**WEEK 2 - RADIOLOGY DEVICES AND PRINCIPLES OF THEIR WORK (ULTRASOUND, COMPUTED TOMOGRAPHY, MAGNETIC RESONANCE)**

1. What are the basic modalities in radiology?
2. Who invented CT and when?
3. Principles of work of CT
4. What are pixels and voxels?
5. Hounsfield scale
6. How many generations of CT machines are there?
7. What are the basic methods of image reconstruction on CT?
8. Why do we use contrast mediums on CT examinations?
9. What contrast mediums do we use for CT examination and why?
10. What are the advantages of MDCT over other CT generations ?
11. What are the advantages of CT over other imaging modalities?
12. What are the advantages of UZ over other imaging modalities?
13. What are the advantages of MRI over other imaging modalities?
14. Is the US harmful for patients?
15. What is ultrasound?
16. At what frequency do ultrasound probes operate?
17. Can ultrasound waves travel through vacuum?
18. The velocity of the ultrasonic wave depends on what ?
19. How are frequency and penetration of ultrasound waves related to each other?
20. What are ultrasound waves attenuation and absorption?
21. What are the types of ultrasound probes ( transducers )?
22. When was the first clinical MRI installed?
23. Which atoms are used for image generation on clinical MRI?
24. Which structures are white and which are black on T1W?
25. Which structures are white and which are black on T2W?
26. Which sequences are most often used in MRI examinations?
27. For which examinations is MRI most commonly used?
28. In which cases should MRI not be used?
29. What do MRI scanners use to generate images of the organs in the body?
30. Is the magnetic field used by MRI strong or weak?