Assessment tools for conducting attestation in discipline «Biology» for students of 2025 year of admission under the educational programme 31.05.02 Dentistry, specialisation Dentietry (Specialist's), form of study full-time for the 2025-2026 academic year

1. Assessment tools for conducting current attestation in discipline/practice.

1.1. The current attestation includes the following types of tasks: testing, solving situational problems, assessing the acquisition of practical skills (abilities), writing and defending an essay, and an interview on test questions.

1.1.1. Examples of test tasks

Checked indicators of achievement of competence: ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

01. Pick out the organelle that can not be found in animals cells…

a) smooth ER
b) chloroplast
c) mitochondria
d) ribosome

02. All types of cells contain which of the following…

a) endoplasmic reticulum
b) plasma membrane
c) nucleus
d) mitochondria

03. What has the Rough ER attached to it…

a) nucleolus
b) Golgi apparatus
c) ribosomes
d) chromosomes

04. Select the item that is not present in plant cells…

a) cell wall
b) nucleus
c) chloroplast
d) centrioles

05.The ability of two polynucleotide strands to hybridize is based on which of the following principles …

a) double helical nature of dna
b) the presence of phosphodiester bonds
c) complementary base pairing
d) the presence of 3’ and 5’ ends

06. The genotype “SS” is …

a) a polygenic trait
b) homozygous recessive

c) homozygous dominant
d) heterozygous
07. The function of DNA polymerase …
a) It reads the existing template chain from its 3’ end to its 5’ end
b) It removes the RNA primers and replaces them with DNA
c) It joins the two Okazaki fragments with phosphodiester bonds to produce a continuous chain
d) It unwinds the superhelix as well as the double-stranded DNA helix to create a replication fork
08. A recessive gene is a gene…
a) suppressed by the dominant gene with complete dominance
b) manifesting in a homozygous state with complete dominance
c) manifesting in a heterozygous state with complete dominance
d) manifesting in a heterozygous state with incomplete dominance
09. The diagnostic stage of malarial plasmodium in a thin blood smear is ... a) oocyst
b) ookinete
c) sporozoite
d) ring schizont
10. You can become infected with liver fluke ...
a) by drinking water with the larval stage
b) by eating pork
c) by eating fish
d) by a mosquito bite

1.1.2. Examples of situational tasks
Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

1. In humans, spotted skin (S) is dominant to non-spotted (s) and woolly hair (W) is dominant over non-woolly hair (w). a) List the possible genotypes and phenotypes of the children from a marriage of spotted (Ssww) man and a woolly-haired (ssWw) woman. b) Define the possible genotypes and phenotypes of the children from both heterozygous parents with non-spotted skin and non-woolly hair.

2. In humans, cataracts in the eyes (C) and fragility of the bones (F) are caused by dominant alleles that assort independently. A man with cataracts and normal bones marries a woman without cataracts but with fragile bones. The man’s father had normal eyes, and the woman’s father had normal bones. What is the probability that the first child of this couple will (a) be free from both abnormalities; (b) have cataracts but not have fragile bones; (c) have fragile bones but not have cataracts; (d) have both cataracts and fragile bones?

1.1.3. Examples of tasks for assessing the acquisition of practical skills
Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
Problem 1. A rural resident consulted a doctor complaining of nausea, abdominal pain, and indigestion. When questioning the patient, it was established that he had eaten unwashed tomatoes from his garden. He used the contents of a cesspool as fertilizer. Helminth eggs were

found in the patient's feces; they were oval in shape, 30-40 μm x 50-60 μm in size, and had a bumpy shell (examine the slide under a microscope).

Questions

1. What helminthiasis can be assumed in the patient?
2. How does the invasion occur?
3. What is the geographic distribution of this parasite?
4. What personal and public preventive measures exist for this parasite?

Problem 2. A fisherman who regularly eats dried fish consulted a doctor about pain in the right hypochondrium. Palpation revealed an enlarged and hardened liver and gallbladder. Pale yellow eggs with a cap on one pole were found in the patient's feces (examine the slide under a microscope).

Questions

1. What kind of invasion can be assumed in this case?
2. How does infection occur?
3. What morphological features does this parasite have?
4. Explain the life cycle of the parasite.
5. Name preventive measures.

1.1.4. Examples of abstract topics (essay)

Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

1. Embryonic induction. Differentiation and integration in development.
2. Critical periods of development.
3. Genetic, molecular, cellular and systemic mechanisms of aging.

1.1.5. Examples of control questions for an interview

Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

1. Evolutionarily determined levels of life organization: molecular genetic, cellular, organismic, population-species, biocenotic, biosphere.
2. Cell theory, main stages of development, current state of cell theory.
3. Comparative characteristics of prokaryotic and eukaryotic cells.
4. Membrane systems of cells (membrane structure, their functions, location in the cell).

1.2. Assessment tools for independent work of students

Assessment of independent work includes testing.

1.2.1. Examples of test tasks with a single answer

Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

01. Pick out the organelle that can not be found in animals cells…

a) smooth ER
b) chloroplast
c) mitochondria
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02. All types of cells contain which of the following…

a) endoplasmic reticulum

b) plasma membrane
c) nucleus
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03. What has the Rough ER attached to it…
a) nucleolus
b) Golgi apparatus
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05.The ability of two polynucleotide strands to hybridize is based on which of the following principles …
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06. The genotype “SS” is …
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07. The function of DNA polymerase …
a) It reads the existing template chain from its 3’ end to its 5’ end
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08. A recessive gene is a gene…
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09. The diagnostic stage of malarial plasmodium in a thin blood smear is ... a) oocyst
b) ookinete
c) sporozoite
d) ring schizont
10. You can become infected with liver fluke ...
a) by drinking water with the larval stage
b) by eating pork
c) by eating fish
d) by a mosquito bite

1.2.2. Examples of test tasks with multiple choice and/or matching and/or sequencing

Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

1. Choose three answers out of six. Characteristics that are used to describe linked inheritance of traits... a) two types of diheterozygous gametes are formed

b) one gene affects the development of several traits

c) the relationship of genes is disrupted by crossing over

d) genes located on one chromosome are inherited together

d) when diheterozygotes are crossed, four types of gametes are formed in equal proportions

e) two genes determine the development of one trait

2. Choose three answers out of six. Characteristic features of pork tapeworm proglottids:

a) uterus with 17-35 branches

b) uterus with 10-12 branches

c) two lobes of the ovary

d) three lobes of the ovary

e) more mobile

e) less mobile

3. Choose three answers out of six. Characteristic features of bovine tapeworm proglottids: a) uterus with 17-35 branches

b) uterus with 10-12 branches

c) two lobes of the ovary

d) three lobes of the ovary

d) more mobile

e) less mobile

4. Establish the corresponding

5. Match the parasite with the stage of its life cycle that is invasive for humans by selecting the corresponding position from the second column for each position in the first column:

Parasite	Invasive stage
1. cat fluke	A. metacercaria
2. lung fluke	
3. roundworm	B. egg
4. whipworm	
5. beef tapeworm	C. finna
6. broad tapeworm	

6. Match human parasites with their morphological adaptations by selecting the corresponding position from the second column for each position given in the first column:

Parasite	Morphological adaptation
1. cat fluke	A. presence of suckers
2. beef tapeworm	

3. echinococcus	B. presence of suckers and hooks
4. pork tapeworm	
5. dwarf tapeworm	C. presence of bothria
6. broad tapeworm	

7. Establish the sequence of developmental stages in the life cycle of the liver fluke, starting from the moment of hatching from the egg. Write the corresponding sequence of numbers:

1. miracidium

2. sporocyst

3. redia

4. cercaria

5. adolescaria

8. Establish the sequence of developmental stages in the life cycle of the cat fluke, starting from the moment of hatching from the egg. Write the corresponding sequence of numbers.

1. miracidium

2. sporocyst

3. redia

4. cercaria

5. metacercaria

1.2.3. Examples of open-ended questions (open-ended questions)

Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

1. The microphotogram shows an element of the body of one of the human parasites. Name the parasite. In your answer, give only the name of the parasite in Latin using two words.

2. The microphotogram shows the appearance of one of the human parasites. Name the organ whose anatomical position allows you to unambiguously identify the species of the parasite. In your answer, give only the name of the organ using one word in Latin in the plural.

3. The microphotogram shows the eggs of one of the human parasites. The eggs were found in a urine sample. Name the disease caused by this parasite. In your answer, give only the name of the disease using two words in Latin.

2. Assessment tools for conducting intermediate attestation in a discipline/practice

Intermediate attestation is carried out in the form of an exam.

The intermediate attestation includes the following types of tasks: solving a situational problem, interview.

2.1. Examples of situational tasks

Checked indicators of achievement of competence:ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

1. In humans, spotted skin (S) is dominant to non-spotted (s) and woolly hair (W) is dominant over non-woolly hair (w). a) List the possible genotypes and phenotypes of the children from a marriage of spotted (Ssww) man and a woolly-haired (ssWw) woman. b) Define the

possible genotypes and phenotypes of the children from both heterozygous parents with non-spotted skin and non-woolly hair.

2. In humans, cataracts in the eyes (C) and fragility of the bones (F) are caused by dominant alleles that assort independently. A man with cataracts and normal bones marries a woman without cataracts but with fragile bones. The man's father had normal eyes, and the woman's father had normal bones. What is the probability that the first child of this couple will (a) be free from both abnormalities; (b) have cataracts but not have fragile bones; (c) have fragile bones but not have cataracts; (d) have both cataracts and fragile bones?

2.2. List of questions to prepare for the intermediate attestation:

№	Questions	Checked indicators of achievement of competence:
1.	Definition of biology as a science. Relationship of biology with other sciences. Importance of biology for medicine. Definition of the concept of "life" at the present stage of science. Fundamental properties of living things.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
2.	Evolutionary-conditioned levels of life organization.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
3.	Man in the system of nature. Specificity of manifestation of biological and social in man.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
4.	Precellular level of organization of living matter. Viruses. Medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
5.	Prokaryotes. Eukaryotes. Characteristic features of organization. Hypotheses of origin of eukaryotic cells: symbiotic, invagination, hypothesis of viral origin of the nucleus, inside-out model.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
6.	Cell theory. History and current state.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
7.	The cell as an open system. Organization of information, substance and energy flows in the cell. Specialization and integration of cells of a multicellular organism.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
8.	The cell cycle, its periodization. Regulation of the cell cycle. Problems of cell proliferation in medicine.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
9.	Reproduction. Evolution of reproduction, forms of reproduction.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

10.	Meiosis: cytological and cytogenetic characteristics. Biological significance of meiosis	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
11.	Characteristics of spermatogenesis and oogenesis. Morphology of gonads and gametes.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
12.	Differences between spermatogenesis and oogenesis.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
13.	Characteristics of the main stages of fertilization. Biological significance of fertilization. Parthenogenesis. Classification. Characteristics of the main forms. Androgenesis. Gynogenesis.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
14.	Ontogenesis. General patterns of embryonic development of animals and humans. Critical periods.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
15.	Stages of embryogenesis. Cleavage. Gastrulation, histo- and organogenesis. Interaction of parts of the developing organism. Embryonic induction. Provisional organs of the embryo.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
16.	Postembryonic period of ontogenesis, its periodization in humans. Characteristics of the periods of postembryonic development of humans.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
17.	Growth. Types of growth. Hormonal, genetic and environmental factors regulating growth.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
18.	Biological and social aspects of aging and death. Genetic, molecular, cellular and systemic mechanisms of aging. Theories of aging. The problem of longevity. The concept of gerontology and geriatrics.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
19.	Biological and medical significance of regeneration problems. Manifestation of regenerative capacity in humans. Regeneration of pathologically altered organs and reversibility of pathological changes. Regeneration therapy.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
20.	Subject, tasks, methods of genetics. Stages of development of genetics. Contribution of domestic scientists to development of genetics. Importance of genetics for medicine.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
21.	Gene level of organization of hereditary material. Evidence of role of DNA. Structure, types and functions of DNA. Structure of RNA. Types of RNA. Evolution of the concept of "gene". Classification and properties of genes.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
22.	DNA replication. Characteristic of stages.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

23.	Chromosomal level of organization of hereditary material. Compaction of chromatin. Morphology of metaphase chromosome. Heterochromatin and euchromatin. Types of metaphase chromosomes.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
24.	Genomic level of organization of hereditary material. Viral genomes, prokaryotic genome, eukaryotic genome. Features of the human genome.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
25.	Stages of gene expression in prokaryotes and eukaryotes.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
26.	Transcription. Transcription stages. Transcription features in pro- and eukaryotes. Processing and splicing.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
27.	Translation. Translation stages. Genetic code and its properties.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
28.	Regulation of gene expression in prokaryotes. Operon model.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
29.	Levels of gene expression regulation in eukaryotes: at the level of genetic material structure, at the level of transcription, at the level of translation, at the post-translational level. Supracellular level of control.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
30.	Basic concepts and terms of modern genetics. Patterns of inheritance established by G. Mendel. Mendelian traits in humans.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
31.	Forms of interaction of allelic and nonallelic genes.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
32.	Multiple allelism. Inheritance of ABO blood groups and Rh factor in humans. Medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
33.	Genetics of sex. Methods of determining sex in nature. Chromosomal determination of sex. Determination of sex in humans.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
34.	Inheritance of human traits linked to X and Y chromosomes. Medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
35.	Linked inheritance. Experiments of T. Morgan. Chromosomal theory of heredity.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

36.	Variability. Types of variability. The significance of variability for biology and medicine.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
37.	Modification variability, the role of heredity and environment in shaping the phenotype. The concept of the norm of the reaction of expressivity and penetrance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
38.	Genetic recombinations. Recombination mechanisms in prokaryotes and eukaryotes. Significance for biology and medicine.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
39.	Mutational variability. Classification of mutations. Gene mutations. Chromosomal mutations. Genomic mutations. Examples of mutations in humans.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
40.	Mutagenesis. Types of mutagens. Causes of DNA damage. Types of DNA damage.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
41.	Repair of genetic material. Types of repair.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
42.	The main stages of development of medical genetics. The tasks of medical genetics. The characteristics of a human as an object of genetic research.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
43.	Cytogenetic methods of diagnostics of human chromosomal disorders. Human karyotype. Characteristics of methods of differential staining of chromosomes.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
44.	Molecular-cytogenetic methods of diagnostics of hereditary disorders. Advantages of DNA diagnostics.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
45.	Biochemical methods. Objectives and tasks. Stages of the biochemical method. Screening programs.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
46.	Prenatal diagnostics. Invasive methods of prenatal diagnostics.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
47.	Medical genetic counseling. Objectives and tasks. Features of prospective and retrospective counseling. Genetic risk.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
48.	Human population genetics. The concept of population. Demographic characteristics of the population. Features of human populations.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
49.	Population statistical method. Hardy-Weinberg law: formulation and mathematical expression.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

50.	The effect of elementary evolutionary factors on the modern human population. Population gene pool. The genetic load of humanity.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
51.	The concept of micro- and macroevolution. The relationship between microevolution and macroevolution.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
52.	Phylogeny of the nervous system. Ontophylogenetic prerequisites for congenital malformations of organ systems in humans.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
53.	Phylogenesis of the circulatory system. Ontophylogenetic prerequisites for congenital malformations of organ systems in humans.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
54.	The position of the species Homo sapiens in the animal world. Qualitative uniqueness of man.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
55.	The biosphere and man. Modern concepts of the biosphere: biochemical, biogeocenological, thermodynamic, geophysical, cybernetic, socio-ecological.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
56.	The noosphere is the highest stage of the evolution of the biosphere. Biotechnosphere. Medical and biological aspects of the noosphere.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
57.	Definition of the science of ecology. Environment as an ecological concept. Environmental factors.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
58.	Ecosystem, biocenosis, anthropobiocenosis. Producers, consumers, reducers. Food chains. Specifics of the human living environment.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
59.	Subject of human ecology. Biological and social aspects of population adaptation to living conditions. Levels of human ecological connections (individual, group, global). Main directions and results of anthropogenic changes in the environment.Paths of origin of various groups of parasites.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
60.	Main forms of biological connections in anthropobiogeocenoses. Parasitism as a biological phenomenon. Classification of parasitic forms of animals.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
61.	Principles of interaction between parasite and host at the level of individuals. Paths of morphophysiological adaptation of parasites.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
62.	Questions of ecological parasitology. Population level of interaction between parasites and hosts. Types, principles of regulation and mechanisms of stability of the "parasite-host" system.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

63.	Life cycles of parasites. Alternation of generations and the phenomenon of host change. Intermediate and main hosts.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
64.	The concept of bio- and geohelminths. Vector-borne and natural focal diseases. The concept of anthroponoses and zoonoses. The doctrine of Academician E.N. Pavlovsky on the natural focality of parasitic diseases. Biological principles of combating vector-borne and natural focal diseases.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
65.	Characteristic features of the organization of Protozoa. Significance for medicine.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
66.	Dysenteric amoeba. Morphology, development cycle, rationale for laboratory diagnostics, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
67.	Trichomonas, lamblia. Morphology, development cycle, routes of infection, rationale for laboratory diagnostic methods.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
68.	Morphology and biology of leishmaniasis pathogens. Rationale for laboratory diagnostics and preventive measures.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
69.	Trypanosomes. Morphology, development cycles, rationale for laboratory diagnostics, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
70.	Malaria plasmodia. Morphology, development cycle, species differences. Combating malaria. Tasks of the antimalarial service at the present stage.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
71.	Toxoplasma. Morphology, development cycle, routes of infection, rationale for laboratory diagnostics and prevention methods.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
72.	Flatworms. Characteristic features of the organization. Medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
73.	General characteristics of flukes. Trematode development cycle	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
74.	Liver fluke. Morphology, development cycle, routes of infection, rationale for laboratory diagnostics and prevention methods.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
75.	Cat fluke. Morphology, development cycle, routes of infection, rationale for laboratory diagnostics and prevention methods. Opisthorchiasis foci. Volgograd region as a natural focus of opisthorchiasis.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
76.	Lanceolate fluke. Morphology, development cycle, routes of infection, rationale for laboratory diagnostic methods, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

77.	Schistosomes. Morphology, development cycle, rationale for laboratory diagnostic methods, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
78.	General characteristics of tapeworms. Types of fin tapeworms.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
79.	Beef tapeworm. Morphology, development cycle, rationale for laboratory diagnostic methods, routes of infection, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
80.	Pork tapeworm. Morphology, development cycle, rationale for laboratory diagnostic methods, routes of infection, prevention. Cysticercosis, routes of infection.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
81.	Dwarf tapeworm. Morphology, development cycle, rationale for laboratory diagnostic methods, routes of infection, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
82.	Fish tapeworm. Morphology, development cycle, rationale for laboratory diagnostic methods, routes of infection, prevention. Volgograd region as a natural focus of diphyllobothriasis.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
83.	Echinococcus and alveococcus. Morphology, development cycles, routes of infection, diagnostics, prevention. Differences in larval stages. Volgograd region as a natural focus of echinococcosis.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
84.	Roundworms. Characteristic features of the organization. Medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
85.	Ascaris. Morphology, development cycle, justification of laboratory diagnostic methods, routes of infection, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
86.	Trichuris. Morphology, development cycle, justification of laboratory diagnostic methods, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
87.	Pinworm. Morphology, development cycle, justification of laboratory diagnostic methods, prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
88.	Ancylostomids. Morphology, development cycles, rationale for laboratory diagnostic methods, routes of infection, prevention. Foci of ancylostomiasis and ways of their elimination.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
89.	Trichinella. Morphology, development cycle, rationale for laboratory diagnostic methods, routes of infection and prevention.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
90.	The main types of filariasis (wuchereriasis, oncocerciasis, loiasis, brugiosis). Development cycle, rationale for laboratory diagnostic methods, prevention of filariasis.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

91.	Methods of diagnostics of parasitic diseases.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
92.	Arthropods. Characteristic features of the organization. Medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
93.	Arachnids. Characteristic features of the organization. Medical significance. Poisonous arachnids.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
94.	Ixodid and argasid ticks. Morphology, development, medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
95.	Scabies mite. Morphology, development, medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
96.	Insects. Characteristic features of the organization. Medical significance.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
97.	Lice. Morphology, development, epidemiological significance, control measures.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
98.	Fleas. Morphology, development, epidemiological significance, control measures.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
99.	Mosquitoes. Structure, development cycles, medical significance, control measures.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.
100.	Housefly, Tsetse fly, Wohlfahrt fly. Morphology, epidemiological significance, control measures.	ОПК-8.1.1. з.-1. з-2. з-3; ОПК-9.1.1. з.-1. з-2.

1.2.3. Example of an exam ticket

Федеральное государственное бюджетное образовательное учреждение высшего образования
«Волгоградский государственный медицинский университет»
Министерства здравоохранения Российской Федерации

Кафедра: _Биологии_
Дисциплина: _Биология_
Специалитет по специальности 31.05.01 Лечебное дело
Учебный год: 2025-2026

Экзаменационный билет № 8

Exam questions:

1. Reproduction. Evolution of reproduction. Forms of asexual and sexual reproduction.

2. Gene linkage. Experiments of T. Morgan. Crossing over. Basic provisions of the chromosome theory of heredity.

3. Malaria plasmodia. Morphology, development cycles, rationale for laboratory diagnostics, prevention.

Exam task:

1. In an area with a population of 100,000 people, 10 patients with phenylketonuria (inheritance is autosomal recessive) are registered. Determine the number of heterozygotes for the analyzed trait in this population.

М.П. Заведующий кафедрой _____ ФИО

The full fund of assessment tools for the discipline/practice is available in the VolgSMU Electronic Information and Educational System at the link:

https://elearning.volgmed.ru/course/view.php?id=10304

Considered at the Biology department meeting, protocol of «20» May 2025 г. № 17

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Head of the Department G.L. Snigur