MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION

MINISTRY OF SCIENCE, HIGHER EDUCATION AND INNOVATION OF THE KYRGYZ REPUBLIC

Kyrgyz-Russian Slavic University

named after the first President of the Russian Federation B.N. Yeltsin

FUND OF ASSESSMENT TOOLS (FAT)

Discipline: PROPAEDEUTICS OF INTERNAL DISEASES

Assigned to Department	Therapy No. 1 (Pediatrics and Dentistry)
Curriculum Code	310501_26_1 ld in.plx
Specialty (KR)	560001 — General Medicine (for international students)
Qualification	Doctor
Form of Study	Full-time
Total Credits	10 ZET (300 hours)
Year / Semesters	3rd year, Semesters 3–4
Duration of Study	5 years
Preparation Year	2026
Control Types	Credit – Semester 3 | Examination – Semester 4

The fund of assessment tools is intended to control the knowledge of students in the direction of training (specialty) General Medicine in the discipline "PROPAEDEUTICS OF INTERNAL DISEASES"

The fund of assessment tools was considered and approved at the meeting of the Department of FAMILY MEDICINE AND THERAPY

protocol No. 1 dated 29.08.2026

Head of Department
Therapy-1 of Pediatrics and Dental specialties _ _Suranova G.Zh.

Executors
Candidate of Medical Sciences, Associate Professor _ _Suranova G.Zh.

1. COMPETENCIES FORMED THROUGH THE DISCIPLINE

NOTE: Propaedeutics of Internal Diseases applies exclusively a SYNDROMIC approach. Students at the 3rd year level identify and characterise syndromes only — nosological (disease) diagnoses are not formulated.

PC-8: Diagnostic Algorithms — Syndrome Identification and Documentation

Capable and ready to use diagnostic algorithms for detection of syndromes in diseases of internal organs, emergency and life-threatening conditions, based on results of clinical, laboratory and instrumental investigations of organs, systems and the organism as a whole.

Level	Know	Be Able To	Master	Assessment Tools
Level 1	Clinical manifestations of the main syndromes of internal diseases (pain, dyspeptic, asthenic, haemorrhagic, anaemic, heart failure, respiratory failure syndromes)	Collect medical history and life history considering risk factors; perform objective patient examination within syndromic framework	Skills of physical examination (palpation, percussion, auscultation of organs and systems)	Block A: Tests on syndrome identification; oral questioning on history-taking and physical examination
Level 2	Diagnostic algorithms for emergency and life-threatening syndromes (acute heart failure syndrome, shock syndrome, coma syndrome, acute haemorrhage syndrome)	Interpret results of clinical, laboratory and instrumental investigations (ECG, X-ray, complete blood count, biochemistry) to characterise syndromes	Skills of determining basic vital signs (blood pressure, pulse, respiratory rate, oxygenation) and relating them to syndromes	Block B: Situational cases — history-taking, syndrome analysis, lab interpretation
Level 3	Classification of syndromes according to ICD-10/ICD-11; principles of formulating syndromic preliminary diagnosis	Formulate preliminary syndromic diagnosis; compose examination plan; complete medical documentation	Skills of medical documentation completion (case history, epicrisis, diagnostic algorithm) using syndromic terminology	Block C: Practice tasks; Block D: Certification questions; case history defense

2. LEARNING OUTCOMES OF THE DISCIPLINE

2.1. KNOW:

- Methods of collecting anamnesis, general and physical examination of the patient
- The main syndromes of internal diseases and their diagnostic criteria
- Methods of laboratory and instrumental examination (ECG, ultrasound, X-ray, spirography)
- Health indicators of the population at the level of health care facilities and principles of epidemiological analysis
- Regulatory documentation of healthcare of the Kyrgyz Republic and international clinical guidelines
- Fundamentals of medical psychology, deontology and doctor-patient communication

2.2. BE ABLE TO:

- Conduct interviews, physical examinations and clinical examinations of adults
- Interpret the results of laboratory and instrumental tests
- Formulate a syndromic diagnosis based on clinical and laboratory data
- Fill out medical documentation (medical history, outpatient card)
- Apply clinical protocols of the Ministry of Health of the Kyrgyz Republic and international recommendations in practice
- Establish professional contact with patients of different ages and cultures

2.3. MASTER:

- Skills of percussion, auscultation, palpation of organs and determination of physical constants
- Experience in interpreting ECG, X-rays, spirograms and ultrasound results
- Skills of making a syndromic diagnosis, taking into account the pathology of organs and systems
- Ability to work with electronic databases of regulatory documents and critical assessment of clinical guidelines
- Skills of empathic communication, working in a medical team and resolving conflict situations
- Experience of culturally sensitive care and reflection on one's own professional activity

3. STRUCTURE OF ASSESSMENT TOOL BLOCKS

Block	Content	Competencies	Semester
Block A	MCQ tests on examination methods, syndromes, ICD-10, medical documentation; oral questioning on history-taking and physical examination	PC-8 (L1–L2): syndrome identification, vital sign assessment, history-taking	3, 4
Block B	Clinical situational cases: syndrome analysis, history-taking, lab and ECG interpretation, documentation tasks; essays	PC-8 (L1–L3): syndrome analysis, investigation interpretation, documentation	3, 4
Block C	Practice-oriented tasks: simulation scenarios, objective patient examination, syndrome formulation, case history writing and defense	PC-8 (L3): syndromic diagnosis formulation, documentation completion	4
Block D	Certification questions: comprehensive syndromic analysis, ECG and spirogram interpretation, practical skills demonstration	PC-8 (all levels): full competency assessment	4 (Exam)

4. DISTRIBUTION BY SEMESTERS

Semester	Control Type	Blocks Used	Competencies
3 (2.1)	Credit	Block A, Block B (partial)	PC-8 (L1–L2): syndrome identification, vital signs, history-taking, lab interpretation
4 (2.2)	Examination	Block A (final), Block B, Block C, Block D	PC-8 (all levels): full syndromic assessment, documentation, practical skills

5. TECHNOLOGY MAP OF THE DISCIPLINE

Semester 3 (Credit) — 18 weeks

Module	Topic	Control Type	Form of Control	Min	Max	Week
M1	BC-1: Subject and objectives of Propaedeutics. General and detailed patient examination. Medical ethics and deontology	Current	Frontal questioning, testing, practical skills, attendance	2	4	4
M1		Midterm	Oral/written questioning, situational case	6	10	
M2	BC-2: Respiratory organ examination. Pulmonary syndromes (bronchial obstructive, increased airiness, infiltration)	Current	Frontal questioning, testing, practical skills, attendance	2	4	7
M2		Midterm	Oral/written questioning, situational case	6	10	
M3	BC-3: Pulmonary syndromes (continued): atelectasis, pleural fluid, pneumothorax, respiratory failure syndromes; spirogram interpretation	Current	Frontal questioning, testing, practical skills, attendance	2	4	10
M3		Midterm	Oral/written questioning, situational case, spirogram interpretation	6	10	
M4	BC-4: Cardiovascular system examination. ECG principles. Hypertrophy, valvular, arrhythmia syndromes	Current	Frontal questioning, testing, practical skills, attendance	2	4	14
M4		Midterm	Oral/written questioning, situational case, ECG interpretation	6	10	
M5	BC-5: Cardiovascular syndromes: coronary insufficiency, arterial hypertension, heart failure. Case history defense	Current	Frontal questioning, testing, case history defense, attendance	2	4	16
M5		Midterm	Oral/written questioning,	6	10	

			defense of case history fragment			
TOTAL				**40**	**70**	
Midterm Control	Credit / Exam			**20**	**30**	
Semester Rating				**60**	**100**	

Semester 4 (Examination) — 18 weeks

Module	Topic	Control Type	Form of Control	Min	Max	Week
M6	BC-6: Gastrointestinal examination. Gastric secretory syndromes, cholestasis, jaundice syndromes; palpation technique	Current	Frontal questioning, testing, practical skills, attendance	2	4	5
M6		Midterm	Oral/written questioning, situational case	6	10	
M7	BC-7: Urinary system examination. Urinary, nephrotic, nephritic, renal hypertension, renal failure syndromes	Current	Frontal questioning, testing, practical skills, attendance	2	4	8
M7		Midterm	Oral/written questioning, situational case	6	10	
M8	BC-8: Haematopoietic system. Anaemia, haemorrhagic, DIC, hyperplastic syndromes	Current	Frontal questioning, testing, practical skills, attendance	2	4	12
M8		Midterm	Oral/written questioning, situational case	6	10	
M9	BC-9: Endocrine system. Hypothyroid, hyperthyroid, hyperglycaemia, hypoglycaemia syndromes	Current	Frontal questioning, testing, practical skills, attendance	2	4	14
M9		Midterm	Oral/written questioning, situational case	6	10	
M10	BC-10: Musculoskeletal system. Arthritic, arthrosis, rheumatological	Current	Frontal questioning, testing, practical skills, attendance	2	4	16

	syndromes. Pre-exam consultation					
M10		Midterm	Oral/written questioning, situational case	6	10	
TOTAL				**40**	**70**	
Midterm Control	Credit / Exam			**20**	**30**	
Semester Rating				**60**	**100**	

6. CASE HISTORY SECTION

6.1. General Requirements

The case history is the main document of the medical organisation, containing information about the patient, his/her disease, examination and treatment. Students must master skills of proper syndromic case history documentation in accordance with MoH KR orders.

6.2. Structure of Educational Case History

Section	Content	Requirements	Points
Title Page	Full name, age, sex, date of admission, ward, case number	Correct filling of all requisites	5
Complaints	Subjective sensations of patient at admission	Complete, sequential presentation; clarification of duration	10
Disease History	Development of current disease from onset to admission	Chronological sequence; connection with external factors	15
Life History	State of health prior to disease, heredity, social history	Systematic presentation; risk factor assessment	10
Objective Status	Data of physical examination	Sequence: general inspection, organs and systems; accuracy of formulations	20
Preliminary Syndromic Diagnosis	Syndromic diagnosis with justification	Logical construction; justification of each syndrome	20
Examination Plan	Laboratory and instrumental methods	Justification of appointments; correspondence to syndromic diagnosis	10
Treatment Plan	Etiotropic and pathogenetic therapy	Correspondence to syndrome; consideration of contraindications	10

6.3. Procedure for Defending Case History

- Student observes the patient throughout the entire period of study at the department
- Case history is drawn up in accordance with the established form and using syndromic terminology only
- Case history is defended in the form of a report with presentation of clinical case
- Assessment criteria: completeness of history (25%), quality of physical examination (25%), correctness of syndromic diagnosis formulation (25%), justification of examination and treatment plan (25%)

7. STUDENT'S INDEPENDENT WORK

Activity	Time/week	Notes
Study of lecture notes on the day of the lecture	10–15 min	Immediate repetition after lecture
Repetition of notes before the next lecture	10–15 min	Active reproduction of main provisions
Study of theoretical material from textbooks	1 hour	Work with main and additional literature
Preparation for practical classes	2 hours	Study key concepts; prepare for problem-solving
TOTAL	**3 h 30 min**	**Regular daily work**

8. TYPICAL ASSESSMENT TASKS WITH ANSWERS

IMPORTANT: All test questions and clinical cases apply a SYNDROMIC approach exclusively. Nosological diagnoses are not used in Propaedeutics of Internal Diseases.

CONTROL SECTION No. 1

Section 1: Subject and Objectives of Propaedeutics. General Examination of the Patient

BLOCK A — Reproductive Level (Knowledge) | Time: 30 min

Oral Questions (3–4 selected):

1. What are the main methods of physical examination in propaedeutics of internal diseases?
2. Describe general patient examination: methodology and diagnostic value.
3. List pathological forms of the thorax and their clinical significance.
4. Describe the method of body temperature measurement and types of temperature curves.
5. Name degrees of obesity by BMI and the method of its calculation.
6. Describe medical ethics and deontology in clinical practice.

MCQ Tests (closed type):

Q1. Barrel-shaped thorax, horizontal ribs, reduced respiratory excursion bilaterally. Which syndrome does this characterise?

A) Lung infiltration syndrome
B) Syndrome of increased airiness of the lungs (emphysema syndrome)
C) Pleural fluid syndrome
D) Bronchial obstructive syndrome
E) Cavernous syndrome

CORRECT ANSWER: B) Syndrome of increased airiness of the lungs (emphysema syndrome)
Barrel-shaped thorax with horizontal ribs and reduced excursion = hyperinflation = emphysema syndrome. Excess air is trapped in the lung parenchyma causing irreversible structural changes and altered thorax configuration.

Q2. Body temperature 39.2°C, daily fluctuations ≤ 1°C for 7 days. Which temperature curve syndrome?

A) Remittent fever syndrome
B) Subfebrile syndrome
C) Constant (continued) fever syndrome
D) Intermittent fever syndrome
E) Hectic fever syndrome

CORRECT ANSWER: C) Constant (continued) fever syndrome
Sustained fever above 38°C with daily fluctuations not exceeding 1°C = constant fever syndrome. Characteristic of lobar pneumonia syndrome and typhoid fever.

Q3. Patient: height 170 cm, weight 92 kg. BMI = 92/(1.70)² ≈ 31.8. Which syndrome?

A) Overweight syndrome (BMI 25–29.9)
B) Obesity syndrome Grade I (BMI 30–34.9)
C) Obesity syndrome Grade II (BMI 35–39.9)
D) Obesity syndrome Grade III (BMI ≥40)
E) Normal (BMI 18.5–24.9)

CORRECT ANSWER: B) Obesity syndrome Grade I (BMI 30–34.9)
BMI ≈ 31.8 falls in the 30–34.9 range = obesity syndrome Grade I. This syndrome is a major risk factor for arterial hypertension syndrome, metabolic syndrome and coronary insufficiency syndrome.

Q4. The right side of the chest lags behind in breathing, breath sounds absent on the right. Which syndrome is most probable?

A) Emphysema syndrome
B) Bronchial obstructive syndrome
C) Lung infiltration syndrome
D) Pleural fluid syndrome or atelectasis syndrome
E) Cavernous syndrome

CORRECT ANSWER: D) Pleural fluid syndrome or atelectasis syndrome
Unilateral lag in breathing + absent breath sounds = restriction of lung movement by external compression (pleural fluid syndrome) or internal collapse (atelectasis syndrome).

BLOCK B — Reconstructive Level (Application) | Time: 60 min

CLINICAL CASE 1

Patient M., 43 years, complaints of fever up to 38.8°C for 6 days, chills, headache, weakness. On examination: flushed moist skin. RR 20/min. Pulse 94 bpm, rhythmic. BP 120/80 mmHg. Lungs — vesicular breathing, no adventitious sounds.

Questions:

7. Determine the type of temperature curve syndrome and characterise it. (5 points)
8. Which additional examination methods should be ordered? (5 points)
9. Compose an examination plan with justification of each method. (10 points)

ANSWERS:

1. Temperature curve syndrome: Remittent fever syndrome — daily fluctuations exceed 1°C but temperature does not normalise. Six-day duration with chills indicates moderate severity febrile-intoxication syndrome. Characteristic of infectious-inflammatory syndromes.

2. Additional methods: complete blood count (leukocytosis, elevated ESR — inflammatory syndrome markers); chest X-ray (exclude pulmonary infiltration syndrome, pleural syndrome); urinalysis (exclude urinary syndrome); CRP, procalcitonin (systemic inflammatory response syndrome); blood cultures ×2 (aetiological verification).

3. Examination plan: (1) Complete blood count + ESR — assess inflammatory syndrome severity. (2) Chest X-ray — exclude pulmonary syndromes (infiltration, effusion). (3) Urinalysis — exclude urinary syndrome as source. (4) Biochemical panel (CRP, LDH, ALT, AST) — assess systemic inflammatory response syndrome. (5) Blood cultures ×2 — identify aetiological agent. (6) ECG — assess tachycardia syndrome and rule out cardiac complications. Syndromic conclusion: febrile-intoxication syndrome of moderate severity, probable infectious origin.

CONTROL SECTION No. 2

Section 2: Respiratory System Examination. Pulmonary Syndromes

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

10. Describe the percussion method for the lungs and diagnostic value of percussion sounds.
11. Describe the auscultation method and normal respiratory sounds.
12. Name pathological breath sounds and their diagnostic significance.
13. Describe bronchial obstructive syndrome: pathogenesis, physical signs.
14. Describe syndrome of increased airiness of the lungs (emphysema syndrome).
15. What is the diagnostic value of spirography?

MCQ Tests:

Q1. On percussion: dullness over the right lower lobe. On auscultation: coarse moist wheezes. Which syndrome?

A) Emphysema syndrome
B) Pneumothorax syndrome
C) Lung infiltration syndrome
D) Bronchial obstructive syndrome
E) Cavernous syndrome

CORRECT ANSWER: C) Lung infiltration syndrome
Dullness on percussion (increased tissue density) + coarse moist wheezes (fluid in bronchioles and alveoli) = lung infiltration syndrome. This syndrome includes alveolar exudate, consolidation, cellular infiltration of lung parenchyma.

Q2. Auscultation: prolonged expiratory wheeze, diffuse dry wheezes bilaterally. Which syndrome?

A) Bronchial obstructive syndrome
B) Lung infiltration syndrome
C) Pleural fluid syndrome
D) Pulmonary insufficiency syndrome
E) Respiratory failure syndrome

CORRECT ANSWER: A) Bronchial obstructive syndrome
Prolonged expiration + diffuse dry wheezes = narrowed airway lumen = bronchial obstructive syndrome. Mechanism: bronchospasm, mucus hypersecretion, mucosal oedema — all reduce lumen and create turbulent airflow producing wheezes.

Q3. X-ray: increased lung field transparency, widening of retrosternal space, flattening of diaphragm. Which syndrome?

A) Lung infiltration syndrome
B) Pleural fluid syndrome
C) Syndrome of increased airiness of the lungs (emphysema syndrome)
D) Cavernous syndrome
E) Atelectasis syndrome

CORRECT ANSWER: C) Syndrome of increased airiness of the lungs (emphysema syndrome)
Increased transparency + widened retrosternal space + flat diaphragm = hyperinflation = emphysema syndrome. Loss of lung elastic recoil leads to air trapping and irreversible alveolar distension.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient K., 60 years, productive cough with yellow-green sputum, fever 38.6°C, right-sided chest pain on coughing. Examination: percussion — dullness over right lower zone; auscultation — weakened breathing, coarse moist wheezes right lower lobe.

Questions:

16. Which syndrome is characteristic for this patient? (5 points)
17. Which additional examinations should be ordered? (5 points)
18. Compose an examination plan with justification. (10 points)

ANSWERS:

1. Characteristic syndrome: Lung infiltration syndrome (right lower lobe localisation) + febrile-intoxication syndrome. Evidence: productive cough with purulent sputum (bronchial hypersecretion syndrome), high fever (febrile syndrome), dullness on percussion (consolidation), coarse moist wheezes (alveolar exudate) — all consistent with alveolar infiltration syndrome.
2. Additional examinations: chest X-ray (confirm infiltration syndrome, define extent); complete blood count + ESR (inflammatory syndrome severity); sputum microscopy and culture (pathogen identification); blood cultures; CRP, procalcitonin (systemic inflammatory response syndrome); SpO2 (respiratory failure syndrome screening).
3. Examination plan: (1) Chest X-ray PA and lateral — gold standard for confirming and localising infiltration syndrome. (2) Complete blood count + ESR — assess inflammatory syndrome severity. (3) Sputum Gram stain + culture — aetiological characterisation. (4) Biochemical panel (CRP, LDH, albumin) — systemic inflammatory response syndrome severity. (5) SpO2 / arterial blood gas — assess respiratory failure syndrome. (6) Blood cultures ×2 — exclude bacteraemic syndrome. Syndromic conclusion: right lower lobe infiltration syndrome + febrile-intoxication syndrome, moderate severity.

CONTROL SECTION No. 3

Section 3: Pulmonary Syndromes (Continued). Spirogram Interpretation

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

19. Describe atelectasis syndrome (obturation and compression types).
20. Describe pleural fluid syndrome: physical signs and diagnostic criteria.
21. Describe pneumothorax syndrome: pathogenesis and clinical picture.
22. Describe respiratory failure syndrome and its degrees.
23. What are the types of ventilation disorders on spirography?
24. Describe chronic pulmonary hypertension syndrome.

MCQ Tests:

Q1. Right side lags in breathing, percussion — absolute dullness (flatness), breath sounds completely absent on the right. Which syndrome?

A) Pleural fluid syndrome
B) Pneumothorax syndrome
C) Lung infiltration syndrome
D) Bronchial obstructive syndrome
E) Emphysema syndrome

CORRECT ANSWER: A) Pleural fluid syndrome
Complete absence of breath sounds + flatness on percussion + lag of affected side = large pleural fluid syndrome. Accumulated fluid compresses lung, preventing aeration and sound transmission.

Q2. Spirography: FEV1/FVC = 62%, RV increased. Normal FVC. Which ventilation disorder syndrome?

A) Restrictive ventilation disorder syndrome
B) Obstructive ventilation disorder syndrome
C) Mixed ventilation disorder syndrome
D) Diffusion disorder syndrome
E) Normal spirogram

CORRECT ANSWER: B) Obstructive ventilation disorder syndrome
FEV1/FVC below 70% with normal or near-normal FVC = obstruction to expiratory airflow = obstructive ventilation disorder syndrome. Increased RV confirms air trapping. Characteristic of bronchial obstructive syndrome.

Q3. Spirography: FVC 55% predicted, FEV1 56% predicted, FEV1/FVC normal (>70%). Which syndrome?

A) Obstructive ventilation disorder syndrome
B) Restrictive ventilation disorder syndrome
C) Mixed ventilation disorder syndrome
D) Normal
E) Diffusion disorder syndrome

CORRECT ANSWER: B) Restrictive ventilation disorder syndrome
Both FVC and FEV1 reduced proportionally with normal FEV1/FVC ratio = restriction of lung volume = restrictive ventilation disorder syndrome. Caused by loss of functional lung tissue, fibrosis, pleural restriction.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient N., 64 years, smoker 45 pack-years, progressive dyspnoea on minimal exertion, morning cough with mucous sputum. Barrel-shaped thorax. Percussion: box sound bilaterally. Auscultation: weakened vesicular breathing, prolonged expiration. Spirography: FEV1/FVC 55%, RV significantly increased.

Questions:

25. Which syndrome is characteristic? (5 points)
26. Interpret the spirography data. (5 points)
27. Conduct differential syndromic analysis of obstructive syndrome of various origins. (10 points)

ANSWERS:

1. Characteristic syndrome: Bronchial obstructive syndrome (severe) + emphysema syndrome. Evidence: barrel thorax (emphysema), box percussion sound (air trapping), prolonged expiration (obstruction), weakened breathing (hyperinflation), productive cough (bronchial hypersecretion syndrome).
2. Spirography interpretation: FEV1/FVC 55% — significantly below 70% threshold = severe obstructive ventilation disorder syndrome. Markedly increased RV confirms significant air trapping. Combined with barrel thorax: obstructive-emphysematous syndrome (irreversible, indicating fixed airway obstruction).
3. Differential syndromic analysis: (a) Bronchospastic syndrome (bronchial asthma): episodic, reversible obstruction, responds to bronchodilators, eosinophilic inflammation syndrome — typically FEV1/FVC normalises after bronchodilator; (b) Bronchial obstructive syndrome with emphysema (COPD pattern): progressive irreversible obstruction, smoking history, emphysema syndrome, no full reversibility; (c) Cardiac asthma syndrome: orthopnoea, left ventricular dysfunction syndrome, bilateral moist crepitations (not dry wheezes), responds to diuretics; (d) Endobronchial obstruction syndrome: asymmetric, localised wheezes, alarm symptoms (haemoptysis syndrome). This patient: irreversible obstructive syndrome with emphysema syndrome — classic COPD-pattern.

CONTROL SECTION No. 4

Section 4: Cardiovascular System Examination. Syndromes in Cardiology

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

28. Describe properties of the arterial pulse and method of assessment.
29. Describe the method of determining relative and absolute cardiac dullness borders.
30. List main heart sounds and the mechanism of their formation.
31. Describe heart murmur syndromes: systolic and diastolic.
32. Describe ECG criteria of myocardial hypertrophy syndromes.
33. What are the ECG criteria of atrial and ventricular hypertrophy syndromes?

MCQ Tests:

Q1. ECG: R in V5 = 30 mm; S in V1 = 18 mm; strain pattern in I, aVL, V5–V6. Which syndrome?

A) Right ventricular hypertrophy syndrome
B) Left ventricular hypertrophy syndrome
C) Biventricular hypertrophy syndrome
D) Left atrial enlargement syndrome
E) Right atrial enlargement syndrome

CORRECT ANSWER: B) Left ventricular hypertrophy syndrome
Sokolow-Lyon index (R V5 + S V1 = 48 mm, > 35 mm threshold) + strain pattern in lateral leads = left ventricular hypertrophy syndrome. This ECG syndrome is caused by increased LV muscle mass from pressure overload (arterial hypertension syndrome, aortic stenosis syndrome).

Q2. Holosystolic murmur at the cardiac apex, conducted to the left axillary region. Which auscultatory syndrome?

A) Mitral stenosis syndrome (auscultatory pattern)
B) Mitral regurgitation syndrome (auscultatory pattern)
C) Aortic stenosis syndrome (auscultatory pattern)
D) Aortic regurgitation syndrome (auscultatory pattern)
E) Tricuspid regurgitation syndrome (auscultatory pattern)

CORRECT ANSWER: B) Mitral regurgitation syndrome (auscultatory pattern)
Holosystolic murmur at the apex with radiation to the left axilla = mitral regurgitation syndrome. During systole, blood regurgitates from LV back into LA through incompetent mitral valve, producing this characteristic murmur pattern.

Q3. ECG: R in V1 = 12 mm, right axis deviation, S in V5 = 14 mm. Which syndrome?

A) Left ventricular hypertrophy syndrome
B) Right ventricular hypertrophy syndrome
C) Left atrial enlargement syndrome
D) Left bundle branch block syndrome
E) Right bundle branch block syndrome

CORRECT ANSWER: B) Right ventricular hypertrophy syndrome
Tall R in V1 (>7 mm) + right axis deviation + deep S in V5 = right ventricular hypertrophy syndrome. Caused by pressure overload of the RV — characteristic of pulmonary hypertension syndrome, pulmonary heart syndrome.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient B., 48 years, episodic chest pain on exertion, radiating to the left arm, relieved by rest within 5 minutes. BP 150/95 mmHg. Pulse 84 bpm. ECG: LV hypertrophy syndrome pattern, horizontal ST depression 1.5 mm in V4–V6.

Questions:

34. Which syndromes are characteristic? (5 points)
35. Which additional examinations should be ordered? (5 points)
36. Compose an examination plan with justification. (10 points)

ANSWERS:

1. Characteristic syndromes: Coronary insufficiency syndrome (effort angina pattern — exercise-induced chest pain, relieved by rest, typical radiation) + arterial hypertension syndrome (BP 150/95) + left ventricular hypertrophy syndrome (ECG) + myocardial ischaemia syndrome (horizontal ST depression in lateral leads).
2. Additional examinations: stress ECG (treadmill/bicycle) — provoke and quantify coronary insufficiency syndrome; echocardiography — assess LV hypertrophy syndrome degree, wall motion; lipid profile — atherogenic syndrome characterisation; blood glucose and HbA1c — metabolic syndrome; 24-hour Holter ECG — assess silent ischaemia syndrome; coronary CT angiography (if indicated).
3. Examination plan: (1) 12-lead ECG at rest — confirm hypertrophy and ischaemia syndromes. (2) Echocardiography — LV mass, wall thickness, EF, wall motion syndrome. (3) Exercise stress test (treadmill) — objectify coronary insufficiency syndrome, determine threshold. (4) Lipid profile (total cholesterol, LDL, HDL, TG) — atherogenic syndrome severity. (5) Fasting glucose, HbA1c — metabolic syndrome. (6) 24-hour BP monitoring — confirm arterial hypertension syndrome, phenotype. Syndromic conclusion: coronary insufficiency syndrome (effort pattern) + arterial hypertension syndrome + LV hypertrophy syndrome + myocardial ischaemia syndrome.

CONTROL SECTION No. 5

Section 5: Cardiovascular Syndromes (Continued). Case History Defense

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

37. Describe arrhythmia syndrome: classification and ECG criteria.
38. Describe conduction disturbance syndromes: AV block, bundle branch block.
39. Name ECG criteria of acute myocardial infarction syndrome and localisation.
40. Describe heart failure syndrome: left-sided, right-sided, total.
41. Describe arterial hypertension syndrome and vascular insufficiency syndrome.

MCQ Tests:

Q1. ECG: absent P waves, irregular ventricular rhythm, chaotic atrial oscillations 400–600/min. Which syndrome?

A) Sinus tachycardia syndrome
B) Ventricular extrasystolia syndrome
C) Atrial fibrillation syndrome
D) Atrial flutter syndrome
E) Paroxysmal supraventricular tachycardia syndrome

CORRECT ANSWER: C) Atrial fibrillation syndrome
No P waves + chaotic f-waves (400–600/min) + irregular ventricular response = atrial fibrillation syndrome (absolute arrhythmia). The AV node conducts impulses irregularly, producing variable R-R intervals.

Q2. ECG: ST elevation > 2 mm in leads V1–V4 with reciprocal depression in II, III, aVF. Which syndrome?

A) Effort angina syndrome
B) Acute anterior myocardial infarction syndrome (STEMI)
C) Chronic coronary insufficiency syndrome
D) Fibrinous pericarditis syndrome
E) Pulmonary heart syndrome

CORRECT ANSWER: B) Acute anterior myocardial infarction syndrome (STEMI)
ST elevation in V1–V4 (anterior leads) with reciprocal changes in inferior leads = anterior STEMI syndrome. Transmural ischaemia of the anterior LV wall (LAD territory) causes current of injury pattern. The reciprocal ST depression in inferior leads confirms the syndrome.

Q3. ECG: PR interval 0.28 s, all P waves followed by QRS. Which syndrome?

A) Complete AV block syndrome
B) Mobitz type II AV block syndrome
C) First-degree AV block syndrome
D) Bundle branch block syndrome
E) Sinus bradycardia syndrome

CORRECT ANSWER: C) First-degree AV block syndrome
PR > 0.20 s (0.28 s) with all P waves conducted = first-degree AV block syndrome (conduction delay in the AV node). All impulses are transmitted, so no dropped beats — distinguished from second- and third-degree block syndromes.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient S., 58 years, intense squeezing retrosternal pain at rest for 50 minutes, radiating to left arm and jaw, not relieved by 3 nitroglycerin tablets. Profuse sweating, nausea. BP 100/70 mmHg, pulse 52 bpm irregular. ECG: ST elevation 3 mm in II, III, aVF; reciprocal ST depression in I, aVL, V1–V4. Troponin I: positive.

Questions:

42. Which syndromes are characteristic? (5 points)
43. Determine localisation of myocardial injury by ECG. (5 points)
44. Compose a case history fragment: complaints, objective status, preliminary syndromic diagnosis with justification. (10 points)

ANSWERS:

1. Characteristic syndromes: (a) Acute myocardial infarction syndrome (inferior STEMI) — pain > 30 min, no response to nitrates; (b) Acute coronary syndrome (current of injury syndrome) — ST elevation in inferior leads; (c) Myocardial cytolysis syndrome — troponin I positive; (d) Bradyarrhythmia syndrome — pulse 52, irregular (likely inferior MI with vagal activation ± AV conduction disturbance syndrome); (e) Arterial hypotension syndrome — BP 100/70 (haemodynamic instability).
2. Localisation: ST elevation in II, III, aVF = inferior (diaphragmatic) wall of LV, supplied by right coronary artery (RCA). Reciprocal ST depression in I, aVL = high lateral wall reciprocal changes. Inferior myocardial infarction syndrome (RCA territory).
3. Case history fragment — COMPLAINTS: intense squeezing retrosternal pain at rest, 50 min, radiation to left arm and jaw; unresponsive to 3 nitroglycerin tablets; profuse sweating; nausea; palpitations. OBJECTIVE STATUS: BP 100/70 (arterial hypotension syndrome); pulse 52 bpm, irregular (bradyarrhythmia syndrome); moist pale skin (peripheral circulation disorder syndrome). ECG: ST elevation II, III, aVF (current of injury syndrome, inferior). Troponin I+. PRELIMINARY SYNDROMIC DIAGNOSIS: Acute inferior myocardial infarction syndrome. Justification: rest pain > 30 min not responding to nitrates (acute ischaemia syndrome) + ST elevation in inferior leads (current of injury syndrome, inferior wall) + positive troponin I (myocardial cytolysis syndrome) + bradyarrhythmia syndrome (vagal reflex common in inferior MI).

CONTROL SECTION No. 6

Section 6: Gastrointestinal Examination. Syndromes in Gastroenterology

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

45. Describe the method of abdominal organ palpation (Obraztsov-Strazhesko technique).
46. Describe liver percussion by Kurlov and its diagnostic value.
47. List main syndromes in gastroenterology.
48. Describe gastric hypersecretion syndrome and gastric hyposecretion syndrome.
49. Describe jaundice syndromes (haemolytic, parenchymatous, obstructive).
50. Describe portal hypertension syndrome and hepatocellular failure syndrome.

MCQ Tests:

Q1. Epigastric pain 1.5–2 hours after eating, relieved by food intake, nocturnal pain. Which syndrome?

A) Gastric hypersecretion syndrome
B) Gastric hyposecretion syndrome
C) Gastric evacuation disorder syndrome
D) Maldigestion syndrome
E) Intestinal dyspepsia syndrome

CORRECT ANSWER: A) Gastric hypersecretion syndrome
Late postprandial pain (1.5–2 h) relieved by food intake + nocturnal pain = gastric hypersecretion syndrome (hyperacid syndrome). Excess acid causes pain in the fasted state; food acts as buffer. Typical pattern of duodenal peptic ulcer syndrome.

Q2. Jaundice, intense pruritus, dark urine, completely acholic (white) stools. Which syndrome?

A) Haemolytic jaundice syndrome
B) Parenchymatous (hepatocellular) jaundice syndrome
C) Obstructive (cholestatic) jaundice syndrome
D) Cytolysis syndrome
E) Portal hypertension syndrome

CORRECT ANSWER: C) Obstructive (cholestatic) jaundice syndrome
Intense pruritus + dark urine + completely acholic stools + jaundice = obstructive (cholestatic) jaundice syndrome. Biliary duct obstruction prevents bilirubin excretion into bowel (acholia) and causes regurgitation into blood (conjugated hyperbilirubinaemia syndrome) and urine (bilirubinuria).

Q3. Right upper quadrant pain radiating to the right shoulder, nausea, vomiting, positive Murphy's sign. Which syndrome?

A) Gastric hypersecretion syndrome
B) Gallbladder inflammation syndrome
C) Pancreatic exocrine syndrome
D) Portal hypertension syndrome
E) Hepatocellular failure syndrome

CORRECT ANSWER: B) Gallbladder inflammation syndrome
Right upper quadrant pain radiating to the right shoulder blade + nausea/vomiting + positive Murphy's sign = gallbladder inflammation syndrome. Inflammation of the gallbladder wall causes visceral pain referred to the right scapular region via phrenic nerve pathways.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient A., 40 years, epigastric pain 2 hours after eating, nocturnal pain relieved by milk. Last 4 days: intensification of pain, appearance of black tarry stools (melena), dizziness, weakness. Hb 88 g/L.

Questions:

51. Which syndromes are characteristic? (5 points)
52. Which additional examinations should be ordered? (5 points)
53. Compose an examination plan with justification. (10 points)

ANSWERS:

1. Characteristic syndromes: (a) Gastric hypersecretion syndrome — late postprandial and nocturnal pain, relief with milk (antacid effect); (b) Gastrointestinal bleeding syndrome (upper GI) — melena (black tarry stool = digested blood from upper GI source); (c) Pain abdominal syndrome — epigastric localisation, food-dependent; (d) Haemorrhagic anaemia syndrome — Hb 88 g/L (significant drop).
2. Additional examinations: Urgent FEGDS — identify bleeding syndrome source, assess lesion; haemogram (Hb, Ht, platelets) — assess haemorrhagic anaemia syndrome; coagulation panel — haemostasis syndrome; blood group and Rh factor; H. pylori test (CLO/breath test) — aetiological factor of hypersecretion syndrome; faecal occult blood test — confirm bleeding syndrome.
3. Examination plan: (1) Urgent FEGDS — identify and if possible endoscopically control bleeding syndrome source. (2) Complete blood count — assess haemorrhagic anaemia syndrome severity (Hb, Ht). (3) Coagulation (PT, aPTT, fibrinogen) — haemostasis syndrome. (4) Blood group + Rh factor — preparation for transfusion if needed. (5) H. pylori rapid urease test (CLO) — detect aetiological factor of hypersecretion syndrome. (6) Biochemical (ALT, AST, bilirubin, albumin) — baseline hepatic function, assess hepatocellular syndrome. Syndromic conclusion: gastric hypersecretion syndrome + gastrointestinal bleeding syndrome (upper source) + haemorrhagic anaemia syndrome of moderate severity.

CONTROL SECTION No. 7

Section 7: Urinary System Examination. Syndromes in Nephrology

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

54. Describe the method of kidney palpation and CVA tenderness.
55. List main syndromes in nephrology.
56. Characterise oedematous syndrome and nephrotic syndrome — differences.
57. Describe urinary syndrome (nephritic syndrome).
58. Describe renal hypertension syndrome.
59. Name syndromes of acute and chronic renal failure and differences.

MCQ Tests:

Q1. Morning facial oedema, decreased diuresis 400 mL/day, BP 170/110 mmHg. Urinalysis: protein 7 g/L, erythrocyte casts. Which primary syndrome?

A) Cardiac oedema syndrome
B) Nephrotic syndrome
C) Urinary (nephritic) syndrome
D) Renal hypertension syndrome
E) Chronic renal failure syndrome

CORRECT ANSWER: C) Urinary (nephritic) syndrome
Haematuria with casts + proteinuria + oliguria + hypertension = urinary (nephritic) syndrome. The erythrocyte casts confirm glomerular origin (RBCs passing through the damaged glomerular filter). Nephrotic syndrome differs by massive proteinuria > 3.5 g/day without haematuria and with hypoalbuminaemia.

Q2. Urinalysis: protein 5.8 g/L, no haematuria, hyaline and granular casts. Blood: albumin 24 g/L, cholesterol 9.1 mmol/L. Which syndrome?

A) Urinary (nephritic) syndrome
B) Nephrotic syndrome
C) Urinary tract infection syndrome
D) Isolated proteinuria syndrome
E) Normal

CORRECT ANSWER: B) Nephrotic syndrome
Massive proteinuria (>3.5 g/day equivalent) + hypoalbuminaemia (24 g/L) + hyperlipidaemia (cholesterol 9.1) + casts = nephrotic syndrome. The key tetrad: massive proteinuria + hypoalbuminaemia + hyperlipidaemia + oedema.

Q3. Blood: creatinine 420 μmol/L, BUN 22 mmol/L, GFR 14 mL/min. Anaemia Hb 78 g/L. Which syndrome?

A) Acute renal failure syndrome
B) Chronic renal failure syndrome (severe stage)
C) Nephrotic syndrome
D) Urinary tract infection syndrome
E) Renal hypertension syndrome

CORRECT ANSWER: B) Chronic renal failure syndrome (severe stage)

Markedly elevated creatinine (420 µmol/L) + severely reduced GFR (14 mL/min, Stage 5 approaching) + normochromic anaemia (decreased EPO production) = chronic renal failure syndrome, severe degree. The anaemia is a marker of chronicity (reduced erythropoietin synthesis).

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient R., 26 years, generalised oedema (face, legs, abdomen), decreased diuresis, BP 175/110 mmHg. Urinalysis: protein 8.2 g/L, hyaline and granular casts, no haematuria. Blood: total protein 42 g/L, albumin 22 g/L, cholesterol 9.8 mmol/L, creatinine 110 µmol/L.

Questions:

60. Which syndromes are characteristic? (5 points)
61. Which additional examinations should be ordered? (5 points)
62. Compose an examination plan with differential syndromic justification. (10 points)

ANSWERS:

1. Characteristic syndromes: (a) Nephrotic syndrome — massive proteinuria (8.2 g/L), hypoproteinaemia (42 g/L), hypoalbuminaemia (22 g/L), hyperlipidaemia (cholesterol 9.8 mmol/L), generalised oedema (anasarca); (b) Oedematous syndrome (renal origin) — generalised, morning facial predominance, pitting; (c) Arterial hypertension syndrome — BP 175/110; (d) Atherogenic syndrome — hypercholesterolaemia 9.8 mmol/L.

2. Additional examinations: 24-hour proteinuria — quantify nephrotic syndrome; renal ultrasound + Doppler — structural changes, renal hypertension syndrome evaluation; immunological panel (ANA, anti-dsDNA, ANCA, complement C3/C4) — systemic immune syndrome (lupus, vasculitis); coagulation — thrombosis syndrome risk in nephrotic syndrome; 24-hour BP monitoring — arterial hypertension syndrome pattern; kidney biopsy (gold standard) — morphological verification.

3. Examination plan: (1) 24-hour urine protein — confirm and quantify nephrotic syndrome. (2) GFR (CKD-EPI) — renal function syndrome baseline. (3) Renal ultrasound + Doppler — structural evaluation, renal size, cortex thickness. (4) Immunological panel (ANA, anti-dsDNA, ANCA, complement) — exclude systemic lupus syndrome, vasculitis syndrome. (5) Coagulation (PT, aPTT, D-dimer) — thrombotic syndrome risk in nephrotic syndrome. (6) Lipid profile — complete atherogenic syndrome characterisation. Syndromic conclusion: nephrotic syndrome (severe) + oedematous syndrome (anasarca) + arterial hypertension syndrome + atherogenic syndrome; kidney biopsy indicated for morphological syndrome clarification.

CONTROL SECTION No. 8

Section 8: Haematopoietic System Examination. Syndromes in Haematology

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

63. Characterise complete blood count parameters in normal state and in anaemia syndrome.
64. Describe iron-deficiency anaemia syndrome: circulatory-hypoxic, sideropenic, haematological components.
65. Describe B12-deficiency anaemia syndrome: neurological, gastroenterological, haematological components.
66. Describe haemolytic syndrome and its laboratory markers.
67. Describe haemorrhagic syndrome: types (petechial-spotted, haematoma, mixed).
68. Describe DIC syndrome: phases and laboratory criteria.

MCQ Tests:

Q1. Weakness, dizziness, pallor, glossitis (Hunter's glossitis), numbness in hands. Blood: Hb 70 g/L, MCV 115 fL, MCH 40 pg, leukocytes with hypersegmented neutrophils. Which syndrome?

A) Iron-deficiency anaemia syndrome
B) B12-deficiency (megaloblastic) anaemia syndrome
C) Haemolytic anaemia syndrome
D) Aplastic anaemia syndrome
E) Anaemia syndrome of chronic disease

CORRECT ANSWER: B) B12-deficiency (megaloblastic) anaemia syndrome
High MCV (115 fL, macrocytosis) + high MCH (40 pg, hyperchromia) + Hunter's glossitis + neurological symptoms (numbness — subacute combined degeneration syndrome) + hypersegmented neutrophils = B12-deficiency megaloblastic anaemia syndrome.

Q2. Blood: Hb 82 g/L, MCV 68 fL, MCH 22 pg, serum iron 5 µmol/L, ferritin 6 µg/L, TIBC elevated. Which syndrome?

A) B12-deficiency anaemia syndrome
B) Haemolytic anaemia syndrome
C) Iron-deficiency anaemia syndrome (hypochromic microcytic)
D) Anaemia of chronic disease syndrome
E) Aplastic anaemia syndrome

CORRECT ANSWER: C) Iron-deficiency anaemia syndrome (hypochromic microcytic)
Low Hb + low MCV (microcytosis) + low MCH (hypochromia) + low serum iron + low ferritin (depleted stores) + elevated TIBC = iron-deficiency anaemia syndrome. All three iron metabolism markers confirm absolute iron deficiency.

Q3. Blood: Hb 90 g/L, elevated reticulocytes (8%), elevated indirect bilirubin, LDH 620 U/L, negative direct Coombs test. Spleen enlarged. Which syndrome?

A) Iron-deficiency anaemia syndrome
B) B12-deficiency anaemia syndrome
C) Haemolytic anaemia syndrome (non-immune)
D) Portal hypertension syndrome
E) Cytolysis syndrome

CORRECT ANSWER: C) Haemolytic anaemia syndrome (non-immune)
Elevated reticulocytes (compensatory haematopoiesis) + elevated indirect bilirubin (Hb breakdown product) + elevated LDH (cell destruction marker) + splenomegaly (extramedullary destruction) + negative Coombs (non-immune type) = haemolytic anaemia syndrome, non-immune subtype.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient L., 32 years (female), weakness, dizziness, pica (craving for chalk and raw rice), brittle nails, dry skin, hair loss. Blood: Hb 78 g/L, MCV 70 fL, MCH 20 pg, CI 0.72, serum iron 4 μmol/L, ferritin 5 μg/L, TIBC 80 μmol/L (elevated).

Questions:

69. Which syndromes are characteristic? (5 points)
70. Which additional examinations should be ordered? (5 points)
71. Compose an examination plan with differential syndromic justification. (10 points)

ANSWERS:

1. Characteristic syndromes: (a) Hypochromic microcytic anaemia syndrome — Hb 78 g/L, MCV 70 (microcytosis), MCH 20 (hypochromia), CI 0.72; (b) Sideropenic syndrome — pica (perversion of taste/smell), brittle nails, dry skin, hair loss — reflect tissue iron deficiency; (c) Circulatory-hypoxic syndrome — weakness, dizziness (impaired oxygen transport); (d) Iron deficiency syndrome — serum iron 4 μmol/L, ferritin 5 μg/L (depleted stores), TIBC 80 μmol/L (increased).

2. Additional examinations: reticulocyte count — bone marrow response syndrome assessment; faecal occult blood test ×3 — chronic GI blood loss syndrome; gynaecological examination — menorrhagia syndrome; FEGDS — gastric/duodenal source of chronic blood loss syndrome; thyroid function (TSH) — hypothyroid syndrome as contributing factor; peripheral blood smear — confirm hypochromic microcytic morphology.

3. Examination plan: (1) Reticulocytes — assess bone marrow compensation syndrome (low reticulocytes indicate inadequate response). (2) Peripheral blood smear — confirm hypochromic microcytic anaemia syndrome morphologically. (3) Faecal occult blood test ×3 (consecutive days) — detect occult GI blood loss syndrome. (4) FEGDS — examine gastric and duodenal mucosa for peptic ulcer syndrome or erosive syndrome. (5) Gynaecological consultation — assess menorrhagia syndrome as major cause in women. (6) TSH — exclude hypothyroid syndrome (can coexist and worsen anaemia syndrome). Syndromic conclusion: iron-deficiency anaemia syndrome of moderate severity (Hb 78 g/L) + sideropenic syndrome. Source of chronic blood loss syndrome to be identified — likely gynaecological (menorrhagia syndrome) or GI (erosive syndrome).

CONTROL SECTION No. 9

Section 9: Endocrine System Examination. Syndromes in Endocrinology

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

72. Describe the method of thyroid gland palpation and degree of enlargement.
73. Describe hypothyroid syndrome: pathogenesis and clinical features.
74. Describe hyperthyroid syndrome (thyrotoxicosis syndrome): pathogenesis and clinical features.
75. What are the laboratory criteria for diagnosing hyperglycaemia syndrome?
76. Describe hypoglycaemia syndrome: causes and emergency manifestations.
77. Describe chronic adrenal insufficiency syndrome.

MCQ Tests:

Q1. Exophthalmos, hand tremor, tachycardia 110 bpm, increased sweating, weight loss 6 kg in 6 weeks with good appetite. Which syndrome?

A) Hypothyroid syndrome
B) Hyperthyroid syndrome (thyrotoxicosis syndrome)
C) Hypercorticism syndrome
D) Hyperglycaemia syndrome
E) Phaeochromocytoma syndrome

CORRECT ANSWER: B) Hyperthyroid syndrome (thyrotoxicosis syndrome)
Classic triad of hyperthyroid syndrome: exophthalmos + tachycardia + tremor, combined with hyperhidrosis, weight loss despite good appetite (hypermetabolism syndrome) = hyperthyroid syndrome. Excess thyroid hormones stimulate sympathetic nervous system and increase basal metabolic rate.

Q2. Free T4 30 pmol/L (norm 11–22), TSH 0.02 mIU/L (norm 0.4–4.0). Which syndrome?

A) Primary hypothyroid syndrome
B) Primary hyperthyroid syndrome
C) Secondary hypothyroid syndrome
D) Secondary hyperthyroid syndrome
E) Euthyroid syndrome

CORRECT ANSWER: B) Primary hyperthyroid syndrome
Elevated free T4 (30, norm < 22) + suppressed TSH (0.02, norm 0.4–4.0) = primary hyperthyroid syndrome. The primary disorder is in the thyroid gland — excess TH suppresses TSH by negative feedback. TSH < 0.1 mIU/L confirms overt hyperthyroid syndrome.

Q3. Fasting glucose 8.4 mmol/L on two occasions; HbA1c 7.8%; polyuria, polydipsia, weight loss. Which syndrome?

A) Reactive hypoglycaemia syndrome
B) Hyperglycaemia syndrome (diabetic)
C) Hypothyroid syndrome
D) Cushing syndrome
E) Normal fasting glucose

CORRECT ANSWER: B) Hyperglycaemia syndrome (diabetic)

Fasting glucose > 7.0 mmol/L (twice) + HbA1c > 6.5% + classic symptoms (polyuria, polydipsia, weight loss) = hyperglycaemia syndrome meeting diabetic criteria. HbA1c 7.8% indicates chronic hyperglycaemia syndrome over the preceding 3 months.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient G., 38 years, irritability, hand tremor, profuse sweating, palpitations, weight loss 10 kg in 3 months with preserved appetite. Thyroid enlarged Grade II bilaterally. Blood: free T4 52 pmol/L, TSH 0.008 mIU/L, anti-TSH receptor antibodies (TRAb) — positive. ECG: sinus tachycardia 108 bpm.

Questions:

78. Which syndrome is characteristic? (5 points)
79. Which additional examinations should be ordered? (5 points)
80. Compose an examination plan with differential syndromic justification. (10 points)

ANSWERS:

1. Characteristic syndrome: Primary hyperthyroid syndrome (thyrotoxicosis syndrome) — free T4 markedly elevated (52 pmol/L), TSH suppressed to near-zero (0.008), TRAb positive (autoimmune stimulation syndrome). Clinical manifestations: weight loss with good appetite (hypermetabolism syndrome), tremor, sweating, palpitations (sympathetic activation syndrome), goitre Grade II (thyroid enlargement syndrome), tachycardia syndrome.
2. Additional examinations: Thyroid ultrasound — characterise goitre syndrome (diffuse vs nodular); thyroid scintigraphy (if needed) — functional distribution; anti-TPO antibodies — confirm autoimmune thyroid syndrome; ECG Holter monitoring — detect atrial fibrillation syndrome (complication); liver function tests — hepatic syndrome possible in thyrotoxicosis; bone densitometry — osteopenia syndrome risk.
3. Examination plan: (1) Thyroid ultrasound — quantify goitre syndrome volume, detect nodular formation syndrome. (2) Thyroid scintigraphy (Tc-99m) — diffuse hyperfunction (Graves pattern) vs autonomous nodule syndrome. (3) Anti-TPO antibodies — complete autoimmune thyroid syndrome characterisation. (4) ECG 24-hour Holter — assess tachycardia syndrome, detect atrial fibrillation syndrome. (5) ALT, AST, bilirubin — exclude drug-induced hepatic syndrome before starting antithyroid therapy. (6) Bone density (DEXA) — osteopenia syndrome screening (hyperthyroid syndrome causes accelerated bone resorption). Syndromic conclusion: Primary hyperthyroid syndrome (overt thyrotoxicosis) with autoimmune activation syndrome (Graves pattern) + goitre Grade II syndrome + tachycardia syndrome + hypermetabolism syndrome.

CONTROL SECTION No. 10

Section 10: Musculoskeletal System Examination. Syndromes in Rheumatology

BLOCK A — Reproductive Level | Time: 30 min

Oral Questions:

81. What are the main methods of joint examination and their sequence?
82. Describe differences between inflammatory arthritic syndrome and degenerative arthrosis syndrome.
83. List main syndromes in rheumatology.
84. Describe seropositive arthritic syndrome: clinical and laboratory markers.
85. Describe crystalline arthritic syndrome (gout pattern): clinical features and laboratory criteria.
86. What is the diagnostic value of X-ray examination in arthritic and arthrosis syndromes?

MCQ Tests:

Q1. Symmetrical swelling and tenderness of MCP II–IV joints of both hands, morning stiffness 90 minutes, subcutaneous nodules on extensor surfaces. Which syndrome?

A) Degenerative arthrosis syndrome
B) Inflammatory seropositive arthritic syndrome
C) Crystalline arthritic syndrome (gout)
D) Reactive arthritic syndrome
E) Psoriatic arthritic syndrome

CORRECT ANSWER: B) Inflammatory seropositive arthritic syndrome
Symmetrical small joint involvement (MCP II–IV) + prolonged morning stiffness (> 60 min = inflammatory, not degenerative) + subcutaneous nodules = inflammatory seropositive arthritic syndrome. Distinguished from arthrosis syndrome (no morning stiffness, mechanical pain, large joints, no nodules) and crystalline arthritic syndrome (acute attacks, asymmetric, first MTP joint).

Q2. Blood: uric acid 620 µmol/L; monoarticular acute joint inflammation of the first MTP joint, intense pain, redness, swelling; self-resolving in 7 days. Which syndrome?

A) Infectious arthritic syndrome
B) Reactive arthritic syndrome
C) Crystalline arthritic syndrome (hyperuricaemia pattern)
D) Seropositive arthritic syndrome
E) Psoriatic arthritic syndrome

CORRECT ANSWER: C) Crystalline arthritic syndrome (hyperuricaemia pattern)
Acute monoarthritis of first MTP joint (podagra) + hyperuricaemia (620 µmol/L, > 360 µmol/L normal) + self-resolving in 7 days = crystalline arthritic syndrome (gout pattern). Uric acid crystals deposit in the joint during hyperuricaemia syndrome, triggering acute inflammatory arthritic syndrome.

Q3. Blood: ESR 58 mm/h, CRP 48 mg/L, RF 120 IU/mL, ACPA 90 U/mL; X-ray: periarticular osteoporosis, joint space narrowing, erosions. Which syndrome?

A) Degenerative arthrosis syndrome
B) Systemic lupus syndrome
C) Seropositive arthritic syndrome (high activity, erosive)
D) Crystalline arthritic syndrome
E) Reactive arthritic syndrome

CORRECT ANSWER: C) Seropositive arthritic syndrome (high activity, erosive)

Elevated ESR + elevated CRP = systemic inflammatory response syndrome. Both RF+ and ACPA+ (double seropositivity) = seropositive arthritic syndrome. X-ray erosions + periarticular osteoporosis + joint space narrowing = erosive arthritic syndrome, indicating structural joint damage.

BLOCK B — Reconstructive Level | Time: 60 min

CLINICAL CASE 1

Patient T., 50 years (female), symmetric joint pain and swelling in hands, wrists, and ankles for 10 months. Morning stiffness lasting 2 hours, significant fatigue, low-grade fever 37.4°C. Examination: swelling, warmth, tenderness of MCP II–V and PIP bilaterally. Blood: Hb 100 g/L, ESR 60 mm/h, CRP 52 mg/L, RF 140 IU/mL, ACPA 95 U/mL. X-ray hands: periarticular osteoporosis, small erosions at MCP II–III.

Questions:

87. Which syndromes are characteristic? (5 points)
88. Which additional examinations should be ordered? (5 points)
89. Compose an examination plan with differential syndromic justification. (10 points)

ANSWERS:

1. Characteristic syndromes: (a) Inflammatory seropositive arthritic syndrome — symmetrical polyarthritis, morning stiffness 2 h, both RF and ACPA positive (double seropositivity syndrome); (b) Systemic inflammatory response syndrome — ESR 60, CRP 52, low-grade fever; (c) Erosive arthritic syndrome — X-ray erosions at MCP II–III (structural damage syndrome); (d) Periarticular osteoporosis syndrome — X-ray finding; (e) Anaemia syndrome of chronic disease — Hb 100 g/L (chronic inflammation suppresses erythropoiesis syndrome).
2. Additional examinations: joint ultrasound (synovitis syndrome quantification, power Doppler for vascularity); MRI hands (early erosion syndrome, bone marrow oedema syndrome); DAS28 score (inflammatory activity syndrome quantification); ANA, anti-dsDNA (exclude systemic lupus syndrome); uric acid (exclude hyperuricaemia + crystalline arthritic syndrome); baseline liver function and renal function (before DMARD therapy).
3. Examination plan: (1) Joint ultrasound (grey-scale + power Doppler) — detect and grade synovitis syndrome (most sensitive for early detection). (2) MRI hands and wrists — identify bone marrow oedema syndrome (early erosion predictor), tenosynovitis syndrome. (3) X-ray bilateral hands + feet — baseline erosive arthritic syndrome assessment, progression monitoring. (4) ANA + anti-dsDNA + anti-Sm — exclude systemic lupus erythematosus syndrome (overlap possible). (5) Uric acid — exclude hyperuricaemia syndrome contributing to crystalline arthritic syndrome. (6) DAS28-ESR/CRP — quantify inflammatory arthritic syndrome activity for treatment decision. Syndromic conclusion: Inflammatory seropositive arthritic syndrome, high disease activity (DAS28 to calculate) + erosive arthritic syndrome + systemic inflammatory response syndrome + anaemia syndrome of chronic disease. X-ray stage II–III structural damage syndrome.

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9. RECOMMENDED LITERATURE

Main Literature (L1)

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- L2.4. Ball J.W. et al. Seidel's Guide to Physical Examination. — Elsevier, 2023.

Regulatory Documentation (L3)

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- L3.2. Clinical Protocols of the Ministry of Health of the Kyrgyz Republic.
- L3.3. ICD-10 / ICD-11 — International Classification of Diseases.
- L3.4. Electronic Library of KRSU: www.lib.krsu.kg