

**Assessment Materials for Attestation in the discipline "Pharmacology"
for students admitted in 2023 under the educational program
31.05.01 General Medicine, specialization (profile) General Medicine
(specialist degree),
full-time form of education for the 2025-2026 academic year**

1. Assessment Materials for Conducting Ongoing Attestation in the Discipline

1.1. Assessment Materials for Attestation during Seminar-Type Classes

Attestation during seminar-type classes includes the following types of assignments: testing, solving situational problems, assessment of practical skills (abilities) mastery, control work (written test), writing and defending a report/essay, interview based on control questions.

1.1.1. Examples of Test Tasks:

Assessed Indicators of Competency Achievement: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. The primary mechanism of absorption for most drugs in the gastrointestinal tract is...
 - a) passive diffusion
 - b) active transport
 - c) filtration
 - d) pinocytosis
2. The half-life of a drug is...
 - a) the time for the substance concentration in plasma to decrease by 50% from the administered amount
 - b) the time for 50% of the substance to be excreted from the body
 - c) the absorption of 50% of the substance from the site of administration
 - d) the binding of 50% of the administered substance to blood proteins
3. Which definition corresponds to the maximum therapeutic dose?
 - a) the amount of a substance which, when exceeded, causes toxic effects
 - b) the amount of a substance that causes an initial biological effect
 - c) the amount of a substance that causes effects dangerous to the organism
 - d) the amount of a substance that quickly creates a high concentration of the drug in the body
4. Teratogenic action is...
 - a) a negative effect on the embryo and fetus, leading to congenital malformations
 - b) a toxic effect on the liver
 - c) a toxic effect on hematopoiesis

- d) a toxic effect on the kidneys
5. The use of M-cholinoblockers (Anticholinergics) causes...
- a) bronchodilation and reduced secretion of bronchial glands
 - b) decreased intraocular pressure
 - c) increased bronchial tone and secretion of bronchial glands
 - d) spasm of the gastrointestinal sphincters
6. Stimulation of postsynaptic beta2-adrenergic receptors is associated with...
- a) bronchodilation
 - b) mydriasis (pupil dilation)
 - c) miosis (pupil constriction)
 - d) contraction of the splenic capsule
7. Myocardial excitability is increased by...
- a) Adrenaline (Epinephrine)
 - b) Galazolin (a decongestant, not typically classified this way)
 - c) Mesaton (Phenylephrine)
 - d) Salbutamol
8. The most effective anticonvulsant for stopping status epilepticus is ...
- a) Diazepam
 - b) Topiramate
 - c) Lamotrigine
 - d) Ethosuximide
9. A "daytime tranquilizer," a derivative of the benzodiazepine series:
- a) Mezapam (Medazepam)
 - b) Phenazepam
 - c) Diazepam
 - d) Nozepam (Oxazepam)
10. Neuroleptics (Antipsychotics) are used as baseline therapy in the treatment of...
- a) psychoses
 - b) neuroses
 - c) narcolepsy
 - d) parkinsonism

1.1.2. Examples of Situational Tasks:

Assessed Indicators of Competency Achievement: GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. A patient suffering from parkinsonism was prescribed an appropriate drug. After taking it, the symptoms of the disease decreased, but at the same time, the patient began to complain of palpitations, dry mouth, and constipation. Which drug was prescribed to the patient? What are these listed effects associated with?
2. A patient with a long-standing liver disease took a sleeping pill for insomnia. A significant prolongation of the hypnotic effect was noted compared to the expected duration. Which drug did the patient take? How can the prolongation of its action be explained? What are the specifics of prescribing this group of hypnotic drugs for liver pathology?

1.1.3. Example of a Control Work (Written Test) Variant:

Assessed Indicators of Competency Achievement: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

Answer the following questions:

1. Cholinomimetic agents, classification of drugs.
2. Local anesthetics: mechanisms and site of drug action.
3. Pharmacological characteristics of alpha-adrenergic agonists.

1.1.4. Examples of Report/Essay Topics:

Assessed Indicators of Competency Achievement: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. The use of evidence-based medicine principles.
2. The dependence of drug effects on dose.
3. Drugs that tone the central nervous system (adaptogens).
4. Drugs affecting physical performance (actoprotectors).
5. Pharmacological characteristics of antioxidant agents.

1.1.5. Examples of Control Questions for an Interview:

Assessed Indicators of Competency Achievement: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. Pharmacokinetics of drugs: routes of administration, absorption, distribution of drugs in the body.

2. Non-opioid centrally acting drugs with analgesic activity. Pharmacological characteristics of the drugs.
3. Antiepileptic drugs. Classification.
4. Antiparkinsonian drugs. Mechanism of action. Indications for use. Side effects.

1.1.6. Examples of Tasks for Assessing Practical Skills Mastery:

Assessed Indicators of Competency Achievement: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. Write prescriptions for the following drugs:

Atropine sulfate

Neostigmine methylsulfate

2. Write prescriptions for the following drugs:

Vikasol (Menadione sodium bisulfite)

Heparin

1.2. Assessment Materials for Student's Independent Work

Assessment of independent work includes testing.

1.2.1. Examples of Single-Answer Test Items:

Assessed Indicators of Competency Achievement: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. Choose one answer out of four. Pharmacokinetics is the branch of pharmacology that studies:
 - A. the movement of drugs through the body
 - B. the mechanisms of drug action
 - C. the side effects of drugs
 - D. the targets of drug action
2. Choose one answer out of four. The fraction of a drug dose that reaches systemic circulation unchanged after extravascular administration is called:
 - A. bioavailability
 - B. biotransformation
 - C. bioequivalence
 - D. biotechnology

3. Choose one answer out of four. Medicinal products sold in the pharmacy network have undergone:

- A. three phases of clinical trials
- B. trials only on healthy volunteers
- C. the first phase of clinical trials
- D. only preclinical trials

4. Choose one answer out of four. The highest level of evidence for the efficacy of drug A is based on:

- A. results of completed controlled randomized trials with statistical analysis of the obtained results
- B. results of randomized trials with a limited number of observations upon reaching expert consensus
- C. results of individual observations from a large number of clinics
- D. consensus of a group of specialists based on data from open-label studies

5. Choose one answer out of four. The primary mechanism for the absorption of drugs from the gastrointestinal tract is:

- A. passive diffusion
- B. pinocytosis
- C. filtration
- D. active transport

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

Assessed competency achievement indicators: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. Select multiple correct answers. Side effects of growth hormone use include:

- A. acromegaly
- B. high blood pressure
- C. hearing impairment
- D. vision loss
- E. severe headaches
- F. increased daily diuresis

2. Select multiple correct answers. The following are used for forced diuresis:

- A. furosemide
- B. spironolactone
- C. triamterene
- D. mannitol

- E. uricosuric agents
- F. loop diuretics
- G. osmotic diuretics

3. Select multiple correct answers. General principles for treating drug poisoning include:

- A) delaying the absorption of toxic substances into the blood
- B) removing toxic substances from the body
- C) eliminating the effects of absorbed toxic substances
- D) symptomatic therapy
- E) antidote therapy
- F) reducing the dose of the substance that caused the poisoning

2. Match pharmacological effects (A-D) with drug names (1-5):

- A. Stimulation of testosterone, progesterone, and estrogen production
- B. Stimulation of protein synthesis, increased muscle mass
- C. Suppression of inflammation, reduced cell proliferation, increased blood pressure
- D. Suppression of bone decalcification
- E. Slowing the excretion of sodium ions and water in nephrons

- 1. Chorionic gonadotropin
- 2. Nandrolone
- 3. Ethinylestradiol
- 4. Dexamethasone
- 5. Desoxycorticosterone acetate

1.2.3. Examples of open-ended test tasks (questions with open-ended answers):

Assessed competency achievement indicators: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

1. A patient consulted a doctor complaining of severe headache and rapid heartbeat. Examination revealed a hyperkinetic hypertensive crisis. A drug was administered sublingually to reduce blood pressure. Blood pressure decreased, heart rate reduced. As a negative reaction, bronchospasm developed. This class of drugs is included in the group of substances considered doping in sports.

Which group of drugs was used in the described situation? In your answer, provide only the name of the drug group according to its mechanism of action.

2. Assessment materials for conducting intermediate certification in the discipline

Intermediate certification is conducted in the form of an exam.

Intermediate certification includes the following types of tasks: completing a task to assess practical skills, an interview.

2.1. Tasks for assessing the mastery of practical skills

Assessed competency achievement indicators: GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

List of medicinal substances for which students need to know the drugs, release forms, and dosing rules:

1.	Acetaminophen	31.	Isosorbide mononitrate
2.	Acetylsalicylic acid	32.	Ivabradine
3.	Acyclovir	33.	Lidocaine
4.	Aminophylline	34.	L-Tyroxine
5.	Amitriptyline	35.	Metoclopramide
6.	Ascorbinic acid	36.	Metronidazole
7.	Atropine	37.	Morphine hydrochloride
8.	Benzylpenicillinum Sodium	38.	Nifedipine
9.	Bicillin-1	39.	Nitroglycerin
10.	Caffeine	40.	Nystatin
11.	Calcium chloride	41.	Ofloxacin
12.	Cefotaxime	42.	Omeprazole
13.	Chlorpromazine	43.	Pancreatin
14.	Clonidine	44.	Papaverine hydrochloride
15.	Codeine	45.	Physostigmine
16.	Co-trimaxazole	46.	Piracetam
17.	Cyanocobalamine	47.	Prednisolone
18.	Diazepam	48.	Procaine
19.	Diclofenac-Sodium	49.	Propranolol
20.	Digoxin	50.	Pyridoxine hydrochloride
21.	Diphenhydramine	51.	Ranitidine
22.	Ephedrine	52.	Salbutamol
23.	Epinephrine	53.	Streptomycin
24.	Ergocalciferol	54.	Strophantin K
25.	Furosemide	55.	Thiamine bromide
26.	Furozolidone	56.	Trimeperidine
27.	Glibenclamide	57.	Urapidil
28.	Heparin	58.	Verapamil
29.	Hydrochlorothiazide	59.	Warfarin
30.	Insulin	60.	Zolpidem

2.2. List of theory questions:

№	Exam questions	Assessed competence achievement indicators
1.	Pharmacokinetics of drugs: routes of administration, absorption, and distribution of a substance in the organism. Biological barriers. Tissue depots of substances.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
2.	Chemical transformation (metabolic transformation, conjugation) of drugs in the organism and routes of drugs' elimination.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

3.	Pharmacodynamics of drugs: types of action. Location and mechanisms of drugs' action. Receptors and other mechanisms. Main and unwanted effects of drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
4.	Dependence of pharmacotherapeutic effect on the drug properties and conditions of their use, chemical and physical properties, doses and concentrations, continuous drug intake.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
5.	Drug interactions. Types of interaction (pharmaceutical, pharmacological). Mechanisms of interaction.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
6.	Agents, protecting nerve terminals. Classification. Mechanisms of action. Pharmacological characteristics of agents. Application.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
7.	Local anesthetics. Classification. Mechanism of action. General requirements for local anesthetics. Comparative pharmacological characteristics of different agents. Application. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
8.	Cholinergic neurotransmission. Distribution and classification of cholinoreceptors. Main effects of cholinoreceptors' stimulation. Classification of cholinergic drugs.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
9.	M-cholinomimetics and anticholinesterase agents. Classification. Mechanisms of action. Pharmacological characteristics. Indications and contraindications for M-cholinomimetics use. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
10.	M-cholinoblockers. Mechanism of action. Pharmacological characteristics and drug features. Indications and contraindications for M-cholinoblockers. Unwanted effects. Atropine poisoning and its treatment.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
11.	N-cholinoblockers (ganglioblockers and muscle relaxants). Classification. Mechanisms of action. Pharmacological characteristics of the drugs. Clinical use. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
12.	Adrenergic neurotransmission. Adrenergic receptor types, location, main effects after their stimulation. Classification of adrenergic drugs.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
13.	Adrenergic receptors stimulants (adrenomimics). Classification. Mechanisms of action. Pharmacological characteristics of the drugs. Indications. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

14.	Antiadrenergic agents (adrenoblockers). Classification. Mechanisms of action. Pharmacological characteristics of the drugs. Indications. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
15.	Adrenergic drugs of indirect action (stimulators and blockers). Mechanisms of action. Pharmacological characteristics of drugs. Indications. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
16.	Ethanol. Local and systemic effects, usage in medical practice. Ethanol overdose, its treatment. Alcoholism, main aspects and treatment.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
17.	Hypnotic agents. Classification. Mechanisms of action. Pharmacological characteristics of the drugs. Indications. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
18.	Narcotic analgesics. Classification. Mechanisms of action. Clinical application. Medical aspects of drug-abuse.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
19.	Comparative characteristic of different narcotic analgesics (natural and synthetic). Indications for use. Treatment of narcotics' acute poisoning.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
20.	Non-opioid analgesics. Classification. Mechanisms of effects. Pharmacological characteristics. Indications. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
21.	Anticonvulsants, antiparkinsonic agents. Classification. Mechanisms of action. Pharmacological properties. Indications for use. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
22.	Neuroleptics - phenothiazine derivatives. Mechanisms of action. Comparative characteristics of drugs. Indications for use. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
23.	Neuroleptics. Mechanisms of action, comparative characteristics of butyro-phenones, thioxanthines, benzamides and benzodiazepines.. Clinical applications. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
24.	Anxiolytics. Differences from neuroleptics. Classification. Mechanisms of action. Comparative characteristic of the drugs. Clinical applications. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1;

		PC-1.3.2; PC-3.1.1
25.	Antidepressants. Classification. Mechanisms of action. Pharmacological properties of the drugs. Clinical use. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
26.	Psychostimulants. Classification. Mechanisms of action. Pharmacological properties of the drugs. Clinical application. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
27.	General tonics and nootropic agents. Classification. Mechanisms of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
28.	Analeptics. Classification. Mechanism of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
29.	Expectorants and antitussives. Classification. Mechanism of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
30.	Bronchodilators. Classification. Mechanism of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
31.	Positive inotropic drugs. Classification. Cardiac glycosides. General structure. Haemodynamic mechanisms and effects of cardiac glycosides. Indications.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
32.	Cardiac glycosides – foxgloves derivatives. Pharmacokinetics. Principles of dosing. Clinical use.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
33.	Drugs used for treatment of acute cardiac failure and lung edema. Mechanisms of action. Pharmacological characteristics. Features of administration.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
34.	Antiarrhythmic drugs - blocking voltage sensitive Na ⁺ and Ca ²⁺ channels. Mechanisms of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

35.	Antiarrhythmic drugs - blocking β -adrenoreceptors and prolonging the cardiac action potential. Mechanisms of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
36.	Nitroglycerine and other organic nitrates. Mechanisms of action. Comparative description of drugs. Clinical application. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
37.	Anti-anginal drugs - calcium channel blockers, β -adrenoblockers, bradyrhythmic agents and others. Mechanisms of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
38.	Drugs influencing the brain blood flow. Classification. Mechanisms of action. Pharmacological characteristics. Clinical application. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
39.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of anti-migraine agents.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
40.	Mechanism of action, pharmacological characteristics, unwanted effects and indications of antihypertensive drugs of central action.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
41.	Mechanism of action, pharmacological characteristics, unwanted effects and indications of neurotropic antihypertensive drugs with peripheral action.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
42.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of vasodilators used for hypertension treatment.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
43.	Mechanism of action, pharmacological characteristics, unwanted effects and indications of agents, influencing the renin-angiotensin system.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
44.	Mechanism of action and pharmacological characteristics of drugs used for acute ischemic heart attack treatment.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1;

		PC-1.3.2; PC-3.1.1
45.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of antihypotensive drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
46.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of gastric antisecretory drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
47.	Mechanisms of action, pharmacological characteristics, indications and unwanted effects of antacids and gastroprotectors.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
48.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of emetic and antiemetic agents.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
49.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of the agents, stimulating bile production and bile secretion.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
50.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of the agents, intensifying intestinal peristalsis. Pharmacological characteristics of purgatives.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
51.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of antiplatelet drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
52.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of anticoagulants.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
53.	Classification, mechanisms of action, pharmacological characteristics and indications of proaggregant and procoagulant agents.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

54.	Pharmacological characteristics, mechanisms of action, unwanted effects and indications of drugs used for anemias treatment.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
55.	Classification, mechanisms of action, unwanted effects and indications of agents affecting myometrium.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
56.	Mechanisms of action, pharmacological characteristics, indications and unwanted effects of loop diuretics, thiazides, potassium-sparing diuretics.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
57.	Mechanisms of action, pharmacological characteristics, unwanted effects and indications of osmotic diuretics and aldosterone antagonists.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
58.	Classification, mechanism of action, pharmacological characteristics and indications of hypothalamic and pituitary hormones.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
59.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of thyroid hormones and drugs used in hyperthyroidism.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
60.	Pancreatic islet hormones. Classification, mechanism of hypoglycemic action, effects on metabolism and indications of insulin.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
61.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of oral hypoglycemic agents.	; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
62.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of adrenal steroids and their derivatives.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
63.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of sex hormones and their derivatives.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
64.	Classification, mechanism of action, pharmacological characteristic, indications and adverse reactions of drugs used for contraception.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
65.	Classification, mechanism of action, pharmacological characteristics and indications of anabolic steroids.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1;

		PC-1.3.2; PC-3.1.1
66.	Classification, mechanism of action, pharmacological characteristics and indications of steroidal anti-inflammatory drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
67.	Mechanisms of metabolic and unwanted effects of glucocorticoids.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
68.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of non-steroidal anti-inflammatory drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
69.	Classification, mechanisms of action, pharmacological characteristics and indications of agents used for treatment of immediate allergic reactions.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
70.	Classification, mechanisms of action, pharmacological characteristics and indications of immunotropic drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
71.	Classification of vitamins and vitamin-like compounds. Pharmacological characteristics of coenzymes, multivitamins and anti-vitamins.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
72.	Classification, mechanisms of action, pharmacological characteristics and indications of water soluble vitamins.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
73.	Classification, mechanisms of action, pharmacological characteristics and indications of fat soluble vitamins.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
74.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of enzyme and anti-enzyme drugs.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

75.	Mechanisms of action, pharmacological characteristics, unwanted effects and indications of the main endogenous factors involved in calcium and phosphate metabolism.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
76.	Pharmacokinetics, pharmacodynamics, indications and overdose of vitamin D and its metabolites.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
77.	Mechanisms of action, pharmacological characteristics, unwanted effects and indications of drugs used for treating bone disorders.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
78.	Mechanisms of action, pharmacological characteristics, unwanted effects and indications of statins and bile acid binding resins used for atherosclerosis treatment.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
79.	Mechanisms of action, pharmacological characteristics, unwanted effects and indications of fibric acid derivatives, nicotinic acid, antioxidants and endothelium protectors used for atherosclerosis treatment.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
80.	Classification, mechanisms of action, pharmacological characteristics, unwanted effects and indications of drugs used for gout treatment.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
81.	Classification of antibiotics based on chemical structure, mechanism and spectrum of action. General principles of anti-infective therapy. Complications of antibiotics therapy.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
82.	Classification of beta-lactam antibiotics. Pharmacological properties of carbapenems and monobactams. Mechanisms of resistance to beta-lactam antibiotics. <i>Beta</i> -lactamase inhibitors.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
83.	Biosynthetic penicillins. Mechanism of action and activity spectrum. Pharmacokinetics and pharmacodynamics of the drugs. Application. Complications of penicillin therapy.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
84.	Semisynthetic penicillins. Mechanism of action and activity spectrum. Pharmacokinetics and pharmacodynamics of the drugs. Clinical use. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1;

		PC-1.3.2; PC-3.1.1
85.	Antibiotics - cephalosporins. Mechanism of action and activity spectrum. Pharmacokinetics and pharmacodynamics of the drugs. Clinical use. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
86.	Antibiotics - tetracyclines, chloramphenicol and macrolides. Mechanism of action and activity spectrum. Pharmacokinetics and pharmacodynamics of the drugs. Clinical use. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
87.	Antibiotics - aminoglycosides, linkozamides and polymyxins. Mechanism of action and activity spectrum. Pharmacokinetics and pharmacodynamics of the drugs. Clinical use. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
88.	Synthetic antimicrobials - quinolones. Classification. Mechanism of action and activity spectrum. Pharmacokinetics and pharmacodynamics of drugs. Clinical use. Unwanted effects.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
89.	Synthetic antimicrobials - sulfonamides, nitrofurantoin, 8-oxiquinaline and quinoxaline derivatives. Mechanism of action and activity spectrum. Clinical use. Unwanted effects.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
90.	Antituberculosis drugs. Classification, mechanism of action, pharmacological characteristics. Clinical use. Unwanted effects	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
91.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of antiviral agents.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
92.	Classification of antiparasitic drugs. Mechanism of action and pharmacological characteristics of antimalarial and antitrichomonas agents.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
93.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of antifungal antibiotics.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
94.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of synthetic antifungal drugs.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
95.	Classification, mechanism of action, pharmacological characteristics, unwanted effects and indications of anthelmintic drugs.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

96.	Mechanisms of action, pharmacological characteristics, unwanted effects and indications of alkylating agents and antimetabolites used in cancer chemotherapy.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
97.	Mechanisms of action, pharmacological characteristics, unwanted effects and indications of cytotoxic antibiotics, plant derivatives, hormones, enzymes and radioactive isotopes used in cancer chemotherapy.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
98.	General principles of acute poisoning treatment. Heavy metals poisoning.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
99.	Transplacental action of drugs in different periods of embryonic and fetus development. Classification of drugs based on the effects on fetus.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
100.	Special pharmacokinetic and pharmacodynamic features in neonates and infants. Pediatric dosage forms and compliance.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
101.	Drug use during lactation. Mechanisms of penetration of drugs in breast milk. Drugs affecting milk secretion.	GPC-3.1.1; GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1
102.	Pharmacokinetic features associated with aging. Practical aspects of geriatric pharmacology.	GPC-7.1.1; GPC-7.2.1; PC-1.3.2; PC-3.1.1

2.3. Example of examination cards

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

Кафедра: _____

Дисциплина: _____

Специальность 31.05.01 Лечебное дело (уровень специалитета)

Учебный год: 20__-20__

Экзаменационный билет № ... (собеседование)

1. Neuroleptics - phenothiazine derivatives. Classification. Mechanism of action. Comparative characteristics of drugs. Indications for use. Side effects.
2. Anticoagulants. Classification. Mechanism of action. Pharmacological characteristics. Application. Side effects. Pharmacological antagonists of anticoagulants.
3. Antiatherosclerotic agents that lower blood cholesterol levels primarily (LDL). Mechanism of action. Pharmacological characteristics. Indications for use. Side effects.

М.П.

Заведующий кафедрой _____ А.А. Спасов

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

Кафедра: _____

Дисциплина: _____

Специальность 31.05.01 Лечебное дело (уровень специалитета)

Учебный год: 20__-20__

Экзаменационный билет № ... (практические навыки)

Выписать рецепты:

1. Atropine (solution in ampoules 1 mg/ml, 1 ml)
2. Diphenhydramine (tablets 0.05 g)
3. Nitroglycerin (spray dosed 0.4 mg/dose, 200 doses)
4. Furosemide (solution in ampoules 10 mg/ml, 2 ml)
5. Sulfamethoxazole + Trimethoprim (tablets 0.4 g + 0.08 g)

Зав. кафедрой _____ А.А. Спасов

The full fund of assessment tools for the discipline/practice is available in the Volgograd State Medical University Electronic Information System at the following link(s):

<https://elearning.volgmed.ru/course/view.php?id=11706>

Considered at the meeting of the Department of Pharmacology and Bioinformatics, protocol No. 18 dated May 31, 2025.

Head of Department



A.A. Spasov