

LIST OF QUESTIONS OF
THE EXAMINATION OF CARDIOLOGY
IV YEAR FOR STUDENTS
FACULTY OF MEDICINE

1. Noninvasive and invasive cardiovascular laboratory explorations.
2. Biological evaluation: laboratory tests, serum biomarkers (markers myocyte's injury, inflammation, oxidative stress, neuro-hormones, myocyte's stress, extracellular matrix remodeling).
3. Electrocardiography. Resting ECG 12-lead standard. Indications.
4. ECG signal amplification and mediation. Indications
5. Prolonged ambulatory ECG monitoring (Holter). Indications.
6. Automated ambulatory blood pressure monitoring. Indications.
7. Exercise ECG test. Indications and contraindications.
8. Psycho-emotional stress ECG test, isometric, in cold. Indications and contraindications.
9. Pharmacological stress ECG tests. Indications and contraindications.
10. Radiological investigation techniques and incidences of heart and great vessels (posterior-anterior, left-side, oblique anterior right 45 or 60 degrees. Oblique-left anterior, anterior-posterior and dorsal decubitus (position). Cavities increase heart and great vessels. Pulmonary circulation and pulmonary vascular syndrome. Pulmonary venous stasis.
11. Echocardiography. Main terms (M, 2D, 3D, Doppler, transoesophageal). Indications.
12. Doppler echocardiography. Dopplerography of main vessels. Indications.
13. Inclined table test in the diagnosis of syncope.
14. Electrophysiological exploration of the heart. Technique. Major indications. Complications.
15. Nuclear imaging in cardiology. Myocardial perfusion scintigraphy. Radiopharmaceuticals. By dynamic exercises stress testing or pharmacological vasodilators or sympathomimetics. Radionuclide ventriculography. Positron emission tomography.
16. Cardiac CT. Coronary CT angiography with contrast. Cardiac CT evaluation of cardiac chambers, pericardium and great vessels.
17. Cardiac MRI, coronary and great vessels.
18. Cardiac catheterization and angiography. Left ventriculography. Aortography. Coronaroangiography. Indications. Intravascular ultrasound. Complications.
19. Aortic stenosis. Etiology. Pathophysiology (effect of pressure overload on LV geometry, systolic and diastolic LV function, myocardial ischaemia)
20. Aortic stenosis. Diagnosis (clinical, laboratory investigations). Pharmacological treatment, medication, surgical and interventional.
19. Aortic insufficiency. Etiology. Pathophysiology (acute and chronic aortic regurgitation, adaptation to stress, myocardial ischemia).
20. Aortic insufficiency. Diagnosis (clinical, laboratory investigations). Pharmacological treatment, medication and surgery.
21. Mitral stenosis. Etiology. Pathophysiology (direct consequences of the presence of valvular obstruction, effort and adaptation of symptoms pulmonary hypertension, LV function).
22. Mitral stenosis. Diagnosis (clinical, laboratory investigations). Pharmacological treatment, medication, surgical and percutaneous mitral balloon.
23. Mitral regurgitation. Etiology (organic mitral regurgitation, ischemic and functional). Pathophysiology (mechanisms of ischemic mitral regurgitation appearance and functional hemodynamic changes, LV function).
24. Mitral regurgitation. Diagnosis (clinical, laboratory investigations). Pharmacological treatment, medication, surgical and cardiac resynchronization therapy.
25. Degenerative mitral regurgitation. Mitral valve prolapse.

26. Tricuspid stenosis. Etiology. Pathophysiology. Diagnosis (clinical, laboratory investigations). Drug therapy, interventional and surgical.
27. Tricuspid insufficiency. Etiology. Pathophysiology (tricuspid regurgitation associated with mitral valve damage, functional tricuspid regurgitation mechanisms appearance, RV function). Diagnosis (clinical, laboratory investigations). Medical and surgical treatment.
28. Pulmonary stenosis. Etiology. Pathophysiology. Diagnosis (clinical, laboratory investigations). Drug therapy, interventional and surgical.
29. Pulmonary insufficiency. Etiology. Pathophysiology. Diagnosis (clinical, laboratory investigations). Medical and surgical treatment.
30. Endocarditis. Definition. Epidemiology. Etiopathogenesis.
31. Endocarditis. Clinical picture. Laboratory tests (laboratory tests, ECG, EcoCG). Diagnosis.
32. Endocarditis. Differential diagnosis. Pharmacological and surgical treatment. Complications and prognosis. Prevention.
33. Hypertension. Definition and classification of hypertension. Etiopathogenesis hypertension (neural mechanisms, renal, vascular, hormonal and so on).
34. Diagnosis of hypertension. Measurement of blood pressure. HTA of "white coat". Ambulatory hypertension or "masked".
35. Hypertension. Physical examination and laboratory investigations. Other test results.
36. Assessment of cardiovascular risk in patients with hypertension. The term "additional risk". Classical cardiovascular risk factors in hypertension. Subclinical organ damages and diabetes. The clinically manifestations of cardiovascular diseases.
37. Non-pharmacological treatment of hypertension.
38. Pharmacological treatment of hypertension. Monotherapy. Combination therapy.
39. Hypertension in special situations. Hypertension in the elderly. Treatment.
40. Hypertension in special situations. Hypertension in young people. Treatment.
41. Hypertension in special situations. Resistant hypertension. Treatment.
42. Hypertensive emergencies. Hypertensive common urgency (relative). Hypertensive urgency extreme (major life-threatening).
43. Accelerated-malignant hypertension with papilloedema.
44. Classical cardiovascular risk factors (age, sex, heredity, obesity, sedentary lifestyle, smoking, alcohol, hypertension, DLP) and recently described (homocysteine, lipoprotein (a), proinflammatory factors, prothrombinic factors). CV risk scores.
45. Preventive cardiology. Primary prophylaxis. Prevention strategy for population and high-risk population. Total as grid SCORE risk estimation. Secondary prevention.
46. Atherosclerosis. Definition. Pathogenesis: initiation process, the progression of lesions, the role of inflammation and arterial calcification, plaque vulnerability. Clinical manifestations.
47. Dyslipidemia. Definition and terminology. Metabolism and transportation of lipoproteins (LDL-C, HDL-C, VLDL-C, non HDL-C, apolipoproteins, lipoprotein (a)).
48. Dyslipidemia. By Fredrickson types, classifications. Lipoprotein abnormalities genetic determinism. Mechanisms involved in atherogenesis.
49. Dyslipidemia as a risk factor for coronary heart disease.
50. Classification of hyperlipoproteinemias. Primary and secondary hyperlipoproteinemias.
51. Hyperlipidaemia diagnosis. Hypercholesterolaemia. Mixed hypercholesterolemia. Hypertriglyceridemia.
52. Treatment of hiperlipoproteinaemias non medicated and medicated. Prophylaxis of hyperlipidemia.
53. Metabolic syndrome. Definition. Epidemiology. Cardiovascular risk associated with MS. Therapeutic principles in MS.
54. Ischemic heart disease. Angina pectoris. Definition. Epidemiology. Etiopathogenesis. Classification.
55. Risk factors and prevention in ischemic heart disease. Risk stratification.

56. Stable angina of effort. Classification. Diagnosis: clinical and laboratory investigations.
57. Stable angina of effort. Nonpharmacologic and pharmacologic treatment. Myocardial revascularization. Postrevascularization myocardial recovery.
58. Microvascular angina (coronary syndrome X). Definition. Etiopathogenesis. Clinical picture. Diagnosis. Treatment. Prognosis.
59. Silent ischemia. Definition. Pathogenesis. Clinical picture. Diagnosis. Treatment. Prognosis.
60. Ischemic syndromes (myocardial preconditioning, stunned and hibernating myocardium).
61. Vasospastic angina (variable, Prinzmetal). Definition. Mechanism. Clinical manifestation. Diagnosis. Treatment. Prognosis.
62. Acute coronary syndrome. Unstable angina and MI without ST segment elevation. Classification. Diagnosis (signs and symptoms, laboratory). Clinical risk stratification. Differential diagnosis.
63. Acute coronary syndrome. Unstable angina and MI without ST segment elevation. Treatment (general measures, medication, interventional and surgical). Recovering unstable angina.
64. Acute myocardial infarction with ST-segment elevation. Criteria for definition of MI (detection increase and / or decrease biomarkers of myocardial necrosis, myocardial ischemic symptoms, ECG changes suggestive of ischemia new appearance of pathological Q wave on the ECG, imaging evidence of a recent loss of viable myocardium and so on). Pathogenesis (Pathology, changes in the VS).
65. Acute myocardial infarction with ST-segment elevation. Diagnosis (clinical, ECG, assessment of serum biomarkers and other biological samples, imaging).
66. Acute myocardial infarction with ST-segment elevation. Medical treatment during pre-hospital and hospital immediately (pain, oxygen, antianginal therapy, antiplatelet and anticoagulant).
67. Acute myocardial infarction with ST-segment elevation. Myocardial reperfusion therapy (coronary angioplasty, fibrinolytic therapy, antithrombotic therapy associated with reperfusion therapy treatment without reperfusion therapy).
68. Acute myocardial infarction with ST-segment elevation. Routine pharmacological treatment in the acute phase. Surgical revascularization.
69. Complications of myocardial infarction. Pump failure and cardiogenic shock. Right ventricular failure.
70. Mechanical complications of AMI.
71. AMI complications. Arrhythmias and conduction disturbances.
72. AMI complications. Consequences of post-MI LV remodeling. Other complications.
73. Myocardial infarction. Risk assessment and treatment at discharge. Secondary prevention. IMA recovery.
74. Heart failure. Definition. Terminology (acute vs. Chronic left vs. Right, systolic vs. Diastolic global newly installed, transient, asymptomatic). Epidemiology.
75. Chronic heart failure. NYHA functional classification. Classification ACC / AHA based on structural abnormalities. Possible etiologies and mechanisms dominant (pressure and volume overload, decreased contractile efficiency and cardiac filling).
76. Contributing factors and precipitants of heart failure (or arrhythmia management, infectious disease, hypertensive crisis, myocardial ischemia, pulmonary embolism, anemia, hypoxemia of various etiologies, endocrine disorders, hyperkinetic states, noncompliant referrals, use of drugs with adverse effects).
77. Important pathophysiological mechanism in chronic heart failure: cardiac abnormalities (structural and functional) and neurohumoral (RAAS, SNS, bradykinin, NO, PG, BNP, endothelin, IL, TNF- α). LV remodeling. Mitral regurgitation. Arrhythmias and left bundle branch block.
78. Diagnosis of chronic heart failure (clinical, paraclinic investigations - ECG, imaging, laboratory).
79. Vs. left heart failure. Right. Global heart failure.

80. Hipodiastolic heart failure and preserved LV ejection fraction.
81. Treatment of chronic heart failure. Measures related to lifestyle. Pharmacological therapy (ACEI β AB, aldosterone antagonists, ARAII, diuretics, digoxin, dopamine, dobutamine, epinephrine, levosimendan, vasopressin V2 receptor antagonist, nesiritide, anticoagulants, antiarrhythmics). Recovery of heart failure.
82. Treatment of chronic heart failure. TREATMENT interventional (cardiac resynchronization therapy, implantable cardiac defibrillators), surgery (myocardial revascularization, ventricular reconstruction and mitral valve, heart transplantation).
83. Acute heart failure. Definition. General clinical classification (IC IC novo and chronic exacerbated Killip class). Etiology and cardiac and extracardiac precipitating factors.
84. Acute heart failure. Path physiology and forms of presentation of ICA (decompensate chronic HF / worse, EPA, IC hypertensive cardiogenic shock, isolated right IC, IC associated with ACS, increased cardiac output IC).
85. Acute heart failure. Diagnosis: clinical manifestation (symptoms and signs) and laboratory investigations (ECG, imaging tests, laboratory, blood gas meter and so on).
86. Treatment of acute heart failure. Treatment goals (TA, hypervolaemia, renal function, and so on). Ventilation techniques (oxygen, noninvasive ventilation, intubations and mechanical orotracheal ventilation).
87. Treatment of acute heart failure. Modulator of pre-/postload (diuretics, vasodilators). Inotropic therapy (dobutamine, dopamine, milrenona, levosimendan, digoxin).
88. Pharmacological treatment of acute heart failure. Intraaortic balloon counterpulsation, ventricular assist devices.
89. Special cases of acute heart failure. Cardiogenic pulmonary edema. Clinical picture, laboratory tests (ECG, chest X-ray, EcoCG, gas meter pressure, blood counts, the BNP or NT-pro BNP plasma). Treatment.
90. Special cases of acute heart failure. Cardiogenic shock. Etiology. Clinical picture. Treatment.
91. Pericardial diseases. Definition and classification. Etiological forms of pericarditis.
92. Acute pericarditis. Definition. Epidemiology. Etiology. Clinical picture. Diagnosis. Treatment. Evolution.
93. Cardiac tamponade. Definition. Etiology. Path physiology. Clinical picture. Diagnosis. Treatment.
94. Chronic pericarditis fluid. Constrictive pericarditis effusion. Definition. Etiology. Clinical picture. Diagnosis. Treatment.
95. Constrictive pericarditis. Definition. Etiology. Pathophysiology and Pathology. Clinical picture. Diagnosis. Treatment.
96. Myocarditis. Definition (Dallas criteria). Classifications. Epidemiology. Etiology (infectious and non infectious). Pathogenesis (initially, immune response and autoimmune reaction).
97. Myocarditis. Clinical (symptoms and signs). Acute myocarditis, fulminant and giant cell chronic active. Noninvasive and invasive laboratory evaluations. Endomyocardial biopsy for histological assessment, immunohistology analysis and detection of viral genome by molecular biology.
98. Myocarditis. Treatment. Recognized certain therapies (heart failure, arrhythmias, and NSAIDs). Controversial therapies possibly additional (immunomodulatory, antiviral, etc.). Evolution and prognosis
99. Cardiomyopathies. Definition. Classifications. Specific and nonspecific cardiomyopathies, genetic, mixed and acquired, hypertrophic, dilated, restrictive, arrhythmogenic of right ventricle and unclassified.
100. Hypertrophic cardiomyopathy. Definition. Classification. Apical type. Pathophysiology (outflow tract obstruction of LV, diastolic dysfunction, myocardial ischemia, decreased parietal thickness). Clinical picture.

101. Hypertrophic cardiomyopathy. Laboratory investigations. Drug therapy, surgical and interventional (alcohol septal ablation and bicameral pacing). Evolution and prognosis.
102. Dilated cardiomyopathy. Definition. Classification. Forms of dilated cardiomyopathy nonfamilial (alcoholic, tachyarrhythmia, peripartum, toxic chronic anthracycline-induced, in muscular dystrophies). Pathophysiology. Clinical picture.
103. Dilative cardiomyopathy. Laboratory investigations. Myocardial biopsy. Drug therapy. Resynchronization therapy. Implanted cardiac defibrillator. Cardiac transplantation. Evolution and prognosis.
104. Restrictive cardiomyopathy. Definition. Classification. Forms of nonfamilial restrictive cardiomyopathy (amyloidosis, sarcoidosis, hemochromatosis, the disease Fabry, glycogenoses, Löffler endocarditis and endomyocardial fibrosis). Clinical picture.
105. Restrictive cardiomyopathy. Laboratory investigations. Treatment. Evolution and prognosis.
106. Arrhythmogenic right ventricular cardiomyopathy. Definition. Classification. Clinical picture. Laboratory investigations. Endomyocardial biopsy.
107. Arrhythmogenic right ventricular cardiomyopathy. Major and minor criteria of diagnosis. Treatment of arrhythmias and heart failure in arrhythmogenic right ventricular cardiomyopathy. Evolution and prognosis.
108. Arrhythmogenesis. Physiological bases of cardiac electrical activity. Automatism or chronotropism. Conductivity or dromotropism. Excitability or batmotropism. Resting membrane potential. Transmembrane transport of ions and ion selective channels. The action potential of fast or slow type and respective phases.
109. Arrhythmogenesis mechanisms (abnormal impulse formation activity triggered - trigger, reentry).
110. Classification of cardiac arrhythmias. Sinus rhythm disorders. Sinus tachycardia. Sinus bradycardia. Sinus arrhythmia.
111. Extrasystoles (extrasystole arrhythmia). Atrial extrasystoles. Junctional extrasystoles. Ventricular extrasystoles.
112. Tachyarrhythmia. Supraventricular arrhythmias. Paroxysmal supraventricular tachycardias. AV reentrant supraventricular tachycardias.
113. Treatment and prevention of paroxysms of supraventricular tachycardia.
114. Atrial flutter. Etiology. ECG diagnosis. Principles of treatment. Treatment of paroxysmal atrial flutter.
115. Atrial fibrillation. Etiology. ECG diagnosis. Principles of treatment. Treatment of paroxysmal atrial fibrillation.
116. Ventricular preexcitation syndromes and variants. Wolff-Parkinson-White syndrome (WPW).
117. Ventricular arrhythmias. Classification. Particular form of ventricular tachycardia (monomorphic ventricular tachycardia heart normally reentrant branch block, form continuous bidirectional polymorphic, torsade de pointes, accelerated idioventricular rhythm).
118. Flutter and ventricular fibrillation. ECG diagnosis. Treatment.
119. Brady arrhythmias. Sinus bradycardia and sinus arrhythmia. Sino-atrial block (grade I, II and III).
120. Atrioventricular conduction disturbances. Atrioventricular block grade I, II and III.
121. Intraventricular conduction disturbances. Left bundle branch block.
122. Intraventricular conduction disturbances. Right bundle branch block.
123. Intraventricular conduction disturbances. Left bundle branch blocks anterior and posterior.

124. Antiarrhythmics and pharmacological treatment of cardiac arrhythmias. Classification of antiarrhythmics. New antiarrhythmic drugs.
125. Antiarrhythmic drugs commonly administered to treat supraventricular tachyarrhythmias (adenosine, verapamil, diltiazem, esmolol, ibutilide, dofetilide, digoxin).
126. Antiarrhythmic agents commonly administered for the treatment of ventricular arrhythmias (lidocaine, mexiletine, dizopiramide, procainamide).
127. Antiarrhythmic therapy administered both supraventricular tachyarrhythmias and of the ventricular (quinidine, propafenone, flecainide, sotalol, amiodarone).
128. Electrical therapy in cardiac arrhythmias. Antiarrhythmic implantable devices. Pacing and pacemaker implant. Implanted cardiac defibrillator. Cardiac resynchronization therapy.
129. Interventional electrophysiology. Ablative therapy in cardiac arrhythmias. Basic biophysics terms of radiofrequency energy. Arrhythmia surgery.