

Academic programme
component

31.05.01 General Medicine
programme

B1.O.28
discipline code

ASSESSMENT MATERIALS

Discipline **B1.O.28 Pathophysiology**

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Department meeting
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signature

1. Criteria and assessment of competencies and their mastery indicators, formed by the discipline

Code and competence name	Code and indicator of competence mastery	Results of training in the discipline (module)			Formative assessment	Interim assessment
		<i>To know</i>	<i>To be able to</i>	<i>To have</i>		
ОПК-5 Can analyze morphofunctional and physiological indicators as well as pathological processes in human body to achieve professional goals	ИД-2 ОПК-5. Defines and analyzes morphological, functional, physiological states and pathological processes of the human body based on knowledge of biomolecules, subcellular cultures, their biochemical characteristics, metabolic pathways and regulatory principles ИД-4 ОПК-5. Determines and analyzes morphological, functional, physiological states and pathological processes of the human body based on knowledge about body systems, their	- normal structure and topography of organs and body systems; - patterns of functioning of organs and systems, their regulation, - structure and functions of cells, their metabolism; development of tissues and their functions; - the chemical composition and properties of the substances that make up living systems, their	- evaluate and compare normal and altered morphofunctional indicators	- skills of an integrated approach to assessing the functions of body systems	- a set of tasks for practical work; - case tasks; - test tasks; - unit progress check; - colloquium; - final test	formative assessment results examination cards

	functions, regulation of activity					
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2. Competencies mastery (indicators of their mastery) level assessment

Competencies mastery (their indicators) indices	Criteria and grading system of competencies mastery (indicators of their mastery) assessment			
	Insufficient <i>(«unsatisfactory»)</i>	Sufficient <i>(«satisfactory»)</i>	Above average <i>(«good»)</i>	Advance <i>(«excellent»)</i>
Extent of knowledge	Knowledge level is below the required. Major mistakes occurred.	Minimally allowed knowledge level. Minor mistakes occurred.	Knowledge level corresponds well to the educational programme. Minor errors occurred.	Knowledge level corresponds well to the educational programme.
Ability mastery	Basic abilities were not demonstrated during standard tasks completion. Major mistakes occurred.	Basic abilities were demonstrated. All tasks were completed, yet not in full (clarifications are absent, conclusions are incomplete)	All main abilities were demonstrated. All tasks were completed in full, yet with few errors.	All main abilities were demonstrated. All main and additional tasks were completed without mistakes or errors.
Skill mastery (having experience)	Basic skills were not demonstrated during standard tasks completion. Major mistakes occurred	Minimum set of skills for standard tasks completion with minor error, is acquired.	Basic skills were demonstrated in completing standard tasks, yet with few errors.	All main skills were demonstrated in completing main and additional tasks without mistakes or errors.
Competence mastery characteristics	Competencies have not been acquired. The acquired knowledge, skills, and abilities are not enough to solve practical (professional) tasks. OR Insufficient number of credit points as per the established range.	Competencies mastery is adequate. The acquired knowledge, abilities, and skills are mostly sufficient to complete professional tasks. OR Sufficient number of credit points is earned as per the established range.	Competencies mastery mainly satisfies the requirements. The acquired knowledge, abilities, and skills are mainly sufficient to complete professional tasks. OR Sufficient number of credit points is earned as per the established range.	Competencies mastery satisfies the requirements to the full extent. The acquired knowledge, abilities, and skills are fully sufficient to complete difficult professional tasks, including non-standard. OR Sufficient number of credit points is earned as per the established range.

3. Criteria and grading system of the formative assessment tasks

3.1. Criteria and grading system of practical tasks

The list of practical tasks, task completion and presentation recommendations, requirements for results, structure, and contents of practical task report, etc., are presented in methodological guidelines on mastering the discipline as well as in MAU LMS Moodle.

Grade/points	Assessment criteria
<i>Excellent / 2</i>	The task is completed correctly and in full. The laboratory report is well-prepared and satisfies the requirements. Answers to the teacher's questions (during the presentation) are full.
<i>Good / 1,5</i>	The task is completed in full, yet without sufficient justification or a minor error, which does not impact the argumentation sequence, occurred. All task completion requirements are satisfied.
<i>Satisfactory / 1</i>	The task is completed partially, with mistakes. Adequate level of completed laboratory or practical tasks. Majority of task completion requirements are satisfied.
<i>Unsatisfactory / 0</i>	The task is completed with a significant number of mistakes and at a low level. Many requirements for the assignment have not been satisfied. OR The task has not been completed.

3.2. Criteria and grading system of tests

The list of test questions and tasks, as well as test procedure description are presented in methodological guidelines on mastering the discipline, as well as in MAU LMS Moodle.

Assessment materials include a typical test variant:

Test on "Pathology of the nervous system" unit:

1. What is the consequence of disruption of the integrity of the corticospinal tract?
 - 1) hyperkinesis
 - 2) central paralysis
 - 3) peripheral paralysis
 - 4) ataxia
2. What is the consequence of damage to peripheral motor neurons?
 - 1) hyperkinesis
 - 2) central paralysis
 - 3) peripheral paralysis
 - 4) ataxia
3. What signs are characteristic of central paralysis?
 - 1) strengthening of reflex movements
 - 2) absence of voluntary movements
 - 3) lack of reflex movements
 - 4) strengthening of voluntary movements
4. What signs are characteristic of peripheral paralysis?
 - 1) absence of voluntary movements
 - 2) lack of reflex movements
 - 3) strengthening of reflex movements
 - 4) strengthening of voluntary movements
5. Central paralysis is characterized by:

- 1) increased muscle tone
 - 2) decreased muscle tone
 - 3) lack of reflex movements
 - 4) loss of proprioceptive sensitivity on the damaged side
6. Peripheral paralysis is characterized by:
- 1) increased muscle tone
 - 2) decreased muscle tone
 - 3) lack of reflex movements
 - 4) loss of proprioceptive sensitivity on the damaged side
7. What change in sensitivity is a consequence unilateral damage to the spinal cord of the Gault and Burdach bundles?
- 1) loss of proprioceptive sensitivity on the side of the injury
 - 2) loss of proprioceptive sensitivity on the opposite side
 - 3) loss of temperature and pain sensitivity on the injured side
 - 4) loss of temperature and pain sensitivity on the opposite side
8. What change in sensitivity is a consequence of unilateral damage to the spinal cord of the lateral spinothalamic tract?
- 1) loss of proprioceptive sensitivity on the damaged side
 - 2) loss of proprioceptive sensitivity on the opposite side
 - 3) loss of temperature sensitivity on the damaged side
 - 4) loss of temperature sensitivity on the opposite side
9. What changes in sensitivity are a consequence of unilateral damage to the dorsal horns of the spinal cord?
- 1) loss of proprioceptive sensitivity on the damaged side
 - 2) loss of proprioceptive sensitivity on the opposite side
 - 3) loss of temperature sensitivity on the damaged side
 - 4) loss of pain sensitivity on the injured side
10. What change in motor function is a consequence of unilateral damage to the Gault and Burdach bundles in the spinal cord?
- 1) central paralysis
 - 2) peripheral paralysis
 - 3) hyperkinesia
 - 4) sensitive ataxia

Grade/points	Assessment criteria
<i>Excellent / 5</i>	90-100% of correct answers
<i>Good / 4</i>	70-89% of correct answers
<i>Satisfactory / 3</i>	50-69% of correct answers
<i>Unsatisfactory / 0</i>	49% or less of correct answers

3.3. Criteria and grading system of case tasks

Recommendations on case task solving are presented in the methodological guidelines on mastering the discipline and in MAU LMS Moodle.

Assessment materials include a typical case tasks:

Case 1. Patient A., 26 years old, consulted a doctor with complaints of general weakness, headaches, changes in appearance, enlargement of arms and legs. Over two years, the shoe size increased from 39 to 42. Objectively: there is an enlargement of facial features (massive brow and cheekbones, large nose, lips, ears). The chest is barrel-shaped; the collarbones are thickened. Enlarged hands and feet. No significant changes were found in the internal organs. Pulse - 78 per minute, blood pressure - 150/90 mm Hg.

With an excess or deficiency of which hormone are similar phenomena observed?

What is the name of the corresponding disease, what is its etiology?

Case 2. After a cerebral hemorrhage, a patient experienced a decrease in heart rate to 50 per minute. The pulse is rhythmic. What is this cardiac arrhythmia called and what is its pathogenesis? What ECG changes are observed in this case?

Case 3. Patient D., 42 years old, was admitted to the gynecological clinic with complaints of prolonged (from 2 to 3 weeks) and heavy cyclic uterine bleeding over the past year. Clinical data: pale skin, rapid pulse, uterine fibroid (benign tumor).

Blood test results: Hb – 68 g/l, erythrocytes – $2.8 \times 10^{12}/l$, reticulocytes – 0.05%, leukocytes – $4 \times 10^9/l$, ESR – 8 mm/h. Blood smear: hypochromia of erythrocytes, anisocytosis (microcytes predominate), poikilocytosis, single polychromatophils. The iron content in the blood serum is 6 $\mu\text{mol}/l$. What pathology does the patient have?

Grade/points	Assessment criteria
<i>Excellent</i>	The requirements are fully satisfied. Systemic and situational approaches are applied. Justified argumentation is given. Goals, tasks, case occurrence reasons are determined. Risks, difficulties in problem solving are identified. Action plan is devised.
<i>Good</i>	Goals, tasks, case occurrence reasons are determined correctly. Risks, difficulties in problem solving are identified. Action plan is devised, yet the algorithm of problem solving is not stated clearly and consecutively.
<i>Satisfactory</i>	Argumentation on the problem is given; goals, tasks, case occurrence reasons are determined. Possible connections of the problem with other problems are identified; action plan is partially devised.
<i>Unsatisfactory</i>	Unclear argumentation on the problem is presented or no argumentation is given. No goals, objectives, or results of upcoming activities are stated. The action plan contains serious mistakes.

3.4. Criteria and grading system of colloquiums

The recommendations for colloquium preparation are presented in the methodological guidelines on mastering the discipline, as well as in MAU LMS Moodle.

Assessment materials include typical colloquium topics:

Colloquium on the topic “Endocrinopathies. Pathophysiology of the nervous system and higher nervous activity”

Questions:

1. Characteristics of the main causes and mechanisms of endocrine disorders.
2. Pathophysiology of the pituitary gland. Acromegaly, gigantism, dwarfism. Itsenko-Cushing's disease.
3. Diabetes insipidus. Mechanisms of their development.
4. Pathophysiology of the adrenal glands. Addison's disease, pheochromocytoma, Itsenko-Cushing syndrome. Mechanisms of their development.
5. Primary and secondary aldosteronism. Conn's disease. Mechanisms of development.

6. Pathophysiology of the thyroid gland. Hyperthyroidism. Diffuse toxic goiter. Mechanisms of development.

7. Hypothyroidism. Cretinism, myxedema. Endemic goiter. Mechanisms of development.

8. General causes and mechanisms of disorders of the nervous system.

9. Typical pathological processes in the nervous system. Braking deficiency. Denervation syndrome. Spinal shock. Deafferentation. Trophic disturbances.

10. Pain. Pain receptors. Pain mediators. Mechanism of pain. Types of pain (somatic, neuropathic). Phantom pain. Causalgia. The meaning of pain for the body.

<i>Grade</i>	Assessment criteria
<i>Excellent / 4</i>	A complete, detailed answer to the question(s) posed. Student uses terminology fluently. Deep understanding of the programme material, as well as consistent, competent answers. Fluency in the material, correct justification of the decisions made.
<i>Good / 3</i>	A complete, detailed answer to the question(s) posed. Clear structure and logical sequence in the answer. Understanding of the programme material, its competent and consistent presentation, but minor inaccuracies in definitions are made.
<i>Satisfactory / 2</i>	An insufficiently detailed and consistent answer to the question(s) posed. Knowledge of only the basic material. Inaccuracies and difficulties with the formulation of definitions are made.
<i>Unsatisfactory / 0</i>	No answer has been given to the basic questions on the discipline..

3.5. Criteria and grading system of the class attendance

Student attendance is determined in percentage correlation

Points	Assessment criteria
20	attendance 75-100%
17	attendance 50-74%
14	Attendance is less than 50%

4. Criteria and grading system of the discipline results during the interim assessment

4.1. Criteria and grading system for the discipline results

For the disciplines that are graded upon examination, the interim assessment result is comprised of points gained during the formative assessment and after the examination.

Assessment materials include the list of questions and tasks for the examination:

Questions for examination on Pathophysiology

1. Pathophysiology as a theoretical and methodological basis of medicine. Subject and tasks of pathophysiology. Main features of pathophysiology as a scientific and educational discipline. The role of experiment in the development of pathophysiology and medicine.

2. Disease, definition, criteria of the disease. General principles of classification of diseases. Stages of disease development. Outcomes of the disease. Mechanisms of recovery.

3. Etiology. Definition. Classification. The role of causes and conditions in the occurrence, development and outcome of the disease.

4. Pathogenesis. Definition of the concept. Causal relationships in pathogenesis. The main link and “vicious circles” in the pathogenesis of diseases. Protective-adaptive reactions and compensatory processes.

5. The effect of ionizing radiation on the body. Acute radiation sickness, its stages. Pathogenesis. Main pathophysiological syndromes. Forms of acute radiation sickness.

6. Reactivity and resistance, characteristics of concepts. Types of reactivity and resistance. Individual reactivity. The role of gender, age, constitution, environmental factors in the formation of reactivity. The meaning of reactivity in pathology.

7. Primary immunodeficiencies. Causes of occurrence, mechanisms of development and manifestations. Secondary immunodeficiencies. Causes, mechanisms of development and clinical manifestations.

8. Allergy, definition. Allergens, classification. Types of allergic reactions. Sensitization. Stages of allergic reactions.

9. Immediate type hypersensitivity reactions (types I, II, III of allergic reactions). Characteristic. Stages and features of the flow.

10. Delayed hypersensitivity reactions (type IV allergic reactions). Characteristic. Stages and features of desensitization. Principles of desensitization.

11. Arterial hyperemia. Characteristics, types, causes, development mechanisms, manifestations, consequences. Venous hyperemia. Etiology, pathogenesis, manifestations, consequences.

12. Ischemia. Characteristics, types, causes, mechanisms of development. Changes in tissues and consequences of ischemia. Stasis. Kinds. Causes, development mechanisms, consequences.

13. Thrombosis. Causes, development mechanisms, manifestations, consequences. Embolism. Kinds. Causes, mechanisms of development. Consequences.

14. Inflammation. Definition. Etiology. Components of inflammation. Local and general signs of inflammation, their relationship, development mechanisms.

15. Alteration, its types and meaning. Changes in metabolism, physical and chemical properties of tissues and their structure at the site of inflammation. Mediators of inflammation. Types, their origin and effect on organs and tissues.

16. Exudation, development mechanisms and significance. Types of exudates. Pathogenesis of microcirculation disorders in inflammatory tissue. Emigration of leukocytes. Phagocytosis, its stages.

17. Proliferation, mechanisms of its formation and role in inflammation. Features of chronic inflammation. The importance of inflammation for the body.

18. Acute phase response. Systemic inflammatory response syndrome is the pathological basis of multiple organ failure syndrome.

19. Fever. Definition of the concept. Causes of fever. The meaning of fever for the body. Difference between fever and exogenous hyperthermia.

20. Stages of development of fever. Features of thermoregulation and metabolism in each stage of fever. Changes in metabolism and organ function during fever.

21. Hypothermia, causes and mechanisms of development, clinical manifestations. Hyperthermia, causes and mechanisms of development, clinical manifestations.

22. Causes and consequences of impaired intake, digestion and absorption of carbohydrates. Causes and pathogenesis of hypo- and hyperglycemia.

23. Etiology and pathogenesis of diabetes mellitus, its forms, clinical manifestations.

24. Diabetic comas, their types and manifestations. Mechanisms of development of early and late complications of diabetes mellitus.

25. Metabolic syndrome. Definition. Etiology. Mechanisms of development. Diagnostic criteria.

26. Disturbances in the intake, digestion and absorption of fats. Disorders of fat transport. Hyperlipidemia. Their types and meaning.

27. Obesity, causes. Primary and secondary obesity. Mechanisms of development. Pathophysiological significance of obesity.

28. Atherosclerosis. Causes, development mechanisms, role of endothelial dysfunction. Stages of atherogenesis. Consequences.

29. Impaired intake of proteins from food, disorders of digestion and absorption. Positive and negative nitrogen balance. Violation of protein synthesis and breakdown, development mechanisms, manifestations. Importance for the body.

30. Hyperhydration, its types. Causes of occurrence. Mechanisms of development, manifestations. Consequences. Hypohydration, its types. Causes of occurrence. Mechanisms of development, manifestations. Consequences.

31. Edema. Definition. Classification of edema. Mechanisms of renal and cardiac edema. Pathogenesis of inflammatory, toxic, allergic edema. Local and general disorders in the body with edema.

32. Tumors, definition. Differences between benign and malignant tumors. Biological properties of the tumor.

32. Carcinogens, their role in the occurrence of tumors. Carcinogenesis, the significance of oncogenes, the role of oncoproteins in carcinogenesis.

33. Interaction between tumor and organism. Metastasis. Tumor cachexia.

33. Paraneoplastic syndromes.

34. Coma. Characteristics of the concept, forms and mechanisms of development, clinical manifestations and significance for the body.

35. Shock. General characteristics. Stages and mechanisms of development. Clinical manifestations and significance for the body. Multiple organ failure syndrome.

36. Collapse. General characteristics. Types of collapse. Manifestations. Difference from shock. Importance for the body.

37. General causes and mechanisms of disorders of the nervous system.

38. Typical pathological processes in the nervous system. Braking deficiency. Denervation syndrome. Spinal shock. Deafferentation. Trophic disturbances.

34. Pain. Pain receptors. Pain mediators. Mechanism of pain. Types of pain (somatic, neuropathic). Phantom pain. Causalgia. The meaning of pain for the body.

39. Characteristics of the main causes and mechanisms of endocrine disorders.

40. Pathophysiology of the pituitary gland. Acromegaly, gigantism, dwarfism.

41. Diabetes insipidus. Mechanisms of their development.

35. Pathophysiology of the adrenal glands. Addison's disease, pheochromocytoma, Itsenko-Cushing syndrome. Mechanisms of their development.

36. Primary and secondary aldosteronism. Conn's disease. Mechanisms of development.

37. Pathophysiology of the thyroid gland. Hyperthyroidism. Diffuse toxic goiter. Hypothyroidism.

38. Cretinism, myxedema. Endemic goiter. Mechanisms of development.

39. Acute blood loss. Compensation mechanisms. Posthemorrhagic anemia (acute, chronic), development mechanisms, blood picture.

40. Anemia. Definition. Classification. Clinical manifestations of anemia. Acute posthemorrhagic anemia. Etiology, pathogenesis. Picture of blood.

41. Iron deficiency anemia. Etiology. Pathogenesis. Picture of blood. Clinical manifestations.

42. B12-folate deficiency anemia. Etiology, pathogenesis. Picture of blood. Clinical manifestations.

43. Hemolytic anemia. Classification. Etiology, pathogenesis. Picture of blood. Clinical manifestations.

44. Erythrocytosis. Definition. Etiology and pathogenesis. Primary and secondary (absolute and relative) erythrocytosis. Clinical manifestations.

45. Characteristics of leukopenia. Types, causes and mechanisms of their development. Agranulocytosis.

46. Leukocytosis. Kinds. Changes in the leukocyte formula and its diagnostic value.

47. Leukemia. Definition of the concept. Etiology and pathogenesis of leukemia. Principles of classification.

48. Differences from leukemoid reaction. The main disorders in the body in leukemia. Their mechanisms. Diagnostic principles.

49. Hemorrhagic diathesis. Causes, pathogenesis and leading manifestations of hemorrhagic syndrome. The role of endothelial dysfunction.

50. Etiology and pathogenesis of hypercoagulations. Disseminated intravascular coagulation syndrome.

51. Heart failure. Etiology. Kinds. Compensatory mechanisms. Myocardial hypertrophy. Stages of myocardial hypertrophy.

52. Violations of cardiac function and hemodynamics in heart failure. Pathogenesis of the main clinical symptoms (edema, shortness of breath, cyanosis).

53. Arterial hypertension. Kinds. Etiology and pathogenesis of hypertension. Clinical manifestations. Complications, consequences.

54. Symptomatic hypertension: renal, vascular, endocrine. Adrenal hypertension. Types and mechanisms of increased blood pressure. Renal hypertension. Types and mechanisms of increased blood pressure.

55. Respiratory failure. Definition of the concept. Pathogenesis of pulmonary ventilation disorders. Obstructive and restrictive respiratory failure. Broncho-obstructive syndrome.

56. Dysregulation of breathing. Dyspnea. Definition of the concept. Pathogenesis of various types of shortness of breath. Periodic breathing, types, etiology.

57. Pathogenesis of disturbances in perfusion, ventilation-perfusion relationships, diffusion in the lungs. Adult respiratory distress syndrome.

58. Hypoxia. Classification of hypoxic conditions. Etiology and pathogenesis of various types of hypoxia.

59. Pathological changes in organs and systems during hypoxia. Metabolism and organ function disorders during hypoxia. Adaptive reactions of the body during hypoxia. Emergency and long-term adaptation to hypoxia.

60. Main causes of indigestion. Violation of the secretory and motor functions of the stomach. Causes and mechanisms of development of gastric and duodenal ulcers.

61. Violation of the secretory and motor functions of the intestine. Disorders of cavity and parietal digestion.

62. Causes and mechanisms of violation of the exocrine function of the pancreas.

63. Disorder of bile formation and bile excretion. Jaundice (mechanical, parenchymal, hemolytic). Pathophysiological mechanisms.

67. Causes of liver dysfunction and mechanisms of disorder of carbohydrate, fat, protein metabolism and antitoxic function.

68. General causes and mechanisms of the occurrence and development of renal pathology. Impaired glomerular filtration. Impaired tubular reabsorption.

69. Urinary syndrome (proteinuria, hematuria, leukocyturia). Nephrotic syndrome.

70. Extrarenal symptoms and syndromes during kidney disorders (pathogenesis and significance of azotemia, anemia, arterial hypertension, edema).

71. Acute renal failure. Etiology. Pathogenesis. Stages. Renal dysfunction in acute renal failure.

72. Chronic renal failure. Etiology. Stages of chronic renal failure. Uremia. Metabolic disorders of the body with uremia.

Typical examination card variant

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
FEDERAL STATE AUTONOMOUS EDUCATIONAL
INSTITUTION OF HIGHER EDUCATION
“MURMANSK ARCTIC UNIVERSITY”
EXAMINATION CARD № 1

on the discipline “Pathophysiology”

Question 1. Pathogenesis. Definition of the concept. Causal relationships in pathogenesis. The main link and “vicious circles” in the pathogenesis of diseases. Protective-adaptive reactions and compensatory processes.

Question 2. Stages of development of fever. Features of thermoregulation and metabolism in each stage of fever. Changes in metabolism and organ function during fever

Question 3. Chronic renal failure. Etiology. Stages of chronic renal failure. Uremia. Metabolic disorders of the body with uremia.

The examination cards were reviewed and approved at the department meeting dated

« ____ » _____ 2024, record no. _____

Head of the Clinical Medicine Department _____ Krivenko O.G

Grade	Answer assessment criteria
<i>Excellent</i>	Student understands the material thoroughly; reproduces it fully, clearly and logically; applies theory to practice; has no inhibitions in answering an altered question. Uses specific terminology; demonstrates extensive knowledge in the subject; provides references to specialized resources, including online-resources, while answering the questions.
<i>Good</i>	Student understands the material thoroughly; reproduces it logically and to the point, without major errors in answering the question; uses specific terminology well; may experience some difficulties in answering clarifying questions on the subject; generally demonstrates extensive knowledge in the subject
<i>Satisfactory</i>	Student understands only basic material without details; makes mistakes and not fully correct wording; is poorly familiar with specific terminology; makes significant mistakes in answering; poorly uses special information resources.
<i>Unsatisfactory</i>	Student does not understand a major part of the material, makes significant mistakes, violations of the logical sequence in presenting the material, does not know special terminology, does not use special information resources. No answer to the posed question was given.

The grade, earned at the examination, is then converted into points (“5/excellent” – 20 points; “4/good” – 15 points; “3/satisfactory” – 10 points) and is added to the points, earned during the formative assessment.

Final grade	Total sum of points	Assessment criteria
<i>Excellent</i>	91 - 100	All milestones of the formative assessment have been completed at a high level. The exam is passed.
<i>Good</i>	81-90	All milestones of the formative assessment have been completed. The exam is passed.
<i>Satisfactory</i>	70- 80	The milestones of the formative assessment have been completed partially. The exam is passed.
<i>Unsatisfactory</i>	69 or less	The milestones of the formative have not been completed or the exam is not passed

5. Diagnostic tasks for the assessment of the educational results in the discipline (module) within the framework of internal and external independent assessment of the quality of education

Assessment materials contain tasks for assessing knowledge, skills and abilities that demonstrate the level of competence mastery and indicators of their mastery.

The set of tasks is designed so as to assess each competence in written form.

The set of tasks includes: test, case tasks, situational tasks,

Set of tasks for diagnostics

OIK-5 Can analyze morphofunctional and physiological indicators as well as pathological processes in human body to achieve professional goals	
1	<p>Test: Select all correct answer options.</p> <p><u>1. The consequences of insufficient absorption of lipids in the intestine are</u></p> <p>1) development of hypovitaminosis A, D, E, K 2) steatorrhea 3) impaired synthesis of prostaglandins and leukotrienes 4) weight loss</p> <p><u>2. Increased lipolysis occurs when</u></p> <p>1) gigantism 2) hyperthyroidism 3) hyperinsulinism 4) hypercortisolism</p> <p><u>3. Promotes the development of atherosclerosis</u></p> <p>1) Decrease in the content of VLDL and cholesterol in the blood plasma 2) Increase in LDL content and decrease in concentration HDL 3) Increase in HDL content and decrease in concentration LDL 4) Increase in HDL and LDL content</p> <p><u>4. Impaired digestion and absorption of fats in the intestines contribute</u></p> <p>1) pancreatic lipase deficiency 2) decreased activity of lipoprotein lipase 3) acholia 4) hypercholia</p> <p><u>5. Typical pathological processes include:</u></p> <p>1) tumor growth 2) fever 3) furunculosis 4) hypoxia</p>

	<p><u>6. Factors contributing to the development of peptic ulcer include:</u></p> <ol style="list-style-type: none"> 1) increased formation of mucus in the stomach 2) increased secretion of bicarbonates 3) increased formation of prostaglandins E1 and E2 4) reduced ability of the mucous membrane to regenerate <p><u>7. Compensatory reactions in response to hypoxemia and hypoxia are:</u></p> <ol style="list-style-type: none"> 1) tachycardia 2) bradycardia 3) deposition of red blood cells 4) release of red blood cells from the depot <p><u>8. Mechanism of anemia in chronic renal failure:</u></p> <ol style="list-style-type: none"> 1) violation of the excretion of metabolic products 2) intoxication of the body 3) lack of erythropoietin 4) hemolysis of red blood cells in the renal tubules
2	<p><i>Cases</i></p>
	<p>Case 1. Patient K., 26 years old, consulted a doctor with complaints of weakness, shortness of breath, cough with sputum, low-grade fever (37.3°C). Tuberculosis bacilli were found in the patient's sputum. From the anamnesis it turned out that sister K., who lives in another city, also has tuberculosis. It was also established that the patient performed hard work associated with cooling and irregular nutrition.</p> <p>How can one classify the factors that played a role in the etiology of the development of tuberculosis in a given patient?</p> <p>Answer: First of all, the main etiological factor in the development of tuberculosis is identified - Koch's bacillus. The presence of a sick sister in a sick person indicates the presence of a hereditary predisposition, i.e. genetic factors in the development of the disease (failure of the immune system). These factors are classified as predisposing (internal) factors in the development of the disease. And finally, irregular nutrition, which can lead to protein-calorie deficiency and hypovitaminosis, hypothermia, and heavy physical work are combined into a group of contributing (external) factors that facilitate the development of the disease in a given person.</p> <p>Case 2.</p> <p>When studying individual reactivity in patients using the Aschner test, it turned out that in one of them, when pressing on the eyeballs, the pulse slowed down, while in the other patient the reaction was weakly expressed.</p> <p>How can you evaluate the result? What type of reactivity are we talking about?</p> <p>Answer: We are talking about individual physiological nonspecific reactivity, which is based on different responses of the autonomic nervous system to irritation.</p>