

CONTEST TOPICS - DIDACTIC TEST

for the position of University Associate Professor, position 35 - Radiology; Radiology (MFR); Radiology and medical imaging,

Department XV - Orthopedics-Traumatology, Urology, Radiology and Medical Imaging.

1. Principles of imaging technologies. Roentgen radiation: mode of production; physical, chemical and biological properties. Action on the human body. Radiological image formation; the peculiarities and laws of image formation. X-ray dosing.
2. Röntgen device: component parts, operating principles, dedicated special types.
3. CT image formation - physical principles. CT examination protocols for various organs and pathological processes, the relative value and indications of CT examination of various organs and systems, The main diagnostic applications of the main conventional MRI sequences (T2, T1, STIR, FLAIR). Indications for the use of MRI contrast agents in the study of various organs and systems. Basic principles of radiation protection.
4. Radiology of the head and neck. Descriptive anatomy, congenital anomalies. Radio-imaging diagnosis of skull base tumors. Radio-imaging diagnosis of orbital disorders. Radio-imaging diagnosis of nasal and paranasal sinus lesions. Radioimaging diagnosis of diseases of the oral cavity, pharynx and larynx.
5. Chest radiodiagnosis: Normal radio-imaging anatomy of the thorax. Radio-imaging techniques and protocols used in chest exploration. Imaging diagnosis of acute and chronic alveolar, bronchial, interstitial inflammatory diseases, pleural disorders. Imaging diagnosis of pulmonary tuberculosis. Diagnosis and imaging management of lung nodules and lung tumors.
6. Radiology of the heart and blood vessels: Radioimaging techniques used in cardiac evaluation. Radio imaging techniques used in the evaluation of large vessels, supraaortic trunks and peripheral vessels. Positive radioimaging (CT, MRI) diagnosis in cardiomyopathies. Radioimaging diagnosis in aortic artery pathology. Radioimaging diagnosis in pulmonary artery pathology. Vascular diagnosis by Doppler ultrasound: normal arterial and venous anatomy.
7. Gastrointestinal and abdominal radiology. Radioimaging anatomy of the gastrointestinal tract. Contrast substances used in the evaluation of the abdominal organs; radio-imaging techniques used in the evaluation of gastrointestinal and abdominal organs. Radioimaging diagnosis in the pathology evaluation of the esophagus, stomach, small intestine.
8. 8. Radiodiagnosis of the urinary tract: Radio-imaging anatomy of the kidney, urinary tract, bladder. Intravenous urography - indications, method selection, contrast agent. Radio-imaging diagnosis of renal malformations, urinary tract and ureters. Radio-imaging diagnosis of urinary stones. Radioimaging diagnosis of renal and urinary tumors. Radio-imaging diagnosis of cystic kidney disease. Radio-imaging diagnosis of

- renal, perirenal and urinary tract infections. Radio-imaging diagnosis of bladder pathology.
9. Radiologia in obstetrica si ginecologie. Anatomia radio-imagistica a pelvicolui feminin. Diagnosticul radio-imagistic al tumorilor aparatului genital feminin. Diagnosticul radio-imagistic al leziunilor ovariene si al bolilor inflamatorii pelvine.
 10. Radiodiagnosis of the musculoskeletal system: Indications / contraindications of procedures and techniques relevant to the radio-imaging examination of the musculoskeletal system. Radio-imaging diagnosis of TB infections of the musculoskeletal system. Radiographic diagnosis of bone-forming tumors, including osteoma, osteoid osteoma, osteoblastoma, osteosarcoma. Radio-imaging diagnosis of cartilage-forming tumors, including osteochondroma, enchondroma, chondroblastoma, fibroma, chondrosarcoma. Radio-imaging diagnosis of hematopoietic tumors including, round cell malignancies (Ewing's sarcoma), myeloma / plasmacytoma. Radio-imaging diagnosis of pseudotumor bone lesions (simple bone cyst, aneurysmal bone cysts). Radio-imaging diagnosis of bone metastases.
 11. Neuroradiology. Radio-imaging anatomy of the brain, skull and vertebral skeleton. Neurovascular, radio-imaging diagnosis of stroke, radio-imaging diagnosis of intracranial vascular malformations. Radio-imaging diagnosis of epidural hematoma, subdural hematoma, traumatic HSA and cerebral parenchyma contusions. Intracranial tumors. Inflammatory, infectious and neurodegenerative diseases.
 12. Senological radio imaging. Indications and contraindications of radio-imaging techniques in breast pathology. The standardized lexicon and the risk categories of the breast diagnosis. Radio-imaging diagnosis of benign, borderline and malignant breast lesions. Indications and contraindications of imaging-guided interventional maneuvers. Breast cancer screening.

Selective bibliography

1. Sorin M. Dudea (under the editorship) - Radiology and Medical Imaging - study guide for specialized training, vol. I and II, Ed. Medicala, Bucharest, 2015
2. Haaga JR, Dogra VS, Forsting M, Gilkeson RC, Ha HK and Sundaram M - CT and MRI of the Whole Body, 5th ed, 2-Vol. set, eds. Mosby Elsevier; 2008, 2904 pages.
2. Prokop M, Galansky M - Spiral and Multislice Computer Tomography of the Body, 2003.
3. Sutton D. - Textbook of Radiology and Imaging, vol.1-2, 7th Ed., 2003.