Національний університет біоресурсів і природокористування України

Кафедра епізоотології, мікробіології і вірусології

«ЗАТВЕРДЖУЮ»
Декан факультету ветеринарної медицини
_____ **Микола ЦВІЛІХОВСЬКИЙ**
"24" 05 2022 р.

«СХВАЛЕНО»
на засіданні кафедри епізоотології,
мікробіології і вірусології
Протокол №5 від «05» травня 2022 р.
Завідувач кафедри епізоотології,
мікробіології і вірусології
_____ **Володимир МЕЛЬНИК**

«РОЗГЛЯНУТО»
Гарант ОП «Ветеринарна медицина»
д.вет.н., завідувач кафедри терапії
і клінічної діагностики
_____ **Наталія ГРУШАНСЬКА**

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

" EPIZOOTOLOGY AND INFECTIOUS DISEASES "

Specialty 211 – «Veterinary Medicine»
(code and name of the specialty)
educational program Veterinary Medicine
Faculty (ESI) Veterinary Medicine

Developers: Head of the Department, Candidate of Veterinary Sciences, docent **V. MELNYK,** Doctor of Veterinary Sciences, Professor **V. NEDOSIEKOV,** Candidate of Veterinary Sciences, docent **O. MARTYNIUK**

Kyiv – 2022

1. Description of the discipline

Epizootology and Infectious Diseases
(name)

Field of knowledge, specialty, educational program and degree	
Field of knowledge	21 – Veterinary Medicine (code and name)
Educational degree	Master (bachelor, specialist, master)
Speciality	211 – «Veterinary Medicine» (code and name)
Educational program	Veterinary Medicine (name)
Characteristics of the discipline	
Type	Obligate
Total number of hours	240
Number of ECTS credits	8
Number of content modules	9
Course project (work) (if present in the working curriculum)	Course work on the discipline "Epizootology and Infectious Diseases"
Form of control	Differentiated test, Test, Exam
Indicators of academic discipline for full-time and part-time forms of study	
	Full-time form of study
Year of preparation	4-5
Semester	8, 9, 10
Lectures	60 hours
Practical, seminar classes	
Laboratory classes	120 hours
Independent work	60 hours
Individual tasks	_____hours
Number of weekly hours for full-time study	4, 4, 4 hours

2. Purpose, tasks and competencies of the discipline

The purpose of teaching epizootology is mastering by students the theoretical and methodological bases of infectious and epizootic processes, regularities which underlie development of infectious diseases, mastering the methods of diagnosis of infectious diseases of bacterial, viral and fungal nature, as well as skills of scientifically sound planning, organization and conduct of anti-epizootic measures**.**

Tasks:

- causes of infections;
- the role of microorganisms, the state of the animal body and environmental factors in the occurrence of various forms of infection;
- general resistance and specific immunity, their practical significance in the doctrine of infection and immunity;

- essence and characteristics of the epizootic process, the role of sources of the pathogen, mechanisms of transmission and susceptibility of animals in the development and extinction of epizootics;
- preventive measures as the only state science-based system of prevention and control of infectious diseases, including general and specific prevention;
- methods and means of treatment of infectious diseases, their importance in the localization and elimination of foci of infection;
- place and importance of disinfection, disinsection and deratization in the complex of anti-epizootic measures.

As a result of studying the discipline the student must:

know:

1. Epizootic process and its driving forces.
2. Regularities of development of epizootic process and staging of epizootics.
3. Methods of epizootic survey of disadvantaged farms with determination of the epizootic situation in them.
4. Methods of analysis of the epizootic situation (taking into account the nosological structure of diseases, the proportion of individual diseases, the breadth of the disease, the rate of foci, etc.).
5. Principles of anti-epizootic work.
6. Fundamentals of epizootological forecasting (stages and tasks of forecasting, main and additional factors of the prognostic background of various diseases).
7. Questions on veterinary medicine.
8. The place and importance of disinfection, deratization and disinsection in the complex of anti-epizootic measures (disinfection of premises in the presence of animals, apiaries, incubators, on rail and water transport, etc.).
9. Knowledge and understanding of general principles of descriptive epidemiology, its application to disease control, and the ability to obtain and properly use information from relevant sources;
10. Understand and participate appropriately in epidemiological investigations, including the collection, handling and transportation of samples or specimens.
11. Know which animal diseases (including pets) require mandatory notification to the competent authority to prevent their spread;
12. Know where to find relevant information on specific diseases, their prevention, control, including rapid response mechanisms.
13. Know where to find up-to-date and reliable information on new and rapidly spreading diseases.
14. Diseases common to several species of animals.
15. Diseases of ruminants.
16. Diseases of pigs.
17. Diseases of horses.
18. Diseases of young animals.
19. Diseases of birds.
20. Diseases of dogs and fur animals.
21. Diseases of bees.
22. Diseases of fish.

be able to:

1. Independently conduct an epidemiological survey of the farm, establish the causes of morbidity and death of animals.
2. Competently write an act of full inspection of the farm.

3. Identify ways of introducing the pathogen into the economy and determine the patterns of the epizootic process in specific conditions of the outbreak.
4. Develop specific measures aimed at rapid localization of the epizootic focus, prevention of new diseases and complete elimination of the disease.
5. Correctly and reasonably develop a system of anti-epizootic measures for various infectious diseases.
6. Organize and perform desimfection of various facilities and premises in the presence of animals.
7. Carry out anti-epizootic work in farms of industrial type.
8. Develop and implement a system of health measures in the epizootic foci.
9. Determine the nosological structure of the disease, the proportion of individual diseases, the breadth of the disease, the coefficient of foci.
10. Determine the epizootiology of the disease:

- susceptibility to the pathogen of certain species of animals and humans, the influence of age, sex and breed on susceptibility;
- sources and reservoir of the pathogen;
- mechanism and factors of pathogen transmission;
- ways of infection;
- ways of spreading the pathogen;
- features of the epizootic process (contagiousness, seasonality, periodicity, morbidity, mortality, stationarity and other indicators);
- the influence of the external environment, natural-geographical and socio-economic factors on the intensity of the epizootiological process.

11. Be able to do and explain the collection of samples, their handling, rational use of appropriate diagnostic and therapeutic tools for the prevention and control of transboundary diseases and pathogens;
12. Be able to act in accordance with the regulations on cross-border diseases and be able to find relevant information about these diseases.
13. Identify clinical signs, clinical course, transmission potential and pathogens associated with common zoonoses;
14. Identify clinical signs, clinical course, transmission potential and pathogens associated with foodborne diseases;
15. Use or explain the use of relevant diagnostic and therapeutic tools for common zoonoses;
16. Use or explain the use of relevant diagnostic and therapeutic tools for diseases of food origin;
17. Understand the effects and consequences of common zoonoses and know where to find relevant information;
18. Understand the impact and consequences of foodborne illness on human health and know where to find relevant information;
19. Understand regulatory procedures for common zoonoses;
20. Understand regulatory procedures for foodborne diseases;
21. Know where to find current information (which official veterinarian to consult if a zoonotic pathogen is occured or suspected).
22. Identify clinical signs, leaks, transmission potential (including vectors) and pathogens associated with transboundary diseases;
23. Describe the current general prevalence of cross-border diseases and be able to find relevant information.
24. Identify new and rapidly spreading diseases and provide relevant care;
25. Identify suspicious signs and report them to the appropriate competent authority;
26. Understand the causes / hypotheses, explain the occurrence and recurrence of diseases;
27. Describe existing programs to prevent and control common zoonoses, communicable diseases, new diseases and rapidly spreading diseases, including animal identification, traceability and surveillance by the relevant veterinary authority;

28. Understand and participate in the implementation of the contingency plan for the control of transboundary diseases, including the humane slaughter of animals;
29. Understand and participate in planned and emergency vaccinations, as well as planned programs of planned research, culling and treatment;
30. Explain the concept of "early detection system".

Acquisition of competencies:

general competencies (GC):

1. Ability to apply knowledge in practical situations.
2. Knowledge and understanding of the subject area and profession.
3. Ability to make informed decisions.

professional (special) competencies (PC):

1. Ability to conduct clinical trials to draw conclusions about the condition of animals or to establish a diagnosis.
2. Ability to organize and conduct laboratory and special diagnostic tests and analyze their results.
3. Ability to plan, organize and implement activities for the treatment of animals of different classes and species suffering from infectious diseases.
4. Ability to develop and implement measures to protect the population from diseases common to animals and humans.
5. Ability to develop strategies for disease prevention of various etiologies.
6. Ability to carry out educational activities among industry and the public.
7. Ability to organize, implement and control the flow of documents during professional activities.

3.Program of the discipline

Content module 1. The doctrine of infectious and epizootic process.
Content module 2. Epizootic process and its driving forces. System of anti-epizootic measures
Content module 3. Infectious diseases common to several species of animals
Content module 4. Infectious diseases of ruminants
Content module 5. Infectious diseases of pigs
Content module 6. Infectious diseases of horses and young animals
Content module 7. Infectious diseases of birds
Content module 8. Infectious diseases of carnivores and fur animals
Content module 9. Infectious diseases of fish and bees

Names of content modules and topics	Number of hours											
	full-time study						part-time study					
	Total	including					Total	including				
		l	pr	lab	i.t.	i.w.		l	pr	lab	i.t.	i.w.
1	2	3	4	5	6	7	8	9	10	11	12	13
Content module 1. The doctrine of infectious and epizootic process.												
Topic 1. Name	6	2		2		2						
Topic 2. Name	6	2		2		2						
Topic 3. Name	6	2		2		2						
Module 1	4	2		2								
Total for content module 1	**22**	**8**		**8**		**6**						
Content module 2. Epizootic process and its driving forces. System of anti-epizootic measures												

Topic 1. Name	6	2		2		2						
Topic 2. Name	6	2		2		2						
Topic 3. Name	6	2		2		2						
Module 2	4	2		2								
Total for content module 2	**22**	**8**		**8**		**6**						
Content module 3. Infectious diseases common to several species of animals												
Topic 1. Name	6	2		2		2						
Topic 2. Name	6	2		2		2						
Topic 3. Name	6	2		2		2						
Topic 4. Name	4	2		2								
Topic 5. Name	6	2		2		2						
Topic 6. Name	4	2		2								
Module 3	4	2		2								
Total for content module 3	**36**	**14**		**14**		**8**						
Content module 4. Infectious diseases of ruminants												
Topic 1. Name	6	2		2		2						
Topic 2. Name	6	2		2		2						
Topic 3. Name	6	2		2		2						
Topic 4. Name	4	2		2								
Module 5	4	2		2								
Total for content module 4	**26**	**10**		**10**		**6**						
Content module 5. Infectious diseases of pigs												
Topic 1. Name	6	2		2		2						
Topic 2. Name	4	2		2								
Topic 3. Name	6	2		2		2						
Topic 4. Name	6	2		2		2						
Module 6	4	2		2								
Total for content module 5	**26**	**10**		**10**		**6**						
Content module 6. Infectious diseases of horses and young animals												
Topic 1. Name	6	2		2		2						
Topic 2. Name	4	2		2		2						
Topic 3. Name	6	2		2		2						
Topic 4. Name	6	2		2		2						
Module 6	4	2		2								
Total for content module 6	**28**	**10**		**10**		**8**						
Content module 7. Infectious diseases of birds												
Topic 1. Name	6	2		2		2						
Topic 2. Name	4	2		2								
Topic 3. Name	6	2		2		2						
Topic 4. Name	6	2		2		2						
Module 7	4	2		2								
Total for content module 7	**26**	**10**		**10**		**6**						
Content module 8. Infectious diseases of carnivores and fur animals												
Topic 1. Name	6	2		2		2						
Topic 2. Name	4	2		2								

Topic 3. Name	6	2		2		2						
Topic 4. Name	6	2		2		2						
Module 8	4	2		2								
Total for content module 8	**26**	**10**		**10**		**12**						
Content module 9. Infectious diseases of fish and bees												
Topic 1. Name	6	2		2		2						
Topic 2. Name	4	2		2		2						
Topic 3. Name	6	2		2		2						
Topic 4. Name	6	2		2		2						
Module 9	4	2		2								
Total for content module 9	**28**	**10**		**10**		**8**						
Total hours	**240**	**60**		**120**		**60**						
Course project (work) on the subject "Epizootology and Infectious Diseases"	30	**-**	**-**	**-**		**-**		**-**	**-**	**-**		**-**
Total hours	**270**	**60**		**120**		**60**						

6. Topics of laboratory classes

№ i/o	Topic name	Number of hours
1.	Veterinary and veterinary facilities. Acquaintance with the infectious disease clinic and isolator, mode of their work. The role of laboratory and diagnostic studies in infectious diseases of animals. Technique of blood sampling from animals of different species for laboratory diagnostic tests.	2
2.	Rules and techniques of taking and sending pathological material for laboratory tests. Preservation of pathological material. Organization of clinical examination of infectiously ill animals. Personal prevention and safety.	2
3.	Technique and methods of conducting allergic studies of animals with simultaneous clinical examination. Organization of vaccinations. Introduction to the technique of vaccination of animals and the technique of administration of immune sera.	2
4.	**COLLOQUIUM 1.**	2
5.	Study of the method of epizootological inspection of the farm and registration of the act of epizootological examination. Methods of keeping epizootic journals and compiling epizootic maps.	2
6.	General acquaintance with biological products: vaccines, bacteriophages, hyperimmune sera, gamma globulins, allergens, diagnostic drugs for serological tests. Progressive methods of animal immunization.	2
7.	Disinfection and its import for prevention and elimination of infectious diseases. Tips and objects of disinfection. Methods and means of disinfection. Disinfectants from the groups: acids, alkalis, phenols, salts of heavy metals. Oxidizing and chlorine-containing disinfectants.	2
8.	Introduction to new disinfectants. Technique of preparation of solutions of basic disinfectants and their application. Features of disinfection of various objects and calculation of disinfectants. Devices and machines for disinfection of various objects. Demonstration of disinfection machines. Methods and means of disinsection and deratization.	2
9.	**COLLOQUIUM 2.**	2
10.	Tetanus. Botulism. Anthrax.	2
11.	Pseudotuberculosis. Paratuberculosis. Tuberculosis.	2

12.	Pasteurellosis. Chlamydiosis. Listeriosis. Brucellosis.	2
13.	Murrain. Tularemia. Smallpox. Leptospirosis.	2
14.	Rabies. Aujeszky's disease. Trichophytia. Microsporia.	2
15.	**COLLOQUIUM 3. ZOOONOSES**	2
16.	EMCAR. Malignant edema.	2
17.	Bradzot. Blutang.	2
18.	Viral diarrhea in cattle. Parainfluenza - 3.	2
19.	Infectious enterotoxemia of sheep. Hoof rot.	2
20.	Horny pneumonia in cattle. Malignant catarrhal fever of cattle.	2
21.	Prion diseases of ruminants (Spongiform encephalopathy of cattle. Scrapie. Spring-Maedi)	2
22.	Respiratory syncytial infection of cattle. Cattle plague.	2
23.	Infectious pleuropneumonia of goats.	2
24.	Contagious pustular dermatitis of sheep and goats.	2
25.	**MODULE 4. DISEASES OF RUMINANTS**	2
26.	Classic swine fever. Actinobacillary pleuropneumonia of pigs.	2
27.	Parvovirus infection (diseases of the reproductive organs of pigs). Pseudomonas aeruginosa of pigs.	2
28.	Infectious atrophic rhinitis of pigs. Hemophilic polyserositis.	2
29.	Cholienterotoxemia of pigs.	2
30.	Teschen disease. Epidemic diarrhea.	2
31.	Swine dysentery. Anaerobic dysentery of pigs.	2
32.	Vesicular disease. Swine vesicular exanthema. Vesicular stomatitis.	2
33.	**MODULE 5. DISEASES OF PIGS**	2
34.	Respiratory mycoplasmosis. Viral hepatitis of ducklings. Viral sinusitis of ducklings.	2
35.	Bird flu. Leukemia of birds. Laying syndrome.	2
36.	Salmonellosis of birds. Pulloros-typhus. Pasteurellosis (cholera) of birds.	2
37.	Ornithosis. Smallpox. Aspergillosis. Candidiasis of birds.	2
38.	**MODULE 6. BIRD DISEASES**	2
39.	Viral enteritis of young animals. Streptococcus.	2
40.	The myth of horses. African horse plague.	2
41.	Viral arteritis. Epizootic lymphangitis of horses.	2
42.	Contagious equine pleuropneumonia.	2
43.	Infectious equine encephalomyelitis.	2
44.	Infectious metritis of horses. Rhodococcal infection of horses.	2
45.	**MODULE 7. DISEASES OF HORSES AND YOUNG ANIMALS.**	1
46.	Adenovirus infections of dogs (Infectious hepatitis of carnivores. Infectious larengotracheitis of dogs). Dog flu.	2
47.	Leukemia of cats. Calcivirosis.	2
48.	Carnivorous viral enteritis.	2
49.	Immunodeficiency of cats. Cat anemia.	2
50.	Aleutian mink disease. Pseudomonas mink. Fur pasteurellosis.	2
51.	**MODULE 8. DISEASES OF CARNIVORES AND FUR ANIMALS**	2
52.	Varrosis of bees. Nosematosis and acarapidosis.	2
53.	European and American bee rot. Ascopherosis and aspergillosis of bees.	2
54.	Saccular brood. Chronic and acute viral paralysis of bees. Septicemia of bees.	2
55.	Hafniosis, salmonellosis and colibacillosis of bees	2
56.	Non-communicable diseases of bees and pests and enemies of bees	2
57.	Aeromonosis (furunculosis) of salmon. Aeromonosis of carp.	2
58.	Spring viremia of carp. Vibriosis.	2

59.	Viral hemorrhagic septicemia. Bacterial rot of fins. Smallpox carp.	2
60.	Bronchiomycosis of fish. Saprolegniosis of fish and caviar in fish farms.	2
61.	**MODULE 9. DISEASES OF FISH AND BEES**	1
TOTAL		**120**

7. Test questions, sets of tests to determine the level of knowledge acquisition by students.

INDICATIVE LIST OF QUESTIONS FOR THE EXAM IN THE DISCIPLINE "EPIZOOTOLOGY AND INFECTIOUS DISEASES"

I. GENERAL EPIZOOTOLOGY:

1. The concept of immunity and its types.
2. The concept of pathogenicity and virulence (give examples).
3. Research methods in epizootology.
4. Infection and forms of its manifestation.
5. Dynamics of manifestation of infectious disease.
6. The concept of epizootic process (driving forces of the epizootic process).
7. Patterns of development and intensity of the epizootic process.
8. The influence of natural and climatic and socio-economic factors on the epizootic process.
9. The concept of epizootic outbreak. The concept of natural foci of infectious diseases (give examples).
10. The main tasks of the epidemiological examination. Describe a plan for a complete epidemiological survey of the farm.
11. Nomenclature of infectious diseases (principles of classification of infectious diseases).
12. General and special prevention of infectious diseases of animals and poultry.
13. Complex of health-improving measures and elimination of infectious diseases of animals and poultry. The concept of quarantine and quarantine restrictions in disadvantaged areas (farms)
14. Disinfection and its purpose (types and objects), methods of disinfection.
15. Deratization and its purpose (types and objects), methods of deratization.
16. Disinsection and its purpose (types and objects), methods of disinsection.
17. Quality control of disinfection (sampling procedure for bacteriological control).
18. Organization of treatment of animals suffering from infectious diseases.
19. Describe the rules and methods of selection of pathological material for laboratory diagnosis of infectious animal diseases (bacteriological and virological studies).
20. Describe the rules and methods of blood sampling in animals for serological testing.
21. Safety rules and personal hygiene when examining an animal suspected of having an infectious disease.
22. Methods and techniques of introduction of biological products into the animal's body.
23. Describe the rules of storage and transportation of biological products on the example of vaccines
24. Hardware and non-hardware methods of aerosol disinfection.
25. Requirements for the plan of anti-epizootic and health measures.
26. Describe the technique of intradermal tuberculin testing and accounting for allergic reactions in cattle.
27. Describe the technique of conducting maleic ophthalmic testing in horses.
28. Describe the technique of tuberculin testing and accounting for allergic reactions in pigs.
29. Describe the technique of tuberculin testing and accounting for allergic reactions in birds.
30. The concept of "morbidity", "mortality", "lethality". The value of these coefficients for epizootology.
31. The concepts of "endogenous" and "exogenous" infection, "relapse", "remission", "reinfection", "secondary infection", "superinfection" (definitions, examples).
32. The concept of "enzootic", "epizootic", "panzootic", "sporadic case" (give examples from the course of general epizootology).

II. SPECIAL EPIZOOTOLOGY:
(common diseases)

1. Give a complete description of the pathogen of anthrax (cultural and morphological properties, resistance).
2. Give a complete description of the causative agent of tetanus (cultural and morphological properties, resistance).
3. Give a complete description of the causative agent of botulism (cultural and morphological properties, resistance).
4. Give a complete description of the causative agent of leptospirosis (cultural and morphological properties, resistance).
5. Give a complete description of the causative agent of listeriosis (cultural and morphological properties, resistance).
6. Give a complete description of the causative agent of foot-and-mouth disease (cultural and morphological properties, resistance).
7. Give a complete description of the causative agent of tuberculosis (cultural and morphological properties, resistance).
8. Give a complete description of the causative agent of pasteurellosis (cultural and morphological properties, resistance).
9. Clinical and epizootiological features of brucellosis in sheep and goats.
10. Describe the characteristic pathological and anatomical changes in anthrax in cattle.
11. Describe the laboratory diagnosis of anthrax.
12. Features of the epizootic process in tuberculosis.
13. Describe the pathological and anatomical changes in tuberculosis in cattle.
14. Describe the laboratory diagnosis of leptospirosis.
15. Describe the pathogenesis and clinical signs of rabies in animals.
16. Describe the laboratory diagnosis of tuberculosis.
17. Describe the laboratory diagnosis of dermatomycoses in farm animals.
18. Clinical and epizootiological features of foot-and-mouth disease in farm animals.
19. Etiopathogenesis of botulism in farm animals.
20. Etiology and pathogenesis of tetanus in farm animals.
21. Clinical signs of brucellosis in farm animals.
22. Describe the clinical signs of tetanus in horses.
23. Describe the clinical signs of pasteurellosis.
24. Etiology, clinical and epizootiological features of listeriosis.
25. Etiology, clinical and epizootiological features of tularemia.
26. Etiology and pathogenesis of smallpox in animals.
27. Etiology, clinical and epizootiological features of leptospirosis.
28. Describe the laboratory diagnosis of animal rabies.
29. Clinical and epizootiological features of listeriosis in farm animals.
30. Etiology and pathogenesis of tularemia in farm animals.
31. Clinical and epizootiological features of chlamydia in farm animals and birds.
32. Etiology, clinical and epizootiological features of animal influenza.

TICKET № 1

	1. Arrange the sequence of clinical studies of animals:	
I	A	General research
II	B	Collection of anamnesis
III	C	Research of separate bodies and systems
IV	D	Laboratory tests
V	E	Special research methods

VI	F	Animal registration

	2. The erythrocyte sedimentation rate is determined by the method of diagnosing infectious diseases. (In the answer sheet, submit in one word at the pass)
1	… Serological
2	… Hematological
3	… Immunological
4	… Virological

	3. Choose the appropriate definition of the period of illness:		
1	Incubative	A	- is characterized by the appearance of typical symptoms of the disease
2	premonitory	B	- the period from the moment of penetration of the pathogen into the animal's body until the appearance of the first clinical signs;
3	period of full development of clinical signs of the disease	C	- characterized by the development of nonspecific clinical signs (fever, general weakness, loss of appetite, etc.)

	4. Accounting for ophthalmic tests for malein is carried out after ..... hours?
1	2-3
2	6-8
3	9-12
4	12 i 24
5	3 - during the day
6	3 - during the day and the last 24 days after the introduction of malein

	4. What type of mechanism of transmission of the pathogen is also called aerogenic?
1	Contact
2	air-drop
3	fecal-oral
4	Transmissible
5	Transovarian

	5. An allergic reaction is a reaction of hypersensitivity of a sensitized organism to repeated administration of… ..? (*In the answer sheet, give the answer in one word in the space*)
1	… Allergen
2	… Antigen
3	… Adjuvant
4	… Serum
5	… Vaccines

	6. Specific prevention includes:
1	- preventive isolation, forced quarantine and observation to clarify the diagnosis
2	- immunoprophylaxis through the use of various specific drugs - vaccines, sera, immunoglobulins
3	- special diagnostic tests (tuberculinization, maleinization, serological diagnosis of brucellosis, etc.)
4	- treatment-and-prophylactic measures of special purpose (premixes and aerosols at prevention of alimentary and respiratory infections)
5	- vitamin therapy and mineral supplementation

	7. Arrange in accordance with the terminology:

1	Homoglobulins	A	-are proteins produced by different cells of the body during infection with the virus and have no specificity
2	Interferons	B	- complex sets of various biologically active and medicinal substances
3	Premixes	C	- serum proteins, which are carriers of the bulk of antibodies
4	Biogenic stimulants	D	- non-specific pharmacological substances formed in tissues under adverse environmental conditions

	8. After the recovery of the farm (elimination of an infectious disease) before the removal of quarantine or restrictive measures carried out …disinfection (In the answer sheet to give one word in the place of the pass)
1	… pre-commissioning…
2	… final…
3	… technological…
4	… forced…
5	… preventive…

	9. …. .. - an extremely important document, which is kept along with the documents for official use and entered in the inventory book of the district state enterprise of veterinary medicine. (In the answer sheet, submit in one word at the pass)
1	… Journal of anti-epizootic measures…
2	… Journal of registration of sick animals…
3	… Act…
4	… Journal of the epizootic state of the district…
5	… Outpatient journal…
6	… Medical history…
7	… Plan of anti-epizootic measures…

	10. Natural focal disease of agricultural, domestic, industrial and wild animals, which is manifested in typical cases by fever, jaundice, hemoglobinuria, necrosis of mucous membranes and skin, in pigs - mass abortions, birth and death of non-viable young animals. -… .. (*In the answer sheet, give the answer in one word in the space*)
1	… leptospirosis.
2	… listeriosis.
3	… botulism.
4	… tetanus.
5	… malignant edema.

	11. Which of the following diseases are caused by bacteria?
1	Murrain
2	Rabies
3	Anthrax
4	Botulism
5	Microsporia
6	Aujeszky's disease
7	Trichophytia
8	None of the above
9	All listed

	12. Which of the definitions most fully characterizes the rage?
1	Acute zoonotic, contagious viral disease of all mammalian species, characterized by lesions of the central nervous system (agitation, convulsions, paralysis), signs of pneumonia, fever, and intolerable itching and itching in all species except pigs, minks and sables.
2	Acute infectious disease of all warm-blooded, belonging to the group of viral zoonoses and developing as a result of bite or salivation of a sick animal, is characterized by encephalomyelitis, leading to paralysis and death, extremely high aggression, manifestations of sharp excitation of motor centers, ulcers followed by paralysis and salivation.
3	Acute infectious disease belonging to the group of viral zoonoses and developing as a result of a bite by a sick animal, characterized by encephalomyelitis, leading to paralysis and death, spasms of the muscles of the pharynx and respiratory muscles, followed by paralysis and salivation.

	13. Chronic infectious disease of all species of agricultural and wild mammals, characterized by abortions with delayed litter, animal reproductive disorders, endometritis, orchitis, bursitis, hygroma and arthritis and is called -… ..
1	… brucellosis.
2	… pasteurellosis.
3	… tetanus
4	… leptospirosis.
5	… botulism.

8. Teaching methods

- Verbal (lecture, explanation, discussion, instruction, conversation);
- Visual (demonstration of presentations, photo videos);
- Practical (laboratory work, practical work, statistical processing)

9. Forms of control

- Current (survey, testing);
- Boundary (test, abstract, modules);
- Final (testing, test, exam).

10. Distribution of points received by students. Assessment of student knowledge is on a 100-point scale and is translated into national assessments according to table. 1 "Regulations on examinations and tests in NULES of Ukraine" (order of entry into force of 27.12.2019 № 1371)

Student rating, points	**National assessment based on the results of the compilation**	
	exams	**offsets**
90-100	**Perfect**	**Credited**
74-89	**Fine**	
60-73	**Satisfactorily**	
0-59	**Unsatisfactorily**	**Not credited**

To determine the rating of the student (listener) for mastering the discipline **Rdis** (up to 100 points) the obtained rating for certification (up to 30 points) is added to the rating of the student (listener) for academic work $\mathbf{R_{HP}}$ (up to 70 points): $\mathbf{R_{dis} = R_{HP} + R_{AT}}$.

11. Methodological support

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5. Методичні вказівки «Лептоспіроз сільськогосподарських тварин». Центр інформаційних технологій, Київ. - Недосєков В.В., Литвин В.П., Поліщук В.В., Мельник В.В., Гомзиков О.М.. - Київ, 2010. - 23 с.
6. Методичні вказівки «Аерозолі у ветеринарній медицині». Центр інформаційних технологій, Київ. - Недосєков В.В., Литвин В.П., Поліщук В.В., Гомзиков О.М., Мельник В.В. - Київ, 2010. - 32 с.
7. Методичні вказівки «Алергічні дослідження у ветеринарній медицині». Центр інформаційних технологій, Київ. Недосєков В.В., Литвин В.П., Поліщук В.В., Мельник В.В., Гомзиков О.М. – Київ, 2010 - 17 с.
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12. Recommended literature

- **Basic literature**

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Агропромиздат, 1987. – 288 с.

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13. Information resources

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