Antibiotics:
- Chapter 37. Chloramphenicol and derivatives, Macrolide:

Chapter 38. Fluoroquinolone:
Chapter 39. Antifungal drug:

Bibliography

Veterinary Pharmacology & Therapeutics. Ninth edition. Jim E. Riviere and Mark G. Papich, 2009

VI. MICROBIOLOGY

1. Bacteria are microorganisms with a structure:
 - a. acellular (subcellular)
 - b. unicellular prokaryotic type**
 - c. multicellular eukaryotic type

2. The bacterial cell has dimensions of the order:
 - a. nanometers
 - b. micrometers**
 - c. millimeters

3. The genetic material of bacteria is represented by:
 - a. a chromosome and plasmids of DNA nature**
 - b. a different number of chromosomes depending on the species
 - c. a DNA or RNA genome

4. Bacteria that have a comma or S shape are called:
 - a. cocci
 - b. bacilli
 - c. Vibrio**

5. Bacteria made up of several flexible coils are called:
 - a. vibrio
 - b. filaments
 - c. spirochaete**

6. Spherical bacteria (cocci) can form groups:
 - a. strepto, diplo, staphylo**
 - b. palisades
 - c. Chinese ideograms

7. It is the result of the division of the cocci into parallel planes, with the persistence of the connections between the cells during several generations:
 - a. diplococci
 - b. staphylococci
 - c. streptococci**

8. The bacterial filament represents:
 - a. a form of the bacterial cell

- b. a plasmodium**
 - c. a form of resistance

- 9. The cell wall is a component:
 - a. present in all bacteria:
 - b. present in most bacterial species**
 - c. present in a small number of bacterial species

- 10. Bacteria without a cell wall are part of the subdivision:
 - a. Firmicutes
 - b. Gracilicutes
 - c. Mollicutes**

- 11. Gives resistance to the cell wall of bacteria:
 - a. lipopolysaccharides (LPS)
 - b. peptidoglycan network (murein)**
 - c. lipoproteins

- 12. The lipopolysaccharide component (LPS) in the external membrane of the cell wall in Gram-negative bacteria depends on:
 - a. enzyme with a role in metabolism
 - b. antiphagocytic factor
 - c. endotoxin**

- 13. In the presence of penicillin or lysozyme they turn into protoplasts:
 - a. Gram-positive bacteria**
 - b. Gram-negative bacteria
 - c. acid-resistant bacteria

- 14. In the presence of penicillin or lysozyme they turn into spheroplasts:
 - a. Gram-positive bacteria
 - b. Gram-negative bacteria**
 - c. acid-resistant bacteria

- 15. They have the ability to resynthesize their cell wall:
 - a. spheroplasts**
 - b. protoplasts
 - c. both spheroplasts and protoplasts

- 16. Which of the components of the bacterial cell ensures the maintenance of its shape:
 - a. the capsule, glycocalyx
 - b. the cell wall**
 - c. the cytoplasmic membrane

- 17. Which of the bacterial cell components are not present in all bacteria:
 - a. the cytoplasmic membrane
 - b. genome (nucleoid, chromosome)
 - c. capsule**

18. The organelles present in the cytoplasm of the bacterial cell are:
- Golgi apparatus
 - mitochondria
 - Palade granules**
19. The organelles present in the cytoplasm of the bacterial cell are:
- endoplasmic reticulum
 - Golgi apparatus
 - ribosomes**
20. In nature, bacteria can exist:
- only in the vegetative state (the bacterial cell itself)
 - only in spores form
 - both in the vegetative state and in the spores form**
21. Bacterial cell nucleus (nuclear genetic material or nucleoid) consists of:
- Single-stranded DNA, 2-4 chromosomes and is bounded by the membrane
 - Double-stranded DNA, a single chromosome and is not bounded by a nuclear membrane**
 - RNA and polyglucides
22. Plasmids are specific structures of the bacterial cell, which consist of:
- cytoplasmic membrane invagination
 - adhesion organelles
 - small DNA molecules**
23. Bacteria mobility is given by:
- pili
 - fimbriae
 - cilia (flagella)**
24. Fimbriae have a role in:
- absorption of nutrients from culture media
 - bacteria fixation on the surface of epithelia and other solid substrates**
 - mobility
25. Cilia (flagella) bacterial have a role in
- bacterial cell adhesion to various substrates
 - mobility**
 - genetic material transfer in the conjugation process
26. Most bacteria multiply by:
- spores
 - direct division (scissiparity)**
 - burgeoning
27. Type of the bacterial antimicrobial resistance induced by plasmids "R" is :
- "one steep"
 - „ multi steep"**

- c. not transmissible from one bacterial strain to another by conjugation
35. One of the mechanisms of bacterial antimicrobial resistance encoded by plasmids "R" consists of:
- capsule synthesis inhibition
 - cilia synthesis inhibition
 - enzymes synthesis that inactivate antibiotics**
28. They are able to multiply at low temperatures, close to zero degrees:
- barophilic bacteria
 - psychrophilic bacteria (cryophilic)**
 - halophilic bacteria
29. The bactericidal effect of the high temperatures used in sterilization is mainly due to:
- bacterial cells dehydration
 - enzymatic proteins denaturation**
 - the cell wall destruction
30. Bacteria capable of multiplying at temperatures between 80° C-105° C are called:
- mesophilic bacteria
 - hyperthermophilic bacteria**
 - osmophilic bacteria
31. The relationship between the rumen microbiota and the host animal is of the type:
- symbiotic**
 - commensal
 - antagonistic (conflictual)
32. Free coagulase confers pathogenicity to staphylococci by:
- phagocytosis inhibition**
 - lysis of the fibrin barrier around inflammatory outbreaks
 - red blood cells destruction
33. There are antiphagocytic factors that inhibit phagocyte digestion:
- bacterial capsule, free coagulase of staphylococci, mobility
 - "heart-factor" in bacteria of Mycobacterium genus, LPS in Gram-negative bacteria**
 - collagenase
34. The bacterial toxins responsible for digestive disorders encountered in food poisoning are:
- collagenase
 - the hemolysines
 - enterotoxins**
35. Synthesizes carotenoid pigments (white → orange), not diffusible in the media:
- streptococci
 - staphylococci**
 - colibacilli
36. Selective media for staphylococci contain:

- a. sodium azide
 - b. NaCl 6,5 %**
 - c. bright green
37. They are halophilic bacteria:
- a. clostridia
 - b. leptospire
 - c. staphylococci**
38. The etiological agent of sheep gangrenous mastitis is:
- a. *Staphylococcus aureus***
 - b. *Streptococcus agalactiae*
 - c. *Clostridium perfringens*
40. The main pathogenicity factor of *Bacillus anthracis* is:
- a. the spore, due to heat resistance
 - b. capsule, which opposes phagocytosis (antiphagocytic role)**
 - c. cilli, due to mobility
41. Anthrax diagnosis in live animals is made by:
- a. Ascoli reaction;
 - b. abundant blood cultures
 - c. coprocultures
42. Morphological *Bacillus anthracis* is:
- a. a Gram-negative cocobacillus, frequently bipolar stained, non-capsulated
 - b. a large Gram-positive bacillus, with the ends cut off, grouped in chains, encapsulated**
 - c. a large Gram-positive bacillus, with the ends cut off, grouped in chains, non-capsulated
43. To isolate bacteria of the genus *Clostridium*, pathological materials are inoculated on media:
- a. hypochlorite
 - b. anaerobic**
 - c. glycerin 2%
44. The only encapsulated and unciliated species of the genus *Clostridium* is:
- a. *Clostridium tetani*
 - b. *Clostridium botulinum*
 - c. *Clostridium perfringens***
45. The identification of the toxin produced by the species *Clostridium perfringens* is done by:
- a. Ascoli reaction
 - b. mouse seroneutralization**
 - c. ligated loop test
46. The spore in *Cl. tetani* is:

- a. centrally placed and doesn't deform the vegetative form
- b. terminally placed and does not deform the vegetative form
- c. **terminally placed and deforms the vegetative form**

47. *Escherichia coli* has the following morphological characteristics:

- a. **Gram-negative cocobacillus, bipolar, ciliated, fimbriate, non-sporulated**
- b. Gram-negative cocobacillus, bipolar stained, unciliated, fimbriate, non-sporulated
- c. Gram-negative cocobacillus, bipolar, ciliated, without fimbriae, non-sporulated

48. *Escherichia coli* presents the next tinctorial and biochemical characteristics:

- a. **Gram negative, lactose, sucrose (+), glucose (+), indole (+), hydrogen sulphide (-), urease (-)**
- b. Gram negativ , lactose , sucrose (-) glucose (-),indol (+),hydrogen sulphide (-), urease (+),
- c. Gram pozitiv, lactose (+),indol (-),hydrogen sulphide (+), urease (-),

49. Typically, the examination of leptospire is performed on:

- a. Gram-stained smears
- b. **Dark field microscopy**
- c. Giemsa-stained smears

50. Leptospire is cultivated on:

- a. usual media (broth, nutritious agar)
- b. Blood agar
- c. **Korthof medium**

1. The concept of bacteria.
2. Bacteria shape and grouping.
3. Bacterial cell structure: cell wall and capsule.
4. Plasmids: "R" plasmids.
5. The influence of environmental factors on bacteria: maximum growth temperature, the action of supramaximal temperatures.
6. Microorganisms ecology.
 - Animal body microbiota, large intestine microbiota, the rumenal microbiota.
7. Bacteria pathogenicity and its mechanisms.
8. Special bacteriology.
 - *Staphylococcus* genus
 - *Bacillus* genus: *Bacillus anthracis* species
 - *Clostridium* genus: *Cl. tetani* and *Cl. Perfringens* species
 - *Escherichia* genus
 - *Leptospira* genus

Bibliography :

Cătălin Carp-Cărare, Eleonora Guguianu, Cristina Rîmbu, Special bacteriology practical assignment guidelines, electronic book.

VII. PATHOLOGICAL ANATOMY

1. The persistence of the oval hole of the heart after birth causes:
 - a. cardiac hyperplasia
 - b. the mixing of arterial and venous blood**
 - c. stenosis of the pulmonary artery
 - d. tumors of the heart

2. Granulomatous bronchopneumonia may be seen in animals suffering from:
 - a. parvovirus
 - b. influenza
 - c. tuberculosis**
 - d. pasteurellosis

3. Chylopericardium represents:
 - a. the accumulation of blood inside the pericardial cavity
 - b. the presence of suffusions on the pericardial walls
 - c. the accumulation of puss inside the pericardial cavity
 - d. the accumulation of lymph inside the pericardial cavity**

4. The presence inside the pericardial cavity of increased amounts of citrine liquid that coagulates when comes into contact with air is termed:
 - a. serous pericarditis**
 - b. hydropericardium
 - c. pericardial empyema
 - d. purulent pericarditis

5. Fibrous pericarditis occurs in:
 - a. Marek disease in poultry
 - b. pyobacillosis in pigs
 - c. gout in pigs
 - d. salmonellosis in pigs and poultry**

6. Myocardial steatosis may be seen in:
 - a. mycoplasmosis
 - b. young animals
 - c. fattening animals**
 - d. tuberculosis

7. The deficiency in vitamin E and Se is translated in the myocardium in:
 - a. myocardial steatosis
 - b. hyaline myocardosis**
 - c. infarctus
 - d. atherosclerosis

8. Myocardial infarctus may be caused by:
 - a. coronary artery thrombosis**

- b. congestion
- c. haemorrhage
- d. ischemia

9. Cardiac dilatation is translated macroscopically into:

- a. thickened myocardium and narrowed cavities
- b. thickened myocardium and widen cavities
- c. thin myocardium and widen cavities**
- d. thickened pericardium

10. Thrombosis is:

- a. a circulatory change of the blood vessels**
- b. a dystrophy of the veins
- c. an inflammation of the blood vessels
- d. a synonym of embolism

11. Granulomatous myocarditis may be seen in:

- a. echinococcosis, cysticercosis**
- b. pyobacillosis, mycoplasmosis
- c. pasteurellosis, pseudomonosis
- d. acute colibacillosis, infections with *Erysipelothrix rhusiopathie*

12. Fibroelastosis manifests through:

- a. brown areas located on the epicardium
- b. bright red areas located on the endocardium
- c. thickening of the endocardium**
- d. fibrotic areas inside the myocardium

13. Based on its topography endocarditis may be:

- a. acute, chronic
- b. valvular, parietal, trabecular, papillary**
- c. septic, aseptic
- d. primary, secondary

14. Fibrinous bronchopneumonia:

- a. has four stages: filling, red hepatization, grey hepatization, resolution**
- b. is characterized by the presence of multiple abscesses
- c. manifests through the presence of catarrhus
- d. has as main characteristic the increasing number of collagen fibers

15. Chronic infections with streptococci and rujet bacillus may cause:

- a. granulomas
- b. valvular ulcero-vegetative endocarditis**
- c. serous pericarditis
- d. cardiac tumors

16. Cardiac hypertrophy is manifested through:

- a. the thickening of the muscle fibers**
- b. the thinning of the myocardium and the enlargement of the cardiac cavities
- c. an increase in the number of cardiac muscle cells

d. the presence of petechiae on the surface of the heart

17. Gangrenous bronchopneumonia:

a. is characterized by the presence of giant cells

b. may be caused by the ingres of foreign matter in the lungs

c. is characterized by an abundand leukocytic exudate

d. is not a serious condition

18. Viral, chlamydial and mycoplasmal infections produce:

a. lymphohistiocytic bronchopneumonia

b. purulent bronchopneumonia

c. granulomatous bronchopneumonia

d. gangrenous bronchopneumonia

19. Phlebitis is a term that defines:

a. the inflammation of the endocardium

b. a dystrophic process of the arteries

c. an inflammation of the veins

d. the vehiculation of emboli through the blood stream

20. Aneurysms are:

a. areas of hypertrophy in the myocardium

b. an expression of granulomatous inflammation

c. permanent dilatations in the wall of the arteries

d. cholesterol plaques

21. Pneumoconiosis is a term that defines:

a. the inhalation of exogenous dust particles

b. a type of fibrinous bronchopneumonia

c. a parasitary infestation of the lungs

d. a mineral dystrophy of the lung

22. Pulmonary passive congestion is expressed macroscopically through:

a. bright red color, decreased volume, light floating at the floating test

b. pink color, normal volume, granular sectioned surface

c. dark red color, increased volume, large amount of blood on section

d. marbled aspect, dry sectioned surface, increased consistency

23. Atelectasis represents:

a. reduced alveolar space without breathing air inside

b. active congestion of the lungs

c. a dystrophy of the lungs

d. a circulatory disorder

24. The increased air breathing space above normal in the terminal bronchioles and alveoli is called:

a. edema

b. stasis

c. atelectasis

d. emphysema

25. Haemopericardium means:
- the accumulation of air inside the pericardial cavity
 - the accumulation of exudate inside the pericardial cavity
 - the accumulation of blood inside the pericardial cavity**
 - the welding of the the two pericardial walls
26. Parasitic arteritis may be caused by:
- Strongylus vulgaris* in horses**
 - Pasteurella spp.* in pigs
 - Staphylococcus spp.* in carnivores
 - all of the above
27. Umbilical phlebitis usually evolves in a:
- lymphohistiocytic form
 - diffuse giant cell form
 - purulent form**
 - catarrhal form
28. Aortic calcification may occur in:
- hypervitaminosis D**
 - vitamin E deficiency
 - congestion
 - selenium deficiency
29. Viral arteritis is characterized by:
- dilatation of the lumen
 - fibrinoid or hyaline degeneration of the intima**
 - the presence of parasitic larvae
 - the presence of granulomas
30. Verrucous endocarditis follows:
- bronchopneumonia
 - ulcero-vegetative endocarditis
 - simple endocarditis**
 - aneurysms

SUBJECTS AND REFERENCES

1.Heart morphopathology

Cadaveric modification of the heart
 Congenital anomalies of the heart and vessels
 Pericardium injuries
 Myocardial injury
 Endocardial lesions

2. Lung pathology in mammals

Volumetric changes
 Dystrophies of the lungs
 Circulatory changes

Lung inflammation
Lung tumors

References:

1. Sorin-Aurelian Pașca – lectures lito, 2017
2. Jubb, Kennedy, Palmer – Pathology of Domestic Animals Vol. 2+3, Elsevier, 2007