

Документ подписан простой электронной подписью

Информация о владельце:

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Дата подписания: 20.10.2026 10:11:25

Уникальный программный ключ:

bbc0243907972fc80f279c67a1b4501106151a7e

MINISTRY OF SCIENCE AND HIGHER EDUCATION

RUSSIAN FEDERATION

Federal State Autonomous Educational Institution of Higher Education

NORTH-CAUCASUS FEDERAL UNIVERSITY

APPROVED

Assoc. Prof. Kubanov S.I.

PhD in Medical Sciences

Dean

Faculty of Medicine and Biology

ASSESSMENT TOOLS FUND FOR THE DISCIPLINE

«Pathophysiology, Clinical Pathophysiology»

- Specialty: 31.05.01 General Medicine
- Mode of training: Full-time
- Year of commencement of studies: 2026
- Delivered in Semester, 5-6

Introduction

1. Intended for carrying out current control of academic performance progress and intermediate attestation in the discipline of «Pathophysiology, Clinical Pathophysiology» for students of the specialty (majoring in) 31.05.01 General Medicine.
2. The ATF is an appendix to the program of the discipline «Pathophysiology, Clinical Pathophysiology»
3. Developer: Bicheva G.V., Associate Professor of the Department of Physiology and Pathology
4. Expert examination of the ATF has been completed.
Expert group:
Chairperson: T.N. Pakhomova, Chairman of the Educational and Methodological Commission of the Faculty of Medicine and Biology
Commission members:
 - Butova O.A. – Head of the Department of Physiology and Pathology, Professor
 - Belyaev N.G. – Professor of the Department of Physiology and Pathology

Employer organization representative: Vilensky I.L., Chief Physician of Independent CDL, LLC

Expert conclusion – the ATF allows evaluating the level of competency levels and is recommended to be employed in the educational process.

5. The validity period for the ATF shall be determined by the period of implementation of the educational program.

1. Description of Evaluation Criteria at Various Stages of Their Formation, Description of Evaluation Scales

Levels of competency(ies), indicator(s)	Descriptors			
	Minimum level not reached (Unsatisfactory) – 2 points	Minimum level (Satisfactory) – 3 points	Intermediate level (Good) – 4 points	High level (Excellent) – 5 points
Competency: PC-3 Capable of determining a patient's main pathological states, symptoms, disease syndromes, and nosological forms in accordance with the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)				
Learning outcomes for the discipline (module): Acquisition of special medical skills and their application in practical healthcare. Indicator: ID-1 PC-3 Is capable of building an algorithm and selecting criteria for determining the main pathological states, syndromes, and diseases in patients of various profiles in accordance with the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)	Not capable of building an algorithm and selecting criteria for identifying various profiles in the patient	Capable of building an algorithm and selecting criteria for identifying various profiles in the patient	Capable of building an algorithm and selecting criteria for identifying the patient's various profiles of main pathological conditions, syndromes, diseases	Capable of building an algorithm and selecting criteria for identifying the patient's various profiles of main pathological conditions, syndromes, diseases following the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)
Learning outcomes for the discipline (module): Acquisition of special medical skills and their	Does not identify main pathological symptoms	Identifies main pathological symptoms	Identifies main pathological symptoms and syndromes, defines a clinical diagnosis	Identifies main pathological symptoms and syndromes, defines a clinical diagnosis subject to ICD-10

application in practical healthcare. Indicator: ID-2 PC-3 Identifies main pathological symptoms and syndromes, formulates a clinical diagnosis in accordance with ICD-10				
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The evaluation of the competency formation level in the discipline is carried out on the basis of the Regulations on conducting current control of academic progress and intermediate attestation of students in higher education educational programs – Bachelor’s programs, Specialist’s programs, Master’s programs – at the Federal State Autonomous Educational Institution of Higher Education NORTH-CAUCASUS FEDERAL UNIVERSITY in its current edition.

ASSESSMENT TOOLS FOR CHECKING THE LEVEL OF COMPETENCY DEVELOPMENT

Task Number	Correct Answer	Content of the Question	Competency
		Semester, 5	
1.	b	The Russian founder of pathophysiology as an experimental science is: a) I.M. Sechenov b) V.V. Pashutin c) I.P. Pavlov d) N.I. Pirogov	PC-3
2.	a b c d	Typical pathological processes include: a) arterial hypertension b) inflammation c) fever d) hypoxia e) pneumonia	PC-3
3.	A typical pathological process.	Inflammation is...	PC-3
4.	The study and classification of diseases	Nosology is..	PC-3
5.	c	The presence of specific signs of a disease is characteristic of: a) the prodromal period b) the incubation period c) the peak (height) of the disease d) the outcome of the disease	PC-3

6.	c	For a disease to occur: a) a complex of conditions is required, which does not always include the cause b) hereditary predisposition is mandatory c) a combination of the cause and conditions is necessary	PC-3
7.	b c a d	What is the sequence of circulatory changes in the focus of inflammation? a) venous hyperemia, b) ischemia, c) arterial hyperemia, d) stasis	PC-3
8.	d	The initial link in pathogenesis is: a) secondary damage b) exacerbation of the disease c) transition to a chronic form d) primary damage e) formation of a vicious circle	PC-3
9.	a	Damage to mitochondria is primarily the cause of: a) impairment of energy production processes b) impairment of the mechanisms for implementing the cell's genetic program c) impairment of transcription d) impairment of translation	PC-3
10.	c e	Damage to cell membranes is the cause of: a) impairment of energy production b) activation of apoptosis c) imbalance of ions and water in the cell d) impairment of the mechanisms for implementing the cell's genetic program e) impairment of signal transduction	PC-3
11.	a	Impaired differentiation of tumor cells is: a) anaplasia b) hyperplasia c) metaplasia d) dysplasia e) hypertrophy	PC-3
12.	c d	Damage to DNA is the cause of impairment of: a) cell swelling b) reception c) the cell's genetic program d) the implementation of the genetic program	PC-3
13.	a c	Clinical signs of arterial hyperemia are: a) redness b) cyanosis c) increased temperature of the skin d) decreased temperature of the skin	PC-3

14.	a e	Stasis can be caused by: a) obstruction of venous outflow b) increased inflow c) decreased inflow d) increased outflow from the organ e) increased blood viscosity	PC-3
15.	a c	Features of microcirculation in the area of ischemia are: a) slowing of blood flow b) increased blood flow c) decrease in capillary diameter d) increase in capillary diameter	PC-3
Semester, 6			
16.	b	How does the hematocrit value change in oligocythemmic normovolemia? a) increased b) decreased c) within normal limits	PC-3
17.	c	What is the hematocrit value in simple normovolemia? a) increased b) decreased c) within normal limits	PC-3
18.	a	How does the hematocrit value change in oligocythemmic hypovolemia? · a) decreased · b) increased · c) within normal limits	PC-3
19.	hypercapnia	An increase in PaCO ₂ above 40 mm Hg is:	PC-3
20.	a	How does the hematocrit value change in polycythemic hypovolemia? · a) increased · b) decreased · c) within normal limits	PC-3
21.	a	Poikilocytosis is a change in: · a) erythrocyte shape · b) erythrocyte size · c) hemoglobin content in erythrocytes	PC-3
22.	b	Which anemia is most characterized by an increased color (MCH) index? · a) acute posthemorrhagic anemia · b) vitamin B ₁₂ -deficiency anemia · c) chronic posthemorrhagic anemia	PC-3
23.	a	Which anemia contains abnormal hemoglobin in erythrocytes? · a) thalassemia · b) iron-deficiency anemia · c) folic acid-deficiency anemia	PC-3
24.	c	Impaired formation of which compound leads to microspherocytosis?	PC-3

		· a) hemoglobin A · b) 2,3-diphosphoglyceric acid · c) spectrin	
25.	a	Which anemia occurs as a result of exposure to ionizing radiation? · a) aplastic anemia · b) iron-deficiency anemia · c) hemolytic anemia	PC-3
26.	c	Which anemia occurs due to impaired synthesis of Castle's intrinsic factor in the gastric parietal cells? · a) folic acid-deficiency anemia · b) iron-deficiency anemia · c) vitamin B₁₂-deficiency anemia	PC-3
27.	b	Leukocyte counting is performed: · a) in a blood smear · b) in a Goryaev counting chamber · c) in a special test tube · d) by photocolorimetry	PC-3
28.	c	Which type of leukocytosis most often occurs in acute inflammatory processes? · a) eosinophilic · b) lymphocytic · c) neutrophilic	PC-3
29.	a	Which type of leukocytosis most often occurs in type I allergic reactions? · a) eosinophilic · b) neutrophilic · c) lymphocytic	PC-3
30.	c	Metaplasia in leukemias manifests as: · a) inability of leukocytes to undergo proper differentiation · b) displacement of healthy hematopoietic lineages from the bone marrow by tumor cells · c) development of foci of pathological hematopoiesis in sites not normally involved in this process	PC-3
31.	b	Which cells are the pathomorphological substrate of the tumor in chronic monocytic leukemia? · a) granulocytes · b) monocytes · c) megakaryocytes	PC-3

2. Description of the Evaluation Scale

Within the framework of the rating system, students' academic progress in each discipline is evaluated during current control and intermediate attestation. The rating system for assessing students' knowledge is based on the use of a combination of control activities to check the covered material (checkpoints), optimally located throughout the entire time interval of studying the discipline. The principles of the rating system for assessing students' knowledge are based on the

requirements described in the Regulations on the organization of the educational process based on the rating system for assessing students' knowledge at NCFU.

3. Criteria for Evaluating Competencies

The grade **Excellent** shall be awarded to a student if the theoretical content of the course has been mastered completely, without gaps; the material is presented exhaustively, consistently, clearly, and logically; the student freely copes with tasks, questions, and other types of knowledge application; uses additional material in the answer; all tasks provided for by the program are completed, and the quality of their execution is evaluated by a number of points close to the maximum; analyzes the obtained results; demonstrates independence when performing tasks.

The grade **Good** is to be awarded to a student if the theoretical content of the course is mastered completely, the necessary practical competencies are mainly formed, all educational tasks provided for by the training program are completed, and the quality of their execution is sufficiently high. The student firmly knows the material, presents it competently and strictly on the merits of the matter, without allowing significant inaccuracies in answering the question.

The grade **Satisfactory** is awarded to a student in case the theoretical content of the course has been mastered in part only, but the gaps are not of a significant nature, most of the tasks provided for by the program are completed, but contain errors, the student allows inaccuracies and insufficiently correct wording when answering the question, and violations of logical sequence are observed in the presentation of the program material.

The grade **Unsatisfactory** is awarded to a student if they do not know a significant part of the program material, allow significant errors, perform practical works with great difficulty and uncertainty, the necessary practical competencies are not formed, most of the educational tasks provided for by the training program are not completed, and the quality of their execution is evaluated by a number of points close to the minimum.