

**Academic programme  
component**

**31.05.01 General Medicine  
programme**

**B1.O.40  
discipline code**

**ASSESSMENT MATERIALS**

**Discipline**

**Introduction to Internal Medicine**

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Approved at the meeting of the  
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Record no. \_\_\_\_\_ dated

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## 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>		
<b>ОПК-4</b> Can apply medical devices according to the established medical procedures and conduct medical examination to determine a diagnosis	<b>ИД-1ОПК-4</b> Knows the features of modern diagnostics, conducts a patient examination using medical devices in accordance with medical protocols and standards; <b>ИД-2 ОПК-4</b> Substantiates the application and evaluation algorithm for the results of applying medical technologies, specialized equipment and medical devices for solving professional	- modern methods of examination; - indications and contraindications to prescribing certain examination methods in accordance with a disease; - normal indicators and their possible deviations in pathological conditions; - a list of medical devices according to the established medical procedures, in the diagnostics and treatment of patients with various types of pathology;	- determine the indications and contraindications to prescribing certain examination methods in accordance with a disease; - analyse the results of the examination and the ongoing treatment; - select the necessary medical devices for the diagnostics and treatment of a particular patient;	- skills in using indicators of laboratory, functional, instrumental examination in the diagnosis of diseases; - skills in providing medical care using medical devices according to the established medical procedures	- a set of tasks for practical work; - test tasks; - case tasks;	Examination cards

## 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			
	<b>Insufficient</b> (« <i>unsatisfactory</i> »)	<b>Sufficient</b> (« <i>satisfactory</i> »)	<b>Above average</b> (« <i>good</i> »)	<b>Advance</b> (« <i>excellent</i> »)
<b>Extent of knowledge</b>	Knowledge level is below the required.	Minimally allowed knowledge level. Minor mistakes occurred.	Knowledge level corresponds well to the educational programme. Minor errors occurred when answering the theoretical	Knowledge level corresponds well to the educational programme.

			questions.	
<b>Skill mastery</b>	Basic abilities were not demonstrated during standard tasks completion.	Basic abilities were demonstrated. All tasks were completed in full, yet with few errors.	Basic abilities were demonstrated. All tasks were completed in full, yet with few errors.	All main and additional tasks were completed without mistakes or errors.
<b>Skill mastery</b>	Basic abilities were not demonstrated during standard tasks completion.	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.	Basic abilities were demonstrated. All main and additional tasks were completed without mistakes or errors.
<b>Competence mastery characteristics</b>	Competencies have not been acquired.	Competencies mastery is adequate.	Competencies mastery mainly satisfies the requirements.	Competencies mastery satisfies the requirements to the full extent.

### 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</i>	The task is completed correctly and in full. The report on practical work has been prepared in accordance with the requirements. Answers to the teacher's questions (during the presentation) are full.
<i>Good</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</i>	The task is completed partially, with mistakes. The tasks are completed at the average level. Majority of task completion requirements are satisfied.
<i>Unsatisfactory</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.

#### 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:

Choose one correct answer.

1. The patient has a quiet, dry cough, with a pain in the right half of the chest. The symptoms above refer to:

- a) dry pleurisy
- b) chronic bronchitis
- c) emphysema
- d) pneumosclerosis
- e) acute bronchitis

2. The patient has a constant fever, chest pain when coughing and breathing, sputum of a "rusty colour". The symptoms above refer to:

- a) acute bronchitis
- b) focal pneumonia
- c) pneumosclerosis
- d) croup pneumonia
- e) emphysema

3. The patient has an attack of expiratory suffocation (bronchospasm), name the position that the patient takes:

- a) passive
- b) forced lying on the back
- c) forced lying on the side
- d) brace position

4. The patient has sharply decreased elasticity of lung tissue and increased its airiness due to the chronic broncho-obstructive syndrome, name the shape of the chest:

- a) normosthenic
- b) asthenic
- c) hypersthenic
- d) emphysematous
- e) paralytic

5. The patient has fingers as drumsticks, and nails in the form of watch glasses. Determine the possible cause:

- a) acute pneumonia
- b) chronic lung diseases
- c) diabetes
- d) peptic ulcer

6. The patient has a compaction of the lung tissue induration (infiltration) with localization in the lower lobe of the right lung. Determine the nature of the vocal tremor:

- a) moderate symmetrical
- b) reinforced in the lower half of the chest on the left
- c) weakened in the lower half of the chest on the right
- d) not changed

Grade/points	Assessment criteria
<i>Excellent</i>	90-100% of correct answers
<i>Good</i>	70-89% of correct answers
<i>Satisfactory</i>	50-69% of correct answers
<i>Unsatisfactory</i>	49% or less 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 (module) and in MAU LMS Moodle.

Assessment materials include a typical case tasks:

**Task 1** A 59-year-old woman went to the doctor complaining of increasing shortness of breath for 6 months, and weakness. Three months ago, with these complaints, she was hospitalized in the pulmonology department, where she was diagnosed with bilateral pneumonia. The antibacterial therapy did not have an effect. After discharge from the hospital, her condition continued to deteriorate: shortness of breath and weakness increased. She also had a low-grade fever for the past 3 days. During auscultation, crepitation is heard in the posterior basal sections and in the interscapular region. Plain X-ray film of the chest organs in the lower parts of both lungs showed an inhomogeneous density with a cellular structure.

Explain the answers to the following questions:

1. What pathological process in the lungs can be assumed?
2. What additional examinations should be carried out for diagnosis clarification?
3. Which medicines should be prescribed first?
4. What are the next tactics?

**Task 2** A 74-year-old man went to the doctor complaining of fatigue and weight loss for 2 months. The patient also noted pain in the right shoulder with irradiation to the forearm area

along the inner surface. A physical examination revealed a pathological narrowing of the right pupil. Plain X-ray film in the upper part of the right lung showed a limited density, against which the bronchial lumen is not visible. The posterior segment of the first and second ribs is destroyed.

Explain the answers to the following questions:

1. What is the presumed diagnosis?
2. What was the cause of the pain in the right shoulder and anisocoria?

**Task 3** A 65-year-old patient, a smoker, complained of cough and shortness of breath for a month. Plain X-ray film showed a limited homogeneous density in the upper field of the left lung, and the upper lobe of the left lung was reduced in volume. The trachea has shifted to the left; the left dome of the diaphragm was raised “in the form of a tent.”

Explain the answers to the following questions:

1. What is the presumed diagnosis?
2. What additional examinations should be carried out?

Grade/points	Assessment criteria
<i>Excellent</i>	The requirements are fully satisfied. Systemic and situational approaches are applied. Justified argumentation is given. Origin, risks, prognosis are determined. Plan for patient's treatment is presented.
<i>Good</i>	The situation is correctly assessed. Origin, risks, prognosis are determined. Plan for patient's treatment is presented. Justified argumentation is not given.
<i>Satisfactory</i>	Possible causes of the condition are identified. Prognosis is not reasoned. Incomplete patient's treatment plan is presented.
<i>Unsatisfactory</i>	The task has not been completed.

### 3.4. Criteria and grading system of the discipline results during the interim assessment examination

#### Criteria and grading system for the discipline results (examination)

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 Introduction to Internal Medicine**

1. The subjective method of patient examination. Complaints, their details, anamnesis, the history of life.
2. The objective method of patient examination. Body types. Patient, their characteristics.
3. The objective method of patient examination. The patient's position. Assessment of the patient's general condition.
4. The objective method of patient examination. The state of patient's consciousness. Types of impairment of consciousness. Signs of coma, the main types of coma.
5. The objective method of patient examination. Assessment of the subcutaneous fat state. Palpation of peripheral lymph nodes, action sequence and evaluation of the results.
6. Questioning of patients with respiratory diseases. The mechanism of the main complaints' formation, their characteristics.
7. Examination of patients with respiratory diseases. Types of chest.
8. Palpation of the chest. Changes in vocal tremor due to lung pathology.
9. Lung percussion: its types and action sequence. Changes in percussion sound due to lung pathology.

10. Auscultation of the lungs. Vesicular breath sounds, the signs, mechanism of formation, change in normal and pathological conditions. Heavy breathing.
11. Bronchial respiration: conditions of formation and clinical significance.
12. Moist rales: mechanism of formation, classification, clinical significance.
13. Dry rales: mechanism of formation, classification, clinical significance.
14. Crepitation and pleural friction rub: mechanism of formation, differential diagnostic signs, clinical significance.
15. Pulmonary tissue attenuation. Clinical signs.
16. Pleural effusion. Clinical signs.
17. Diagnostic value of pleural puncture. Difference between transudates and exudates.
18. Pneumothorax: classification, clinical signs.
19. Broncho-obstructive syndrome. Sputum analysis. Spirographic signs of chronic bronchitis and bronchial asthma.
20. Lung cavity syndrome. Clinical signs of lung abscess.
18. Pulmonary collapse: classification, clinical signs.
22. Syndrome of increased airiness of lung tissue: the mechanism of formation, the main clinical symptoms of pulmonary emphysema.
23. Respiratory failure syndrome. Clinical and spirographic signs of obstructive type of respiratory failure, asthmatic status.
24. Respiratory failure syndrome. Clinical and spirographic signs of restrictive type of respiratory failure.
25. Laboratory sputum examination and clinical evaluation of the results.
26. Spirography: basic indicators, spirogram analysis.
27. Questioning of patients with cardiovascular diseases: the mechanism of formation of the main complaints, their characteristics.
28. Examination of patients with cardiovascular diseases: the mechanism of formation and characteristics of cyanosis, cardiac edema. Methods for determining edema.
29. Palpation of heart: the mechanism of formation of cardiac and apical impulse, properties of apical impulse, their clinical assessment.
30. Pulse: its properties and significance in clinical practice.
31. Percussion of the heart: its boundaries and vascular bundle, the causes of changes in the boundaries of relative and absolute cardiac dullness.
32. Auscultation of the heart: rules and points of auscultation, the sequence of listening to the heart.
33. Heart tones: the mechanism of formation, differential diagnostic signs, causes of changes in heart tones.
34. Heart murmurs: classification, mechanism of their occurrence, clinical assessment. Differential diagnostic signs of innocent and functional cardiac murmurs.
35. Electrocardiography: rules for taking an ECG, electrocardiographic leads. ECG analysis.
36. Arterial hypertension syndrome: classification, determination of the degree and risk group of hypertension. Methods of patients examination with arterial hypertension.
37. Clinical symptoms of hypertension, its stages. Clinical course. Hypertension crisis. Hypertension complications.
38. Coronary heart disease. Classification of angina pectoris, clinical symptoms, diagnostic methods.
39. Myocardial infarction: clinical signs and laboratory diagnostic methods. Atypical forms of myocardial infarction.

40. Myocardial infarction: ECG diagnosis of stages, determination of the localization of myocardial infarction.
41. Mitral valve disease: subjective, objective and instrumental diagnostic methods.
42. Stenosis of the left atrioventricular orifice (mitral stenosis): subjective, objective and instrumental diagnostic methods.
41. Aortic valve disease: subjective, objective and instrumental diagnostic methods.
41. Aortic stenosis: subjective, objective and instrumental diagnostic methods.
41. Tricuspid regurgitation: subjective, objective and instrumental diagnostic methods.
46. Cardiac rhythms disorder. ECG-signs of rhythm disorder – paroxysmal supraventricular and ventricular tachycardia, extrasystole, atrial fibrillation and atrial flutter.
47. Conduction defect. ECG-signs of sinoatrial block, atrioventricular block and its degrees, intraventricular block.
48. Chronic left-sided heart failure: causes, clinical symptoms, stages.
49. Chronic right-sided heart failure: causes, clinical symptoms, stages.
50. Acute left-sided heart failure: causes and clinical symptoms of cardiac asthma, pulmonary edema.
49. Acute right-sided heart failure: cause and clinical symptoms.
52. Acute vascular insufficiency: the mechanism of formation, clinical signs of syncope, collapse, and shock.
53. Complaints of patients with diseases of the stomach and intestines, the mechanism of their formation. Examination of patients with digestion diseases.
54. Modern methods of stomach examination. Gastric juice examination and pH-metry, clinical analysis of the results.
55. Questioning of patients with diseases of the liver and biliary tract, the mechanism of complaints formation, the importance of anamnesis.
56. Examination of patients with diseases of the liver and biliary tract.
57. Jaundic: differential diagnostic clinical and laboratory signs of parenchymal, mechanical and hemolytic jaundice.
58. Portal hypertension: the mechanism of formation, clinical manifestations.
59. The main biochemical syndromes in liver diseases: cytolysis, cholestasis, mesenchymal inflammation –diagnostic criteria.
60. Liver insufficiency: clinical and laboratory signs.
61. Questioning and examination of patients with kidney and urinary diseases, features of anamnesis collection, symptoms of bladder control problems.
62. Diagnostic value of the general urinalysis, quantitative methods of urine examination, their interpretation (the Nechiporenko method, the Addis count).
63. Laboratory study methods of kidney function and their clinical assessment (the Zimnitsky test, the Rehberg test). Their importance in clinical practice.
64. Urinary syndrome: haematuria, proteinuria, leukocyturia. The mechanism of formation. Laboratory diagnostics, importance in clinical practice.
65. Renal hypertension. The mechanism of formation, features of the clinic. 66. Nephrotic syndrome: causes, clinical and laboratory signs.
67. Chronic renal failure: mechanism of formation, clinical and laboratory signs, stages, symptomatology of uremic coma.
68. The main complaints and examination of patients with endocrine system diseases.
69. Clinical syndromes in patients with endocrine system diseases: thyrotoxicosis, hypothyroidism, obesity.



70. Diabetes: classification, main clinical symptoms and syndromes, laboratory diagnosis of diabetes.
71. Acute complications of diabetes: signs of diabetic (ketoacidotic) and hypoglycemic coma.
72. The diagnostic value of a general blood test.
73. The main clinical syndromes in patients with blood diseases: leukemic, hemorrhagic.
74. Anemia: clinical symptoms and laboratory signs of iron deficiency anemia.
75. Anemia: clinical symptoms and laboratory signs of B12-deficiency anemia.

**Practical tasks:**

**Task 1.** Analyze the received data.

Red blood cells: Male – (4-5,1)\*10<sup>12</sup>/l

Female: (3,7-4,7)\*10<sup>12</sup>/L

Hemoglobin. Male: 130-160 g/L

Female: 120-140 g/L

Farbindex: 0,86–1,05

Reticulocytes: 5-10 per 1000 red blood cells

Platelets: (180 – 320) \*10<sup>9</sup>/L

White blood cells: (4 – 9)\* 10<sup>9</sup>/L

Band neutrophils 1-6%

Segmented neutrophils 45-65%

Eosinophils 2-4%

Basophils 0-1%

Lymphocytes 18-35%

Plasmocytes 0-1%

Monocytes 2-9%

ESR (erythrocyte sedimentation rate). Male: 3-10 mm/hr

Female: 4-15 mm/hr

**Task 2.** Red blood cells count of a patient: 2,5x10<sup>12</sup>/L, hemoglobin: 160 g/L. Farbindex: 1,3. Evaluate this data. What do they show?

**Task 3 -** make a hemogram

Red blood cells: 3,0 x 10<sup>12</sup> /L.

Hemoglobin: 100 g/L.

Count the farbindex.

Reticulocytes: 1.0%.

Platelets: 80 x 10<sup>9</sup> /L.

White blood cells – 18 x 10<sup>9</sup> /L.

	Total	B	E	N	m/c	U	P	S	L	M
% content	100%	0	14	73	-	2	7	64	10	3
Abs. count	18x10 <sup>9</sup> /L				-	-	-	-		

ESR: 10 mm/hr.

**Task 4 -** make a hemogram

Red blood cells: 1,1 x 10<sup>12</sup> /L.

Hemoglobin: 30 g/L.

Farbindex: 0,8

Reticulocytes: 0%.

Platelets:  $20 \times 10^9 /L$ .

White blood cells –  $1,0 \times 10^9 /L$ .

	Total	B	E	N	m/c	U	P	S	L	M
% content	100%	0	0	30.5			0.5	30	65.5	4
Abs. count	$1,0 \times 10^9 /L$				-	-	-	-		

ESR: 70 mm/hr.

**Task 5.** The results of the analysis of the protein content in the blood were received from the biochemical laboratory: 30 g/L and 100 g/L. The results are of two patients – a child with extensive burns and a man with hypoacid gastritis, pancreatitis (inflammation of the pancreas).

1. Specify the patients to whom these tests belong.

2. Explain the conclusion.

**Task 6.** The patient's blood contains 15.2 mmol/L of total bilirubin, direct bilirubin – 1.8  $\mu\text{mol/L}$ , stercobilin is found in the feces, stercobilinogen is in the urine, no bilirubin.

Tell whether there is any violation of pigment metabolism.

**Task 7.** The presence of casts in the urine indicates:

Hyaline casts:

Granular casts:

Waxy casts:

Red blood cell casts:

White blood cell casts:

Epithelial cell casts:

**Task 8.** Match the following

Enzyme	An organ in whose pathology an increase in the corresponding enzyme is of diagnostic importance
A) alpha-amylase	1) skeletal muscles, heart
B) alanine transaminase (ALT)	2) myocardium, liver
C) aspartate transaminase (AST)	3) prostate, bone tissue
D) creatinine kinase	4) pancreas, salivary glands
E) acid phosphatase	5) liver

**Task 9.** Three patients underwent a glucose tolerance test. Data on the blood glucose content have been received, on the basis of which “glucose curve” was constructed.

	The concentration of glucose in $\mu\text{mol/L}$					
	Before drinking	After drinking				
		30 min	60 min	90 min	120 min	150 min
Patient A	5.9	7.0	9.2	9.0	8.0	7.0

Patient B	4.5	7.0	7.7	5.6	5.3	5.0
Patient C	3.6	3,8,	4.3	3.5	3.5	3.6

1. Identify possible disorders of carbohydrate metabolism, name their probable causes.
2. Plan additional examination to verify your assumptions.

**Task 10.** 1. A patient with a sharp sternum or abdomen pain has a relative increase in serum activity of Creatine kinase (CK) > aspartate transaminase (AST) > alanine transaminase (ALT) » Gamma-glutamyltransferase (GGT) > amylase. The most likely diagnosis is:

- A) acute pancreatitis;
- B) acute viral hepatitis;
- C) renal colic;
- D) myocardial infarction;
- E) acute pleurisy.

**Task 11.** Evaluate leukocyte formulas. Calculate the absolute number of white blood cells of each type.

A)

White blood cells	Basophils, %	Eosinophils, %	Neutrophils				Lymphocytes, %	Mononuclear cells, %
			myelocyte, %	immature, %	banded, %	segmented, %		
4.6x10 <sup>9</sup> /L	0	3	-	-	4	65	25	3

B)

White blood cells	Basophils, %	Eosinophils, %	Neutrophils				Lymphocytes, %	Mononuclear cells, %
			myelocyte, %	immature, %	banded, %	segmented, %		
13.7x10 <sup>9</sup> /L	0	2	-	2	6	73	11	6

**Task 12.** A patient with sharp heart pain was admitted to the hospital's emergency room. The doctor suspected a myocardial infarction and suggested conducting a study of blood amino transferases.

1. Explain doctor's prescription.
2. Suggest other enzymes that can be used to diagnose the myocardial infarction.

### Typical examination card variant

<p>MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION          FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER          EDUCATION  <b>“MURMANSK ARCTIC UNIVERSITY”</b>  <b>EXAMINATION CARD</b> no. 1</p> <p><b>on the discipline “Introduction to Internal Medicine”</b></p> <ol style="list-style-type: none"> <li>1. The objective method of patient examination. Assessment of the subcutaneous fat state. Palpation of peripheral lymph nodes, action sequence and evaluation of the results.</li> <li>2. Chronic right-sided heart failure: causes, clinical symptoms, stages.</li> <li>3. The diagnostic value of a general blood test, its usage. Prescribe three drugs from this group.</li> </ol>
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4. The results of the analysis of the protein content in the blood were received from the biochemical laboratory: 30 g/L and 100 g/L. The results are of two patients – a child with extensive burns and a man with hypoacid gastritis, pancreatitis (inflammation of the pancreas).

1. Specify the patients to whom these tests belong.

2. Explain the conclusion.

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. The given answer is full and correct.
<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. The answer to a practical question contains some errors.
<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. The answer to a practical question contains significant mistakes.
<i>Unsatisfactory</i>	The answer is not 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 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 to assess each competence in written form.

The set of tasks includes: *tests, case tasks, situational tasks*

### Set of diagnostic tasks

<b>OIIK-4 Can apply medical devices according to the established medical procedures and conduct medical examination to determine a diagnosis</b>	
<b>Variant 1</b>	
1	<p>A 24-year-old man came to a therapist complaining of cough and chest pain, which worsens with coughing and deep inhaling with no history of diseases. Plain X-ray film showed a band of translucency in the peripheral part of the left pulmonary field up to 2 cm wide. There is no lung pattern on the background of translucency. <i>Explain the answers to the following questions:</i></p> <ol style="list-style-type: none"> <li>1. <i>What is the presumed diagnosis?</i></li> <li>2. <i>What additional examinations should be carried out?</i></li> <li>3. <i>Is there a need for a puncture in this case?</i></li> </ol> <p><b>Answer:</b> Left-sided spontaneous pneumothorax.            2. Chest CT to exclude bullous transformation of the lungs.            3. Since the pneumothorax is small and the patient does not have shortness of breath, a puncture is not required</p>
2	<p>What is the Nechiporenko method of urinalysis? It is a number of white blood cells, red blood cells and casts in urine per</p> <ol style="list-style-type: none"> <li>A) day</li> <li>B) hour</li> <li>B) minute</li> <li>C)</li> </ol> <p>It is a specific amount of urine per minute  <b>D) It is a number of white blood cells, red blood cells and casts in 1 ml of urine</b></p>
3	<p>The vocal fremitus increases with:</p> <ol style="list-style-type: none"> <li><b>a) the compaction of lung tissue;</b></li> <li>b) the lungs emphysema; c</li> <li>) the presence of fluid in the pleural cavity;</li> <li>d) bronchial obstruction;</li> <li>e) fibrothorax.</li> </ol>
4.	<p>Mitral stenosis is:</p> <ol style="list-style-type: none"> <li>a) incomplete opening of the valve in the systole;</li> <li><b>b) incomplete opening of the valve in the diastole;</b></li> <li>c) incomplete closure of the valve in the systole;</li> <li>d) incomplete closure of the valve in the diastole</li> </ol>
<b>Variant 2</b>	
1	<p>A 44-year-old man, a locksmith, came to a doctor due to increasing shortness of breath, and dry cough. He has a history of long-term smoking. The index of a smoking person is 20 packs/year. During auscultation, there were dry rales. Plain X-ray film showed that the pulmonary fields were of increased transparency. The diaphragm was flattened and shifted downwards, the cardiac shadow was reduced. The ribs shadows were positioned more horizontally than usual. The front segments of the nine ribs are visible.</p> <p><i>Explain the answers to the following questions:</i></p> <ol style="list-style-type: none"> <li>1. <i>What disease can be assumed before the plain X-ray?</i></li> <li>2. <i>What pathology is displayed on the X-ray?</i></li> </ol>

	<p>1. What disease can be assumed after the plain X-ray?</p> <p>4. What additional examinations should be carried out for diagnosis clarification?</p> <p><b>Answer:</b> 1. Chronic obstructive pulmonary disease (COPD).</p> <p>2. Lung emphysema. The pulmonary fields have increased airiness, the diaphragm is flattened. The ribs are positioned more horizontally. Normally, the front segments of seven ribs are visible in the X-ray, but here there are nine.</p> <p>3. Chronic obstructive pulmonary disease (COPD).</p> <p>4. Spirometry with bronchodilation test, body plethysmography, determination of the level of alpha-1-antitrypsin in blood serum.</p>
2	<p>What percussion sound appears in compression atelectasis?</p> <p>A) dull or blunted</p> <p>B) clear pulmonary</p> <p>C) tympanic</p> <p><b>D) dull and tympanic</b></p> <p>E) hyperresonant</p>
3	<p>What kind of method is patients' questioning?</p> <p>a) physical;</p> <p><b>b) subjective;</b></p> <p>c) objective;</p> <p>d) additional;</p> <p>e) paraclinical.</p>
4	<p>What is the optimal place to listen to the first heart sound?</p> <p>a) II intercostal space to the left and right of the sternum;</p> <p>b) the apex of the heart II to the left of the sternum;</p> <p><b>c) the apex of the heart, the base of the xiphoid process;</b></p> <p>d) the base of the xiphoid process, II intercostal space to the right of the sternum;</p> <p>e) the apex of the heart II intercostal space to the right of the sternum.</p>
<b>Variant 3</b>	
1	<p>The patient's face is pale and cyanotic, the eyes are deeply sunken, the cornea is dull, the facial features are haggard, the nose is pointed, the face is covered with cold sweat.</p> <p><i>Questions:</i></p> <p><i>Which disease can be described using this eponymous name of this facial expression?</i></p> <p><b>Answer:</b> This person is described by Hippocrates and is known as the Hippocratic face (facies Hippocratica). It is observed in extremely serious condition (shock, diffuse peritonitis)</p>
2	<p>Explain the origin of angular stomatitis and skin cracks detected during a general examination:</p> <p>A) hemorrhagic syndrome</p> <p>B) dehydration</p> <p>C) hyperestrogenemia</p> <p><b>D) sideropenic syndrome</b></p> <p>E) violation of synthetic liver function</p>
3	<p>The accumulation of edematous fluid in the abdominal cavity is called:</p> <p><b>a) ascites;</b></p> <p>b) hydropericardium; c ) hydrothorax;</p> <p>d) hyposarca;</p> <p>e) swelling</p>
4	<p>What are the main characteristic of the first heart sound?:</p> <p>a) opening of a-v valves;</p>

	<p>b) <b>closing of a-v valves;</b>  c) opening of semilunar valves;  d) closure of semilunar valves;  e) oscillation of the vascular wall.</p>
<b>Variant 4</b>	
1	<p>The patient is sitting with his hands on the bed, his legs are lowered down. There is pronounced acrocyanosis, hyposarca.  <i>Questions:</i>  1. <i>What is the name of the position that the patient takes?</i>  2. <i>Which system is characterized by the disease and data revealed during the general examination?</i>  3. <i>Why does this position make the patient's condition easier?</i>  <b>Answer:</b> <i>The patient is in a forced position – orthopnea. This position is taken by patients suffering from severe circulatory insufficiency.</i>  <i>In the orthopnea position, there is some redistribution of blood flow, the venous return of blood to the heart decreases, the small circulatory circle is unloaded, which is manifested by a decrease in shortness of breath. The patient's attempt to lie down (take a horizontal position) causes a sharp increase in shortness of breath, suffocation even</i></p>
2	<p>Swelling in cirrhosis of the liver may be caused by:  A) an increase in the protein content in the blood serum  B) increased hyaluronidase activity in blood serum  <b>C) a decrease in the content of albumins in the blood</b>  D) decrease in the amount of aldosterone in the blood serum  E) increased bilirubin content in the blood</p>
3	<p>In the respiratory system diseases, chest pain indicates:  <b>a) involvement of the pleura in the process;</b>  b) spasm of small bronchi; c  ) accumulation of exudate in the alveoli;  d) all of the above.</p>
4.	<p>The upward shift of the upper boundary is noted when:  a) dilation of the left atrium;  <b>b) dilation of the left ventricle;</b> c  ) dilation of the right ventricle;  d) dilation or aneurysm of the ascending part of the pulmonary aorta or pulmonary artery.  e) dilation of the right atrium.</p>
<b>Variant 5</b>	
1	<p>Heart apex: a weakened first tone, accent and splitting of the second sound on the pulmonary artery, a systolic murmur is heard spreading to the left axillary region.  <i>Questions:</i>  1. <i>What kind of damage to the heart or blood vessels is characterized by the described symptoms?</i>  2. <i>What can be detected by palpation and percussion of the heart?</i>  3. <i>What additional examinations should be carried out?</i>  <b>Answer:</b> <i>1. The described symptoms describe mitral valve insufficiency.</i>  <i>2. During palpation, the apical thrust is shifted to the left. Percutorially, the boundaries of relative dullness are also increased to the left.</i>  <i>3. Additionally, it is necessary to carry out: ECG, Echo-KG, heart X-ray with esophagus fluoroscope.</i></p>
2	<p>What clinical situation is characterized by the following variants of changes in the boundaries of relative heart dullness: the right border is 1 cm to the right of the edge of the sternum, the left one is 2 cm outward from the left midclavicular line, the upper one</p>

	<p>is the II rib?</p> <p>A) mitral stenosis <b>B) mitral insufficiency</b> C) tricuspid valve insufficiency D) aortic defects E) the norm</p>
3	<p>Three-layer sputum is typical for:</p> <p>a) lungs emphysema; b) acute bronchitis; c) croup pneumonia; <b>d) chronic suppurative diseases.</b></p>
4	<p>The pulsation of the carotid arteries (carotid pulse):</p> <p>a) stagnation of blood in the veins of the large circulatory system; b) blood injection into the systole from the right ventricle into the right atrium and jugular veins; <b>c) a significant increase in pulse pressure;</b> d) severe hypertrophy and dilatation of the ventricles; e) decrease in pulse pressure.</p>



