

Документ подписан простой электронной подписью

Информация о владельце:

ФИО: Кубанов Сергей Исмаилович

Должность: и.о. декана медико-биологического факультета

Дата подписания: 20.10.2026 10:11:25

Уникальный программный ключ:

bbc0243907972fc80f279c67afb4501106151a7d

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

Pharmacology

Name of the discipline (module)

- 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 Pharmacology for students of the specialty (majoting in) 31.05.01 General Medicine.
2. The ATF is an appendix to the program of the discipline Pharmacology
3. Developer Anenko D.S. Associate Professor of the Department of Pharmacology
4. Expert examination of the ATF has been completed.

Expert group:

Chairperson: Pakhomova T.A. – Chairman of the Faculty of Medicine and Biology

Committee members:

Glizhova T.N. – Head of the Department of Pharmaceutics and Pharmacognosy;

Manvelyan E.A. – Professor of the Department of Pharmacology.

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 formation of competence(s), indicator(s)	Descriptors			
	Minimum level not achieved (Unsatisfactory) 2 points	Minimum level (Satisfactory) 3 points	Intermediate level (Good) 4 points	High level (Excellent) 5 points
Competency PC-5 Ready for the management and treatment of patients with various nosological forms in outpatient conditions and day-care hospital conditions.				
Learning outcomes for the discipline (module): <i>Indicator:</i> AI-1 PC-5: Prescribes medicinal drugs, medical devices, and medical nutrition, taking into account the diagnosis, age, and clinical picture of the disease in accordance with current medical care procedures for rendering medical care, clinical recommendations (treatment protocols) on issues of medical care provision, taking into account healthcare standards.	With great difficulty, prescribes medications, medical devices, and therapeutic nutrition, taking into account the diagnosis, age, and clinical picture of the disease in accordance with current medical care procedures, clinical guidelines, and (treatment protocols) for medical care, taking into account medical care standards.	Makes mistakes when prescribing medicines, medical devices, and therapeutic nutrition, taking into account the diagnosis, age, and clinical picture of the disease in accordance with current medical care procedures, clinical guidelines, and (treatment protocols) for medical care, taking into account medical care standards.	Prescribes medications, medical devices, and therapeutic nutrition, taking into account the diagnosis, age, and clinical picture of the disease in accordance with current medical care procedures, clinical guidelines, and (treatment protocols) for medical care, taking into account medical care standards.	
AI-2 PC-5: Evaluates the efficacy and safety of the use of medicinal drugs, medical devices, medical nutrition,	Poorly evaluates the effectiveness and safety of the use of medicines, medical devices and therapeutic nutrition, non- drug treatment	inaccurately and inaccurately evaluates the effectiveness and safety of the use of medicines, medical devices and therapeutic	highly evaluates the effectiveness and safety of the use of medicines, medical devices and therapeutic nutrition, non-drug treatment	perfectly evaluates the effectiveness and safety of the use of medicinal products, medical devices and therapeutic nutrition, non-

and non-medical treatment.		nutrition, non-medical treatment		medicinal treatment.
AI-3 PC-5: Plans and monitors the management of patients with various nosological forms in outpatient conditions and day-care hospital conditions.	With difficulty to plan and control the management of patients with various nosological forms in outpatient and day hospital settings	With difficulty in planning and controlling the management of patients with various nosological forms in outpatient and day hospital settings	confidently plans and controls the management of patients with various nosological forms in outpatient and day hospital settings	at the highest level, he plans and controls the management of patients with various nosological forms in outpatient and day hospital settings

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 5-6			
Testing tasks			
Multiple choice (single correct answer)			
1	C	Which substances are better absorbed by passive diffusion? A) hydrophilic substances B) polar compounds C) lipid-soluble substances D) substances in an ionised state	PC-5
2	C	Which of the following are enteral routes of drug administration? (choose the most	PC-5

		complete option) A) oral administration B) sublingual administration C) rectal administration D) subarachnoid route E) administration via a gastric tube	
3	B	As a rule, as a result of biotransformation a drug becomes: A) more lipophilic B) more hydrophilic C) more widely distributed in the organism D) more tightly bound to membranes	PC-5
4	C	Induction of hepatic microsomal enzymes typically leads to: A) the need to reduce the dose of some drugs B) the need to increase the dose of some drugs C) treatment of hyperbilirubinaemia D) development of drug accumulation (cumulative effect)	PC-5
5	C	Which of the following is a principle of homeopathy? A) treatment by "like with like" B) treatment with maximum doses C) treatment with minimal doses D) testing medicines on animals	PC-5

6	C	To calculate the volume of distribution of a drug, it is necessary to know: A) the concentration of the drug in urine B) the daily dose of the drug C) the plasma concentration of the drug and the administered dose D) glomerular filtration rate	PC-5
Multiple choice (multiple correct answers)			
7	A,C,D,E	Indicate the features associated with “habit formation” (addiction/tolerance) upon repeated administration of a drug (select all that apply): A) irresistible craving to take the substance B) increased effect of the substance upon repeated administration C) decreased effect of the substance upon repeated administration D) phenomenon of tachyphylaxis E) state characterised by the term «tolerance»	PC-5
8	A,C	Which processes contribute to drug accumulation (select all that apply)? A) decreased glomerular filtration B) increased renal excretion C) decreased hepatic biotransformation D) activation (induction) of hepatic microsomal enzymes	PC-5

9	A,B,D,E	If a drug is administered intravenously, it may exert the following types of effects on the heart (select all that apply): A) local B) indirect C) carcinogenic D) direct E) reflex	PC-5
10	B,C	Which of the following are inducers of hepatic cytochrome P450 enzymes? (select all that apply) A) acetylsalicylic acid (aspirin) B) phenobarbital C) rifampicin D) chloramphenicol E) immunosuppressants	PC-5
11	A,B	Biotransformation usually results in the drug becoming (select all that apply): A) more hydrophilic B) more rapidly excreted by the kidneys C) more tightly bound to membranes D) more widely distributed in the organism	PC-5
12	A,C	Which of the following statements concerning homeopathy are correct? (select all that apply) A) treatment by "like with like" B) treatment with maximum doses C) treatment with minimal doses D) testing medicines on animals	PC-5
True / False (mark T for true, F for false)			
13	T	Tachyphylaxis means the rapid diminution	PC-5

		of a drug effect upon repeated administration. (T/F)	
14	T	Bioavailability is the fraction of an extravascular dose that reaches the systemic circulation. (T/F)	PC-5
15	T	Dysbacteriosis (dysbiosis) developing after administration of certain antimicrobials is a recognised adverse effect. (T/F)	PC-5
16	T	Mutagenic action is the effect of a drug on germ cells resulting in alteration of the genetic apparatus. (T/F)	PC-5
17	F	Induction of hepatic microsomal enzymes usually requires a reduction in the doses of some drugs. (T/F)	PC-5
18	F	The subarachnoid route is an enteral route of administration. (T/F)	PC-5
Matching Match the term (number) with the definition (letter):			
19	A	Bioavailability A) The fraction of an extravascular dose that reaches the systemic circulation B) Rapid diminution of effect upon repeated administration C) Accumulation of a substance in the body on repeated administration D) A substance that increases the activity of hepatic enzymes and	PC-5

		accelerates metabolism E) A situation in which the combined effect exceeds the arithmetic sum of individual effects F) An effect on germ cells that alters the genetic apparatus	
20	B	Tachyphylaxis A) The fraction of an extravascular dose that reaches the systemic circulation B) Rapid diminution of effect upon repeated administration C) Accumulation of a substance in the body on repeated administration D) A substance that increases the activity of hepatic enzymes and accelerates metabolism E) A situation in which the combined effect exceeds the arithmetic sum of individual effects F) An effect on germ cells that alters the genetic apparatus	PC-5
21	C	Accumulation (cumulation) A) The fraction of an extravascular dose that reaches the systemic circulation B) Rapid diminution of effect upon repeated administration C)	PC-5

		Accumulation of a substance in the body on repeated administration D) A substance that increases the activity of hepatic enzymes and accelerates metabolism E) A situation in which the combined effect exceeds the arithmetic sum of individual effects F) An effect on germ cells that alters the genetic apparatus	
22	D	Inducer of microsomal enzymes A) The fraction of an extravascular dose that reaches the systemic circulation B) Rapid diminution of effect upon repeated administration C) Accumulation of a substance in the body on repeated administration D) A substance that increases the activity of hepatic enzymes and accelerates metabolism E) A situation in which the combined effect exceeds the arithmetic sum of individual effects F) An effect on germ cells that alters the genetic apparatus	PC-5
23	E	Potentiation	PC-5

		A) The fraction of an extravascular dose that reaches the systemic circulation B) Rapid diminution of effect upon repeated administration C) Accumulation of a substance in the body on repeated administration D) A substance that increases the activity of hepatic enzymes and accelerates metabolism E) A situation in which the combined effect exceeds the arithmetic sum of individual effects F) An effect on germ cells that alters the genetic apparatus	
24	F	Mutagenic action A) The fraction of an extravascular dose that reaches the systemic circulation B) Rapid diminution of effect upon repeated administration C) Accumulation of a substance in the body on repeated administration D) A substance that increases the activity of hepatic enzymes and accelerates metabolism E) A situation in which the combined effect exceeds the arithmetic	PC-5

		sum of individual effects F) An effect on germ cells that alters the genetic apparatus	
SECTION 5. Short answer (one–two sentences)			
25	Bioavailability — the fraction of an administered extravascular dose that reaches the systemic circulation (expressed as a fraction or percentage).	Provide a concise definition of the term “bioavailability.”	PC-5
26	Advanced age; hypokalaemia (the file also lists thyrotoxicosis, congestive heart failure and cor pulmonale).	Name two conditions listed in the file that increase sensitivity to cardiac glycosides.	PC-5
27	Potentiation — a situation in which the combined effect of drugs exceeds the arithmetic sum of their individual effects.	What is potentiation in pharmacology? (briefly)	PC-5
28	Phenobarbital; rifampicin.	Name two inducers of cytochrome P450 mentioned in the document.	PC-5
29	Oral, sublingual, rectal, via gastric tube.	List the enteral routes of drug administration given in the file.	PC-5
30	The substance becomes more hydrophilic and is more rapidly excreted by the kidneys.	Give one example of an effect of biotransformation described in the tests.	PC-5
Multiple Choice (single best answer)			
31	C	Which of the following is a principal effect of atropine at therapeutic doses? A) Local irritant action B) Muscle-relaxant effect C) Ability to suppress secretion of the digestive glands D) Diuretic effect	PC-5
32	B	For which condition is the use of anticholinesterase agents indicated? (choose the most	PC-5

		appropriate answer) A) Glaucoma B) Intestinal atony C) Peptic ulcer disease D) Hypertension	
33	D	Which effect is observed after ocular instillation of atropine? A) Reduction of intraocular pressure B) Impairment of aqueous humour outflow C) Pupil constriction (miosis) D) Paralysis of accommodation (cycloplegia)	PC-5
34	C	Which of the following is classified as an adverse effect of drugs? (select the most appropriate among the first options) A) Pharmacological primary action B) Etiotropic action C) Allergic reaction (Additional types referenced in the source include teratogenic, embryotoxic and mutagenic effects.)	PC-5
35	B	Which of the following drugs is indicated for reduction of intraocular pressure in glaucoma? A) Atropine B) Pilocarpine C) Platyphyllin D) Diethoxime	PC-5

36	C	Which of the following is a risk of muscle-relaxant overdose? A) Raised arterial pressure B) Antagonism of atropine C) Paralysis of the respiratory muscles D) Increased gastrointestinal motility	PC-5
Multiple Choice (multiple correct answers)			
37	A,D	Indicate the effects of atropine referred to in the document (select all that apply): A) Suppression of digestive gland secretion B) Diuretic effect C) Relief of bronchospasm D) Muscle-relaxant effect	PC-5
38	A,B	Agents that can be used to reduce intraocular pressure include: (select all that apply) A) Pilocarpine B) Physostigmine C) Atropine D) Platyphyllin	PC-5
39	A,D	Which statements about M-cholinergic antagonists are correct? (select all that apply) A) Reduce intraocular pressure B) Block cholinoreceptors of skeletal muscle C) Are used in the management of bronchial asthma D) Are contraindicated in glaucoma	PC-5
40	A,B,D	Which of the following are adverse	PC-5

		effects of ganglion-blocking agents? (select all that apply) A) Dryness of the oral mucosa B) Orthostatic collapse C) Bronchospasm D) Intestinal atony	
41	A,B	Which agents are contraindicated or problematic in bronchial asthma? (select all that apply) A) Neostigmine B) Carbachol C) Scopolamine D) Hexamethonium	PC-5
42	B,C	Which of the following are effects of acetylcholine? (select all that apply) A) Bronchodilation B) Slowing of heart rate (bradycardia) C) Bronchoconstriction D) Pupil dilation (mydriasis)	PC-5
True / False (mark T = true or F = false)			
43	T	M-cholinergic antagonists are contraindicated in glaucoma. (T/F)	PC-5
44	T	Neostigmine and armin inhibit acetylcholinesterase. (T/F)	PC-5
45	T	Ganglion-blocking agents reduce arterial and venous blood pressure. (T/F)	PC-5
46	T	Ocular instillation of pilocarpine produces spasm of accommodation. (T/F)	PC-5
47	F	Overdose of muscle-relaxant agents does not	PC-5

		threaten respiration. (T/F)	
48	T	Aceklydin (Aceklydin) stimulates gastrointestinal motility. (T/F)	PC-5
Matching Match the drug/term number (column A) with the appropriate definition/effect (column B).			
49	a	Atropine B — Definitions/effects: a) Causes suppression of digestive gland secretion b) Produces pupil constriction and spasm of accommodation c) Inhibits acetylcholinesterase d) Reduce arterial and venous blood pressure e) May cause paralysis of respiratory muscles in overdose f) Stimulates gastrointestinal motility	PC-5
50	b	Pilocarpine B — Definitions/effects: a) Causes suppression of digestive gland secretion b) Produces pupil constriction and spasm of accommodation c) Inhibits	PC-5

		acetylcholinesterase d) Reduce arterial and venous blood pressure e) May cause paralysis of respiratory muscles in overdose f) Stimulates gastrointestinal motility	
51	c	Neostigmine B — Definitions/effects: a) Causes suppression of digestive gland secretion b) Produces pupil constriction and spasm of accommodation c) Inhibits acetylcholinesterase d) Reduce arterial and venous blood pressure e) May cause paralysis of respiratory muscles in overdose f) Stimulates gastrointestinal motility	PC-5
52	d	Ganglion-blocking agents B — Definitions/effects: a) Causes suppression of digestive gland secretion b) Produces pupil constriction and spasm of accommodation c) Inhibits acetylcholinesterase d) Reduce arterial and venous blood pressure e) May cause paralysis of	PC-5

		respiratory muscles in overdose f) Stimulates gastrointestinal motility	
53	e	Muscle-relaxants B — Definitions/effects: a) Causes suppression of digestive gland secretion b) Produces pupil constriction and spasm of accommodation c) Inhibits acetylcholinesterase d) Reduce arterial and venous blood pressure e) May cause paralysis of respiratory muscles in overdose f) Stimulates gastrointestinal motility	PC-5
54	f	Aceklydin B — Definitions/effects: a) Causes suppression of digestive gland secretion b) Produces pupil constriction and spasm of accommodation c) Inhibits acetylcholinesterase d) Reduce arterial and venous blood pressure e) May cause paralysis of respiratory muscles in overdose f) Stimulates gastrointestinal motility	PC-5
Short Answer (one–two sentences)			

55	Intestinal atony; myasthenia gravis.	Name two indications for anticholinesterase agents mentioned in the document.	PC-5
56	Dryness of the oral mucosa; orthostatic collapse (also intestinal atony, bronchospasm).	List two adverse effects of ganglion-blocking agents.	PC-5
57	Bronchoconstriction; slowing of heart rate (bradycardia).	State two physiological actions of acetylcholine cited in the tests.	PC-5
58	Physostigmine and distigmine are mentioned as synergists/anticholinesterase-type agents.	Which agents are listed as synergists with pilocarpine in the document? (briefly)	PC-5
59	Neostigmine is contraindicated in bronchial asthma because it may precipitate bronchospasm.	Give one contraindication for the use of neostigmine in bronchial asthma.	PC-5
60	The primary danger is paralysis of the respiratory muscles and respiratory failure, which may require resuscitative measures.	What is the primary danger of muscle-relaxant overdose? (one–two sentences)	PC-5

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.