



# Themes for License Exam and Bibliography

recommended for the License exam, the Session - June 2022,

for the

*Evaluation of fundamental and specialized knowledge*

## Written test - Assessment of fundamental knowledge

### I. Anatomy

#### 1. Lymph System

Lymph nodes topography and their afferent and efferent lymphatic vessels in the head, neck, forelimb and hindlimb, thoracic and abdominal cavity in species .

#### 2. The thoracic and abdominal viscera in animals:

Morphology of the viscera in the thoracic and abdominal cavity in domestic animals; differentiation criteria in domestic mammals. Projection of the thoracic and abdominal viscera on the right and left walls in. Splanchnic vasculo-nervous structures and their distribution

#### 3. The hypogastric region.

Inguinal region and the testicular pouch

#### 4. The autopodial region in horses and cattle (skeleton, the muscles and structure supporting, the vessels and nerves of the forelimb and hindlimb)

### Bibliography:

1. Dyce, M. K., Sack O.W., Wensing G.J.C., Textbook of Veterinary Anatomy. 3<sup>rd</sup> 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

Assoc Prof. Spataru Mihaela

### II. Physiology

#### Physiology I

1. Autonomic nervous system (ANS) Physiology
2. Senses: vestibular system, auditory system, visual system
3. Endocrine system physiology

#### Physiology II

1. Digestion.
2. Blood physiology

#### Bibliography:

1. **Iuliana Codreanu** – Textbook of Animal Physiology, Ed. Printech, Bucuresti, 2018 (pages 11-54; 87-90; 94-96; 100-216) (Physiology Library)
2. **William O. Reece**, *Dukes' Physiology of Domestic Animals*, Wiley, Thirteenth Edition, 2015 (PDF)
3. **B.G. Klein**, *Cunningham's Textbook of Veterinary Physiology*, Elsevier Saunders, Fifth edition, 2013 (PDF)
4. **Ana Chelaru, Geta Pavel** – *Physiology – simulation models* (CD), Ed. Tehnopress, Iași, 2005 (Physiology Library).
5. Course notes (on Moodle platform).

Assoc Prof. Pavel Geta

### III. Pathophysiology

1. Pathophysiology of inflammation
2. Pathophysiology of shock
3. Pathophysiology of thermal homeostasis
4. Pathophysiology of glucydic metabolism
5. Pathophysiology of water and electrolytes balance
6. Pathophysiology of acid-base metabolism

#### References:

1. **Pathophysiology – lecture notes**
2. **Malancus R.N., 2021 – Introduction to Pathophysiology – General Pathophysiology**, Ed. USV Iasi

Assoc Prof. Mălăncuș Răzvan

### IV. Semiology

1. General examination of the animal. Changes in attitude. Skin - functional and structural disorders, apparent mucous membranes, lymph nodes.
2. Urine examination. Chemical examination of urine. Examination of urinary sediment
3. Examination of the digestive system. Vomiting; examination and semiology of oesophagus, examination and semiology of stomach in monogastric animals; physical examination of liver in horse, cow, dog; functional examination of liver; examination of intestines in horse, cow, dog
4. Examination of the cardiovascular system. Auscultation of the heart (no arrhythmias, no pathological heart sounds); special methods of examination of the heart; examination of the arterial pulse
5. Examination of the nervous system. Examination of behaviour and motility; examination of sensibility (without spinal syndromes)

#### Bibliography:

- Vulpe V., 2016: *Veterinary General Semiology - Examination techniques*. PIM publishing house, Iași
- Vulpe V., 2021: *Veterinary Special Semiology*. USV publishing house, Iași

Prof. Vulpe Vasile

### V. Farmacology

1. Drugs Acting on the Autonomic Nervous System: parasympatholytic drugs and sympathomimetic drugs.
2. Drugs Acting on the Central Nervous System: Anesthetics and Analgesics.

3. Drugs Affecting Renal Function (diuretics and antidiuretics) and Fluid–Electrolyte Balance (the basic principle of fluid therapy).
4. Drugs Acting on the Cardiovascular System: Cardiotonic Agents.
5. Chemotherapy of Microbial Diseases : Antiseptics and Disinfectants, Antibiotics and Antifungal Agents.

## **BIBLIOGRAPHY**

1. Nastasa Valentin: Course support 2021 - 2022
2. Veterinary pharmacology & therapeutics. J.E. Riviere, M.G. Papich, Ed. Blackwell publishing, 2018
3. Papich handbook of veterinary drugs. M.G. Papich , Ed Iowa State, 5th edition, Elsevier, 2021
4. Handbook of Veterinary Pharmacology. Walter H. Hsu. First and second edition. Wiley-Blackwell

Assoc Prof. Năstasă Valentin

## **VI. Discipline: Microbiology**

1. The concept of bacteria
2. Morphology and biology of bacteria
  - 2.1 Form and method of grouping bacteria
  - 2.2 Bacterial cell structure
  - 2.3 Physiology of bacteria
3. The influence of environmental factors on bacteria
4. Notions of microbial ecology
5. Special bacteriology
  - 5.1 Genus Staphylococcus
  - 5.2 Genus Streptococcus
  - 5.3 Genus Bacillus
  - 5.4 Genus Clostridium
  - 5.5 Genus Mycobacterium
  - 5.6 Genus Escherichia
  - 5.7 Genus Salmonella
  - 5.8 Genus Proteus
  - 5.9 Genus Pasteurella
  - 5.10 Genus Brucella
  - 5.11 Genus Pseudomonas
  - 5.12 Genus Campylobacter
  - 5.13 Genus Leptospira

### **Bibliografie:**

1. Cătălin Carp-Cărare, Eleonora Guguianu, Cristina Rîmbu, 2015 –Bacteriologie specială. Îndrumător de lucrări practice. Ed. "Ion Ionescu de la Brad", USAMV, Iași. (Tradusă în limba enleză, în format electronic)
2. Cătălin Carp-Cărare, Microbiology Power pointpresentation

Assoc Prof. Carp-Cărare  
Cătălin

## **VII. Discipline: Pathological anatomy**

### **1.Heart morphopathology**

- 1.1. Cadaveric modification of the heart
- 1.2. Congenital anomalies of the heart and vessels
- 1.3. Pericardium injuries
- 1.4. Myocardial injury
- 1.5. Endocardial lesions

## **2. Lung pathology in mammals**

- 2.1. Volumetric changes
- 2.2. Dystrophies of the lungs
- 2.3. Circulatory changes
- 2.4. Lung inflammation
- 2.5. Lung tumors

### **References:**

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

## **Proba orală – Evaluarea cunoștințelor de specialitate**

### **I. Infectious diseases, preventive medicine and clinical lectures by species**

1. Bovine tuberculosis
2. Avian mycoplasmosis
3. Brucellosis: cattle, sheep, swine, horses, dogs, rodents.  
Contagious epididymitis of rams.
4. Colibacillosis in mammals and poultry.
5. Salmonellosis in mammals and poultry.
6. Pasteurellosis in mammals and poultry.
7. Necrobacillosis: cattle, sheep, swine, horses and rabbits.
8. Ovine infections foot rot.
9. Anthrax
10. Rabies
11. Infectious diseases of rabbits (pasteurellosis, myxomatosis, viral haemorrhagic disease)
12. Viral diseases of dogs (parvovirus, Canine distemper, infectious tracheobronchitis - Kennel Cough, coronavirus)
13. Viral diseases of cats (feline infectious peritonitis, feline panleukopenia, calicivirus, herpesvirus).
14. Septic diseases of poultry (New Castle disease, pasteurellosis).
15. Diseases with chronic evolution in poultry (tuberculosis, avian leucosis).
16. Streptococcal infections (strangles, petechial fever, foal streptococcosis).
17. Contagious mastitis in sheep and goat (mycoplasmic mastitis, staphylococcal mastitis, Pasteurella mastitis).
18. Contagious mastitis in cattle (subclinical mastitis: coliform mastitis, staphylococcal mastitis, streptococcal mastitis).

#### **Bibliography**

- M.V.M.: The Merck veterinary manual. Merck Ltd., New York, 1998.
- Perianu T. et al., – Infectious diseases of animals. Bacteriosis. The Universitas XXI Publishing House, Iasi, 2011.
- Perianu Tudor et al. - Infectious animal diseases. Viroze. The Universitas XXI Publishing House, Iasi, 2012.
- Radostis, O. M.; Blood, D. C.; Gay, J., Veterinary Medicine Bailliere Tindall, New York , 2000
- Elena Velescu - Pathology of Infectious Diseases in Animals, Ed. "Terra Nostra", Iasi, 2002.
- Tanase Irina-Oana, Daraban Florentina, 2015 – Infectious animal diseases. Practical Practitioner. Editura "Ion Ionescu de la Brad" Iași, ISBN: 978-973-147-201-0.

Assoc Prof. Tanase Oana

### **II. *Reproduction and Pathology of Reproduction***

1. Particularities of the sexual cycle by species.
2. Gestation, gestation duration and fetal appendages by species.

3. Gestosis
4. Non-infectious abortions.
5. The stages of parturition and its characteristics by species.
6. Dystocia.
7. Puerperal disorders:
  - diseases of the genital tract;
  - uterine prolapse;
  - placental retention;
  - inflammation of the uterus;
8. Ovarian diseases:
  - trophic disorders;
  - persistent corpus luteum;
  - ovarian cysts;
9. Uterine diseases as a factor of infertility.

### **Bibliography:**

1. Ciornei S. (2021). **Reproductive biotechnologies, practical guide**, Editura “Ion Ionescu de la Brad”, ISBN 978-973-147-435-9,
2. Groza Ș -coordonator, 2019, **Physiology and pathology of the post-partum period in domestic animals**, Ed. Academiei Române, București.
3. Hafez B., Hafez E.S.E., (2000), **Reproduction in farm animals**, 7th ed, (Ed.) Lippincott Williams & Wilkins, Philadelphia, USA
4. Hopper R.M (2015), **Bovine Reproduction**, 1st edit., (Ed.) John Wiley & Sons, Hoboken, NJ, USA.
5. Roșca P (2022), **Reproduction and veterinary obstetrics - practical guide**. Editura Ion Ionescu de la Brad, ISBN 978-973-147-454-0.

Assoc Prof Ștefan CIORNEI

### **III. INTERNAL MEDICINE CLINIC AND PATHOLOGY BY SPECIES**

1. Pre-stomach diseases. Diagnostic, etiologic explanations, prevention and treatment.
2. Colic syndrome in horses, swines and carnivores.
3. Diagnosis and treatment of gastro-pathies and entero-pathies: secreto-motor, topographic and inflammatory.
4. Youth enteritis: diagnosis methodology, prevention and control.
5. Hepatic pathology. Icterus, ascites, cirrhosis, hepatic encephalopathy. Clinics and therapy.
6. Clinics and therapy of respiratory syndroms (rhinitis, laringotracheitis, bronchitis, bronchopneumonia, liquido-thorax, emphysema, mediastinal syndrome and chronic respiratory syndrome).
7. Acute and chronic cardiac insufficiency syndrome. Syncope, shock and cardiovascular collapse: etiopathogenesis, symptoms, diagnosis and prevention. Cardio-pulmonary resuscitation in dogs.
8. Anemic and hemoragipar syndrome. Etiopathogenesis, symptomatology, clinical and para-clinical diagnostic, prevention and control.

9. Nephro-pathies and cysto-pathy: symptomatology, clinical and para-clinical diagnostic, treatment. Urolithiasis in ruminants, domestic carnivores and fur animals. Clinic and therapy.
10. Particularities of neurologic diagnostic. Diagnostic and therapy of encephalopathies, spinalcord-pathies. Neuralgia and neuritis.
11. Behavioral aberrations in mammals and birds. Diagnosis and treatment.
12. Neuroendocrine and vegetative pathology. Diabetes and stress: clinics and therapy.
13. Clinics and therapy of osteo-musculare illnes: functional, ischemic, distrofic, adaptation and inflamathory miopathies.
14. Particularity of diagnostic and treatment of dermato-pathies. Distrophic, alergic and inflammatory dermato-pathies. Photosensibilization dermatitis.
15. Protein disorders in mamals and birds (osteoporosis, hiperuricemia and gout in birds, digestive disorders produced by exces of proteins from food ration in different animal species).
16. Clinics and therapy of glucidic and lipidic disorders: hipoglicemia in new-born piglets, hipoglicemia in piglets, ketosis in cows and sheeps. Fat liver syndrome and hemoragic syndrome in chicken, fat cow syndrome.
17. Clinics and therapy of minerals and vitamins disorders: tetanic hypo-calcaemia in carnivores, hypocalcaemia in sheeps and goats, parturition hypo-calcaemic paresis in cows, grass tetany in cows, hypo-magnesian tetany in calves, hypo-thiaminosis in calves, lambs and dogs.
18. Nutritional miopathies in mamals and birds. Clinics and therapy.

#### **Bibliography:**

1. Nelson, W.R., Couto, C.G. –(1999)-*Small animal internal medicine, Mosby, St. Louis, Baltimore, Boston, Chicago.*
  2. Radostits O.M., Gay C.C., Blood D.C., Hinchcliff K.W., (2007), *Veterinary Medicine. A textbook of the diseases of cattle, sheep, pigs, goats and horses*, 10<sup>th</sup> Edition, Saunders W.B., Philadelphia.
  3. Anton Alina, Solcan Gh., 2019, *Animal Internal Medicine. Digestive System Diseases.* Editura Ion Ionescu de la Brad, Iași
  4. Luminița Diana Hrițcu, 2019, *Veterinary respiratory and cardiovascular medicine,* Editura Ion Ionescu de la Brad, Iași
- [http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/toc\\_40500.htm](http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/toc_40500.htm)

Prof. Solcan Gh.

#### **IV. SURGICAL PATHOLOGY AND CLINICS**

1. Suture types
2. Hemorrhage and hemostasis
3. Bandages and wound dressings
4. Surgical infection: aerobic infection, anaerobic infection, local infection, widespread infection
5. Closed trauma and open trauma
6. Wet gangrene and dry gangrene
7. Tumors
8. Subcutaneous serous bursae diseases
9. Muscles and tendons diseases

10. Bones and joints diseases
11. Surgical diseases of the head
12. Surgical diseases of the abdomen
13. Surgical diseases of the urogenital tract

Bibliography:

BURTAN L. 2019, - *Veterinary surgical propedeutics*, Ed. Tehnopress, Iași,  
COURSE SUPPORT FOR IV year, V year and VI year

Assoc Prof. Burtan Liviu

**V. Discipline: Parasitology and clinical lectures by species**

1. Protozoa
  - Eimeriosis in mammals and birds
  - Toxoplasmosis
  - Cryptosporidiosis
  - Neosporosis
2. Trematodoses
  - Fasciolosis
  - Paramphistomosis
  - Opistorchosis
  - Prostogonimosis
3. Cestodoses; metacestodoses
  - Cestodoses in mammals and birds
  - Muscle cysticercosis
  - Hydatidosis
  - Cenurosis
4. Nematodoses
  - Pulmonary nematodes in mammals and birds
  - Dictyocaulosis
  - Protostrongylosis
  - Digestive nematodoses in mammals and birds
  - Ascariosis
  - Hookworm
  - Trichinellosis
5. Mites
  - Scabies in mammals and birds
  - Tick infestation
6. Entomoses
  - Insect Infestation: Anoplura, Malophaga and Siphonaptera
  - Miases

Bibliography:

-**Bowman, D. Dwight.** 2014 –Georgis' Parasitology for Veterinarians, 10<sup>th</sup> ed., Elsevier Saunders ISBN: 978-1-4557-4006-2

-**Dhaliwal Singh B.B., Juyal Dutt Prayag.** 2013 – Parasitic Zoonoses, Springer India, ISBN 978-81-322-1551-6 (eBook)

-**Elsheikha M. Hany, Patterson S. Jon.** 2013 - Veterinary Parasitology, Manson Publishing/The Veterinary Press.

-**La Mann V. Gregory (editor).** 2010 – Veterinary Parasitology, Nova Biomedical Press, Inc. New York

## VI. Discipline: Control of Products and Food of Animal Origin

- 1. Sanitary veterinary control of meat:** organoleptic examination of meat; chemical examination of meat - tests that are done directly on meat; examinations performed on aqueous meat extract - Nessler reaction, Walkiewicz reaction; trichinoscopic examination.
- 2. Sanitary veterinary control of meat products (sausages):** organoleptic examination; determination of sodium chloride (NaCl); determination of sodium nitrite (NaNO<sub>2</sub>); identification and determination of starch.
- 3. Veterinary sanitary control of cans:** examination of the entire box; examination of the contents of the can - organoleptic examination.
- 4. Sanitary veterinary control of fish:** organoleptic examination of unprocessed fish; organoleptic examination of processed fish; physico-chemical examinations on freshness - qualitative examinations on meat and extract; determination of weakly added ammonia.
- 5. Veterinary sanitary control of drinking milk:** organoleptic examination; density determination; determination of fat content; determination of total/titratable acidity.
- 6. Veterinary sanitary control of milk powder:** organoleptic examination; determination of fat content; identification of starch products from milk powder.
- 7. Veterinary sanitary control of acidic dairy products:** organoleptic examination; determination of fat content; determination of total / titratable acidity.
- 8. Veterinary sanitary control of cream:** organoleptic examination; determination of fat content; highlighting the falsification by adding starch; determination of total/titratable acidity.
- 9. Veterinary sanitary control of butter:** organoleptic examination; water determination; determination of fat content.
- 10. Sanitary veterinary control of cheeses:** organoleptic examination; determination of fat content; determination of sodium chloride; determination of acidity.
- 11. Veterinary sanitary control of honey:** organoleptic examination; identification of artificial invert sugar (HMF) in honey; determination of honey acidity.
- 12. Veterinary sanitary control of eggs:** methods of examination of the whole egg - external examination; ovoscopic examination; density test and methods of examining the contents of the egg - organoleptic examination of the contents; pH assessment.

### Bibliography

- Bondoc I., Șindilar E.V., 2002. *Sanitary veterinary control of the quality and sanitation of food*. Vol. I. "Ion Ionescu de la Brad" Publishing, Iași.
- Bondoc I., 2007. *Technology and quality control of milk and dairy products*. Vol. I. "Ion Ionescu de la Brad" Publishing, Iași.
- Bondoc I., 2021. *Control of Products and Food of Animal Origin. Practical Textbook* (support for practical work).
- Lawless H.T., Heymann Hildegard, 2010. *Sensory Evaluation of Food. Principles and Practices*. 2nd Edition. Springer Science + Business Media, LLC, New York.

Nielsen Suzanne, 2010. *Food Analysis Laboratory Manual*. 2nd Edition. Springer Science + Business Media, LLC, New York.

Nielsen Suzanne, 2017. *Food Analysis Laboratory Manual*. 3rd Edition. Springer International Publishing, Cham, Switzerland.

Vagner De Alencar A.D.T. (ed.), 2017. *Honey Analysis*. IntechOpen Limited, London.

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