List of questions

on the discipline of radiation diagnostics and radiation therapy

for students of the Medical Faculty

1. Discovery of X-rays.
2. Generation of X-rays, their nature and properties. The structure of the X-ray tube.
3. Physical and technical principles of computed tomography.
4. Physical and technical principles of magnetic resonance imaging.
5. Biological effect of ionizing radiation. Measures to protect personnel, patients and the population during X-ray examinations. Methods of protection from ionizing radiation in X-ray rooms. The concept of the maximum permissible dose.
6. Methods for recording doses of ionizing radiation. Radiation doses and units of measurement.
7. The reaction of the whole organism to radiation damage. Factors influencing the biological effect of ionizing radiation. Radiosensitivity and radiosensitivity.
8. The concept of stochastic and non-stochastic effect.
9. Chronic radiation sickness. Stages, clinical manifestations.
10. Radiation safety standards (RSS). Categories of persons stipulated by RSS.
11. Concept of image quality. What determines image quality. contrast in the image.
12. Fundamentals of X-ray skialogy.
13. Methods of natural and artificial contrast in radiology.
14. Basic methods of X-ray examinations for diseases of the lungs and pleura.
15. Fluorography, its role in the diagnosis of lung diseases.
16. X-ray diagnostics of acute pneumonia. Classification, differential diagnostics.
17. X-ray diagnostics of pulmonary emphysema. Classification. Pulmonary dystrophy.
18. Benign tumors of the lungs and bronchi. Classification, differential diagnostics.
19. Interstitial diseases of the lungs (sarcoidosis, carcinomatosis, alveolitis).
20. Radiographic symptoms of central lung cancer. Classification. Complications.
21. Peripheral lung cancer. Classification, complications. Differential diagnostics.
22. Metastatic tumors in the lungs. Radiographic symptoms. Classification.
23. Diagnostics of pulmonary tuberculosis. Classification, radiographic symptoms of focal tuberculosis.
24. Radiographic diagnostics of cavernous and fibrous-cavernous tuberculosis. Differential diagnostics.
25. Radiographic diagnostics of pleurisy. Differential diagnostics.
26. Methods of examination of abdominal organs.
27. Methods of radiographic examination of foreign bodies in the pharynx and esophagus.
28. Esophageal cancer. Classification. Research methods. Radiographic symptoms.
29. Gastric ulcer. Classification. Features of the radiographic picture depending on the ulcer location.
30. Gastric cancer. Classification. The main radiographic symptoms for different tumor locations.
31. Methods of radiographic examination of the small intestine.
32. Methods of radiographic examination of the large intestine.
33. Radiographic symptoms for benign and malignant tumors of the large intestine.
34. Acute abdominal catastrophes. Foreign bodies in the abdominal cavity.
35. Research methods for diseases of the liver and biliary tract.
36. The main methods of radiographic examination in urology.
37. Urolithiasis of the kidneys. Radiographic diagnostics. Symptoms. Differential diagnostics.
38. Tumors of the urinary bladder. Principles of X-ray diagnostics.
39. Classification and main X-ray symptoms of circulatory disorders in the pulmonary circulation.
40. Types of contrast studies of the heart and blood vessels. Information content, indications and contraindications.
41. Main research methods in cardiology. Information content and significance.
42. Main research methods for diseases of the mediastinal organs.
43. Benign tumors of the mediastinum. Classification, main X-ray symptoms.
44. Malignant tumors of the mediastinum: clinical presentation, diagnostics, classification.
45. Main methods of X-ray examination in osteology.
46. Methods of X-ray examination of the skull.
47. Roentgenosemiotics of bone and joint diseases.
48. X-ray symptoms of bone fractures (traumatic and pathological).
49. Mammography. Research methods, main X-ray symptoms of mastopathy and breast cancer.
50. X-ray picture of inflammatory and tumor lesions of bones.