



DIAGNOSTIC MEDICAL PHYSICS CONTINUING CERTIFICATION EXAM CONTENT GUIDE

1. **Radiography, Mammography, Fluoroscopy, and Interventional Imaging**
 - X-ray imaging physics
 - Radiography
 - Mammography
 - Fluoroscopy and Interventional Radiology
 - Clinical Medical Physics Practice (radiography, mammography, fluoroscopy)
2. **Computed Tomography**
 - CT Design and Operation
 - CT Clinical protocols and procedures
 - CT Image Quality
 - CT Radiation Dose and Patient Safety
 - CT Clinical Medical Physics Practice
3. **MRI and Ultrasound**
 - Magnetic Resonance Imaging and Spectroscopy basics
 - MR Imaging procedures and Safety considerations
 - Ultrasound production and beam properties
 - Ultrasound data acquisition, image characteristics and safety
 - MRI and US Clinical Medical Physics Practice
4. **Informatics, image display, and image fundamentals**
 - Information Systems Design and Fundamentals of Operation
 - Image Display and Workstation
 - Modality Image Characteristics
 - [Professionalism and Ethics](#) – Clinical Medical Physics Practice
5. **Radiation Biology, Dosimetry, Protection, and Safety**
 - Radiation Biology
 - Dosimetry
 - Radiation Protection
 - Radiation Safety
 - Room Shielding Design

Sample Questions

Multiple Choice

1. For a radiograph acquired with automatic exposure control, an increase in which of the following factors will increase patient skin dose?
 - A. Tube current (mA)
 - B. Tube voltage (kV)
 - C. Patient thickness
 - D. Focal spot size
 - E. Source-to-image distance
2. A region of interest (ROI) in a CT image has an intensity of -30 HU. What is the ratio of the linear attenuation coefficient for the ROI to that of water?
 - A. 0.70
 - B. 0.97
 - C. 1.00
 - D. 1.03
 - E. 1.30
3. As a potential contrast agent for ultrasound, which of the following materials is expected to be the strongest scatterer for a fixed concentration of small ($< 5 \mu\text{m}$) particles?
 - A. Encapsulated polymer
 - B. Encapsulated lipid
 - C. Encapsulated gas
 - D. Encapsulated iodine
4. Which one of the following objects will have the highest MR signal in a brain image acquired with a spin echo pulse sequence of $\text{TR}=2500 \text{ ms}$ and $\text{TE}=100 \text{ ms}$?
 - A. Gray matter
 - B. White matter
 - C. Lens of the eye
 - D. Cerebrospinal fluid
5. According to NCRP Report No. 116, what is the annual occupational equivalent dose limit for an extremity?
 - A. 0.5 Sv
 - B. 1.5 Sv
 - C. 5 Sv
 - D. 15 Sv
 - E. 50 Sv

Answers for this section:

1. C
2. B
3. C
4. D
5. A

Fill in the Blank

The candidate must type in the correct response:

1. According to MQSA regulations, the calculated average glandular dose to the ACR phantom for a single craniocaudal view must be less than _____ mGy.

Answer = 3

Drag and Drop

1. Point and click on the x-ray tube.



Answer: Clicking any place inside the yellow box is correct.