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Информация о владельце:

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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

Clinical 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 7

Introduction

1. Intended for carrying out current control of academic performance progress and intermediate attestation in the discipline of Clinical Pharmacology for students of the specialty (majoring in) 31.05.01 General Medicine.
2. The ATF is an appendix to the program of the discipline Clinical Pharmacology
3. Developer Manvelyan E.A. – 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;

Anenko D.S. Associate 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.

3. 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 GPC-3. Capable of countering the use of doping in sports and fighting against it.				
Learning outcomes for the discipline (module): <i>Indicator:</i> AI-1 GPC-3. Demonstrates the ability to counter the use of doping and fight against it.	demonstrates with great difficulty the ability to counteract and combat the use of doping	weakly, with errors, demonstrates the ability to counteract and combat the use of doping	demonstrates the ability to counteract and combat the use of doping	confidently, at the highest level demonstrates the ability to counteract and combat the use of doping
AI-2 GPC-3. Uses the basic legal acts on countering the use of doping in sports.	weakly uses the basic legal acts on countering the use of doping in sports	inaccurately and erroneously uses the main legal acts on combating the use of doping in sports	makes good use of the main legal acts on countering the use of doping in sports	makes excellent use of the main legal acts on countering the use of doping in sports
GPC-7. Capable of prescribing treatment and monitoring its effectiveness and safety.				
AI-1 GPC-7. Applies knowledge of medicinal drugs to prescribe treatment.	it is difficult to apply knowledge about medicines to prescribe treatment	has difficulty applying knowledge about medications to prescribe treatment	confidently applies knowledge about medicines to prescribe treatment	applies knowledge about medicines at the highest level to prescribe treatment
AI-2 GPC-7. Capable of monitoring the effectiveness and safety of the prescribed treatment.	can generally monitor the effectiveness and safety of the prescribed treatment.	uncertainly, with some errors, it can monitor the effectiveness and safety of the prescribed treatment.	can confidently monitor the effectiveness and safety of the prescribed treatment.	can confidently and successfully carry out efficiency and safety control

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 7			
Testing tasks			
Multiple choice (single correct answer)			
1	A	In renal pathology, which pharmacokinetic change is commonly observed? A) Impaired renal excretion B) Decreased plasma protein binding C) Increased hepatic metabolism D) Reduced bioavailability	GPC-3 GPC-7
2	B	Interaction with which of the following agents may lead to increased blood concentrations of digoxin? A) Phosphalugel B) Quinidine C) Pantoprazole D) Sodium bicarbonate	GPC-3 GPC-7
3	A	Which drug is described in the tests as producing analgesic and hypnotic effects? A) Promedol (Trimeperidine) B) Paracetamol (acetaminophen) C) Nitroglycerin D) Loperamide	GPC-3 GPC-7
4	D	Which adverse effect is characteristic of paracetamol in toxic doses? A) Euphoria B) Allergy C) Methemoglobinaemia D) Hepatic injury	GPC-3 GPC-7
5	B	Which of the following	GPC-3 GPC-7

		H1-histamine receptor antagonists is considered long-acting? A) Diphenhydramine B) Loratadine (Claritin) C) Fencarol D) Pipolfen	
6	C	Which of the following agents neutralises hydrochloric acid? A) Famotidine B) Pantoprazole C) Sodium bicarbonate D) Atropine sulfate	GPC-3 GPC-7
Multiple choice (multiple correct answers)			
7	A,B,D	Which pharmacokinetic alterations may occur in renal disease? (select all that apply) A) Impaired renal excretion B) Increased plasma concentrations of drugs C) Reduced bioavailability D) Prolongation of elimination half-life (T _{1/2})	GPC-3 GPC-7
8	A,B,C	With which agents listed is digoxin blood concentration reported to increase? (select all that apply) A) Quinidine B) Verapamil C) Amiodarone D) Phosphalugel	GPC-3 GPC-7
9	A,C	Therapeutic drug monitoring is required for which of the following groups? (select all that apply) A) Anticonvulsants B) β 2-sympathomimetics C) Methylxanthines D)	GPC-3 GPC-7

		Glucocorticoids	
10	A,B,D	Adverse effects of paracetamol include: (select all that apply) A) Allergy B) Methemoglobinaemia C) Renal injury (coagulation necrosis) D) Hepatic injury	GPC-3 GPC-7
11	A,B	Which agents belong to the class of long-acting H1-antagonists? (select all that apply) A) Loratadine B) Astemizole C) Diphenhydramine D) Pipolfen	GPC-3 GPC-7
12	A,B,D	Which of the following are bronchodilators (β 2-adrenoceptor agonists)? (select all that apply) A) Formoterol B) Terbutaline C) Ipratropium bromide D) Indacaterol	GPC-3 GPC-7
True/False (mark T for true, F for false)			
13	T	With inhalational administration of β 2-adrenoceptor agonists, the onset of effect usually occurs within 1–2 minutes. (T/F)	GPC-3 GPC-7
14	F	Hepatotoxicity is characteristic only of paracetamol and not of isoniazid. (T/F)	GPC-3 GPC-7
15	T	Lactulose is used as a laxative in hepatic encephalopathy. (T/F)	GPC-3 GPC-7
16	T	Loperamide is the drug of choice for acute non-infectious diarrhoea. (T/F)	GPC-3 GPC-7

17	F	Simethicone increases the formation of intestinal gas. (T/F)	GPC-3 GPC-7
18	T	Metformin can cause lactic acidosis as an adverse effect. (T/F)	GPC-3 GPC-7
Matching Column A – Drugs (numbers) Column B – Definitions (letters)			
19	e	1) Nitroglycerin Column B – Definitions (letters) a) Drug of choice for acute non-infectious diarrhoea b) Laxative used in hepatic encephalopathy c) Long-acting bronchodilator (β 2-agonist) d) Hepatoprotective agent with cholelitholytic activity e) A nitrate used to terminate anginal attacks f) Hypoglycaemic agent whose adverse effect includes lactic acidosis	GPC-3 GPC-7
20	b	2) Lactulose Column B – Definitions (letters) a) Drug of choice for acute non-infectious diarrhoea b) Laxative used in hepatic encephalopathy c) Long-acting bronchodilator (β 2-agonist) d) Hepatoprotective agent with cholelitholytic activity e) A nitrate used to terminate anginal	GPC-3 GPC-7

		attacks f) Hypoglycaemic agent whose adverse effect includes lactic acidosis	
21	a	3) Loperamide Column B – Definitions (letters) a) Drug of choice for acute non-infectious diarrhoea b) Laxative used in hepatic encephalopathy c) Long-acting bronchodilator (β 2-agonist) d) Hepatoprotective agent with cholelitholytic activity e) A nitrate used to terminate anginal attacks f) Hypoglycaemic agent whose adverse effect includes lactic acidosis	GPC-3 GPC-7
22	d	4) Ursodeoxycholic acid Column B – Definitions (letters) a) Drug of choice for acute non-infectious diarrhoea b) Laxative used in hepatic encephalopathy c) Long-acting bronchodilator (β 2-agonist) d) Hepatoprotective agent with cholelitholytic activity e) A nitrate used to terminate anginal attacks f) Hypoglycaemic agent whose adverse effect	GPC-3 GPC-7

		includes lactic acidosis	
23	c	5) Formoterol Column B – Definitions (letters) a) Drug of choice for acute non-infectious diarrhoea b) Laxative used in hepatic encephalopathy c) Long-acting bronchodilator (β2-agonist) d) Hepatoprotective agent with cholelitholytic activity e) A nitrate used to terminate anginal attacks f) Hypoglycaemic agent whose adverse effect includes lactic acidosis	GPC-3 GPC-7
24	f	6) Metformin Column B – Definitions (letters) a) Drug of choice for acute non-infectious diarrhoea b) Laxative used in hepatic encephalopathy c) Long-acting bronchodilator (β2-agonist) d) Hepatoprotective agent with cholelitholytic activity e) A nitrate used to terminate anginal attacks f) Hypoglycaemic agent whose adverse effect includes lactic acidosis	GPC-3 GPC-7
Short answer (1–2 sentences)			

25	Lactulose.	Name the drug of choice for hepatic encephalopathy.	GPC-3 GPC-7
26	Oropharyngeal candidiasis or dysphonia.	What adverse effect is characteristic of inhaled glucocorticoids at moderate doses?	GPC-3 GPC-7
27	Paracetamol or isoniazid (both are listed as hepatotoxic in the source tests).	Name one agent listed in the tests that is hepatotoxic.	GPC-3 GPC-7
28	Stimulates insulin secretion (by stimulating pancreatic β -cells).	State the mechanism of action of glibenclamide (gliclazide family) briefly.	GPC-3 GPC-7
29	Senna leaves; buckthorn (or alternatively senna and buckthorn bark as irritant laxatives).	Which two laxatives act by irritating the intestinal chemoreceptors? (name them)	GPC-3 GPC-7
30	Glimepiride.	Name a sulfonylurea derivative mentioned in the tests.	GPC-3 GPC-7
Multiple choice (single correct answer)			
31	A	Which of the following is an indicated drug for exertional angina (stable angina)? A) Nifedipine B) Propranolol C) Captopril D) Enalapril E) Clonidine	GPC-3 GPC-7
32	A	Which of the following is indicated for Prinzmetal (vasospastic) angina? A) Nifedipine B) Obzidan C) Dipyridamole D) Dopegit E) Captopril	GPC-3 GPC-7
33	C	A criterion of efficacy for an antianginal agent is: A) an increase in exercise tolerance	GPC-3 GPC-7

		time on a bicycle ergometer (VEM) by more than 1 minute B) an increase in the amount of nitroglycerin used C) an increase in VEM test duration by more than 2 minutes D) a reduction in exercise time E) transition of a patient from NYHA class II to class III angina	
34	C	Which agent is used to terminate an anginal attack? A) Sustak B) NitronG C) Nitroglycerin D) Verapamil E) Diltiazem	GPC-3 GPC-7
35	A	Which drug is the drug of choice for angina in a patient with bradycardia? A) Pindolol B) Propranolol C) Verapamil D) Diltiazem E) Metoprolol	GPC-3 GPC-7
36	E	Which drug is preferred for angina in a patient with heart failure? A) Verapamil B) Corinfar (nifedipine formulation) C) Diltiazem D) Acebutolol E) Nitrosorbit	GPC-3 GPC-7
Multiple choice (multiple correct answers)			
37	A,B,C,D,E	Indicate the conditions that increase sensitivity to cardiac glycosides (select all that apply): A) Advanced age B) Thyrotoxicosis C) Cor pulmonale (right-sided heart	GPC-3 GPC-7

		disease) D) Hypokalaemia E) Congestive heart failure	
38	C,D	Which groups of antiarrhythmic agents exert antifibrillatory effects? (select all that apply): A) Cardiac glycosides B) Calcium-channel antagonists (class IV) C) Beta-blockers (class II) D) Amiodarone, bretylium tosylate (class III) E) Quinidine, procainamide (class Ia)	GPC-3 GPC-7
39	A,B,C	Which of the following drugs are associated with proarrhythmic effects? (select all that apply): A) Ajmaline B) Mexiletine C) Propafenone D) Amiodarone	GPC-3 GPC-7
40	A,C,D	Which agents primarily act by prolonging atrioventricular conduction? (select all that apply): A) Propranolol B) Lidocaine C) Verapamil D) Digoxin E) Procainamide	GPC-3 GPC-7
41	B,D	Which antihypertensive agents should be used with caution in patients with concomitant diabetes mellitus and hypertension? (select all that apply): A) Verapamil	GPC-3 GPC-7

		B) Propranolol C) Diltiazem D) Hypothiazide (thiazide diuretic) E) Enalapril	
42	A,B,C,D	Indicate adverse effects of propranolol (select all that apply): A) Depression B) Bronchospasm C) A– V block D) Hypotension E) Constipation	GPC-3 GPC-7
True / False (mark T for true or F for false)			
43	T	The preferred route of administration for drugs in congestive heart failure is intravenous. (T/F)	GPC-3 GPC-7
44	T	Verapamil is classified as an antianginal agent. (T/F)	GPC-3 GPC-7
45	T	For long-term treatment of heart failure, the safest approach is to use minimal doses of diuretics. (T/F)	GPC-3 GPC-7
46	T	Nitrosorbit primarily produces venodilation and thereby reduces preload in patients with heart failure. (T/F)	GPC-3 GPC-7
47	T	Prazosin is an α -adrenoceptor blocker; its antihypertensive effect is mediated by α -receptor blockade. (T/F)	GPC-3 GPC-7
48	F	An increase in the amount of nitroglycerin consumed is a criterion of antianginal efficacy. (T/F)	GPC-3 GPC-7
Matching (match column A to column B) Column A — Drugs (numbers)			

49	a	1) Nitroglycerin Column B — Definitions (letters) a) A drug used to terminate an anginal attack (rapid vasodilator) b) A diuretic effective in secondary hyperaldosteronism (aldosterone antagonist) c) A β-adrenoceptor blocker that may precipitate bronchospasm and depression d) An α-adrenoceptor blocker (antihypertensive mechanism — α-receptor blockade) e) A calcium-channel blocker that prolongs AV conduction; has antianginal action f) A drug that predominantly dilates venules and thus reduces preload in heart-failure patients	GPC-3 GPC-7
50	b	2) Spironolactone Column B — Definitions (letters) a) A drug used to terminate an anginal attack (rapid vasodilator) b) A diuretic effective in secondary hyperaldosteronism (aldosterone antagonist) c) A β-adrenoceptor blocker that may precipitate bronchospasm and depression d) An	GPC-3 GPC-7

		α -adrenoceptor blocker (antihypertensive mechanism — α -receptor blockade) e) A calcium-channel blocker that prolongs AV conduction; has antianginal action f) A drug that predominantly dilates venules and thus reduces preload in heart-failure patients	
51	c	3) Propranolol Column B — Definitions (letters) a) A drug used to terminate an anginal attack (rapid vasodilator) b) A diuretic effective in secondary hyperaldosteronism (aldosterone antagonist) c) A β -adrenoceptor blocker that may precipitate bronchospasm and depression d) An α -adrenoceptor blocker (antihypertensive mechanism — α -receptor blockade) e) A calcium-channel blocker that prolongs AV conduction; has antianginal action f) A drug that predominantly dilates venules and thus reduces preload in heart-failure patients	GPC-3 GPC-7
52	d	4) Prazosin Column B — Definitions (letters) a)	GPC-3 GPC-7

		A drug used to terminate an anginal attack (rapid vasodilator) b) A diuretic effective in secondary hyperaldosteronism (aldosterone antagonist) c) A β-adrenoceptor blocker that may precipitate bronchospasm and depression d) An α-adrenoceptor blocker (antihypertensive mechanism — α-receptor blockade) e) A calcium-channel blocker that prolongs AV conduction; has antianginal action f) A drug that predominantly dilates venules and thus reduces preload in heart-failure patients	
53	e	5) Verapamil Column B — Definitions (letters) a) A drug used to terminate an anginal attack (rapid vasodilator) b) A diuretic effective in secondary hyperaldosteronism (aldosterone antagonist) c) A β-adrenoceptor blocker that may precipitate bronchospasm and depression d) An α-adrenoceptor blocker (antihypertensive mechanism —	GPC-3 GPC-7

		α -receptor blockade) e) A calcium-channel blocker that prolongs AV conduction; has antianginal action f) A drug that predominantly dilates venules and thus reduces preload in heart-failure patients	
54	f	6) Nitrosorbit Column B — Definitions (letters) a) A drug used to terminate an anginal attack (rapid vasodilator) b) A diuretic effective in secondary hyperaldosteronism (aldosterone antagonist) c) A β -adrenoceptor blocker that may precipitate bronchospasm and depression d) An α -adrenoceptor blocker (antihypertensive mechanism — α -receptor blockade) e) A calcium-channel blocker that prolongs AV conduction; has antianginal action f) A drug that predominantly dilates venules and thus reduces preload in heart-failure patients	GPC-3 GPC-7
Short answer (one–two sentences)			
55	Spironolactone (Verospiron).	Which diuretic is most effective for treating congestive heart failure complicated by secondary hyperaldosteronism?	GPC-3 GPC-7

		(provide the drug name)	
56	Reduction of preload (venodilation).	State the principal therapeutic effect of nitrosorbit in patients with heart failure (one or two words).	GPC-3 GPC-7
57	Nitroglycerin.	Name a drug used to terminate an anginal attack (give the active substance).	GPC-3 GPC-7
58	Bradycardia; severe bronchial asthma/bronchospasm (also A-V block, sick sinus syndrome).	List two contraindications to prescribing propranolol.	GPC-3 GPC-7
59	Increase in VEM test duration by more than 2 minutes.	Give one criterion of antianginal drug efficacy mentioned in the tests.	GPC-3 GPC-7
60	Advanced age; hypokalaemia (also thyrotoxicosis, congestive heart failure, cor pulmonale).	List two conditions that increase sensitivity to cardiac glycosides.	GPC-3 GPC-7

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.