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39	A	B	C	D	E

PRACTICE QUESTIONS

UAE Ministry Of Health And Prevention

RADTN

Radiology Tech

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for UAE Ministry Of Health And Prevention **RADTN** , each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **RADTN**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

A patient is scheduled for a CT examination. According to the ALARA principle, which of the following actions best demonstrates its application in radiology practice?

- ☐ A Use the highest available mA and kVp to obtain the clearest image possible
- ☒ B Optimize exposure parameters to the lowest dose that still yields a diagnostic-quality image
- ☐ C Repeat the examination if any motion artifact is detected, regardless of dose
- ☐ D Avoid using shielding for pediatric patients to reduce repeat exposures

ANSWER B

WHY ALARA (As Low As Reasonably Achievable) means using the lowest radiation dose that still produces a diagnostic-quality image. Option A contradicts ALARA by maximizing dose, option C ignores dose considerations, and option D is incorrect because shielding is a standard protective measure for pediatric patients.

QUESTION 2

SINGLE CHOICE

For a PA chest radiograph performed at 72 inches source-to-image distance (SID), where should the central ray be directed?

- ☐ A At the level of the xiphoid process
- ☒ B At the level of T7 (inferior angle of the scapula)
- ☐ C At the level of T2 (jugular notch)
- ☐ D At the level of the iliac crest

ANSWER B

WHY For a PA chest radiograph, the central ray is centered at the level of T7 (inferior angle of the scapula) to include all relevant thoracic anatomy, including the apices and costophrenic angles, on a properly collimated image.

QUESTION 3

SINGLE CHOICE

Which factor most directly affects the spatial resolution of a digital radiographic image?

- ☒ **A** Pixel size
- ☐ **B** kVp
- ☐ **C** mAs
- ☐ **D** Beam restriction

ANSWER A

WHY Spatial resolution in digital radiography is primarily determined by pixel size — smaller pixels yield higher spatial resolution. kVp and mAs affect image contrast and density, while beam restriction affects patient dose and scatter, not spatial resolution directly.

QUESTION 4

SINGLE CHOICE

In the x-ray tube, bremsstrahlung (braking) radiation is produced when:

- ☐ **A** An electron transitions between inner atomic shells of the target material
- ☒ **B** A high-speed electron is decelerated by the nucleus of a target atom
- ☐ **C** Two electrons in the filament collide and release energy
- ☐ **D** Photons interact with the anode surface

ANSWER B

WHY Bremsstrahlung ('braking radiation') is produced when a high-speed projectile electron is decelerated by the strong nuclear field of a target atom, converting kinetic energy into a photon. Option A describes characteristic radiation, not bremsstrahlung.

QUESTION 5

MULTIPLE CHOICE

Which of the following are considered stochastic effects of ionizing radiation? (Choose two.)

- ☒ **A** Leukemia induction
- ☐ **B** Skin erythema
- ☒ **C** Hereditary genetic mutations in offspring
- ☐ **D** Cataract formation

ANSWER A - C

WHY Stochastic effects (cancer induction and hereditary genetic effects) have no threshold dose and their probability increases with dose. Skin erythema (B) and cataract formation (D) are deterministic (tissue reaction) effects that have a threshold dose and severity increases with dose.

QUESTION 6

SINGLE CHOICE

Before administering an iodinated contrast medium for a CT scan, what is the most important initial patient assessment for the radiologic technologist?

- ☐ **A** Verify the patient's fasting status
- ☒ **B** Screen for allergies, particularly to iodine or shellfish, and assess renal function
- ☐ **C** Confirm the patient has signed an insurance consent form
- ☐ **D** Check the patient's blood glucose level

ANSWER B

WHY Screening for contrast allergies (especially iodine/shellfish) and assessing renal function (e.g., recent creatinine/eGFR) are the most critical safety steps before iodinated contrast administration to prevent anaphylaxis and contrast-induced nephropathy.

QUESTION 7

SINGLE CHOICE

According to international radiation protection guidance (ICRP), the annual occupational effective dose limit for radiation workers is:

- ☐ A 1 mSv per year
- ☒ B 20 mSv per year averaged over 5 years, with no single year exceeding 50 mSv
- ☐ C 100 mSv per year
- ☐ D 500 mSv per year

ANSWER B

WHY The ICRP-recommended occupational dose limit is 20 mSv per year averaged over 5 years (100 mSv cumulative), with the constraint that no single year exceeds 50 mSv. Option A (1 mSv) is the public limit; options C and D exceed the occupational limit.

QUESTION 8

SINGLE CHOICE

On a lateral lumbar spine radiograph, the spinous processes should be visualized:

- ☐ A Superimposed on the vertebral bodies
- ☒ B In the center of the vertebral bodies with open intervertebral disc spaces
- ☐ C Lateral to the pedicles
- ☐ D Not visible due to superimposition

ANSWER B

WHY A correctly positioned lateral lumbar spine shows the spinous processes in the center of the vertebral bodies with open intervertebral disc spaces. Superimposed spinous processes indicate rotation, which is a positioning error.

QUESTION 9

MULTIPLE CHOICE

Which of the following items are absolute contraindications for a patient entering the MRI scan room? (Choose two.)

- ☒ **A** Implanted cardiac pacemaker (non-MRI conditional)
- ☐ **B** Dental fillings made of amalgam
- ☒ **C** Ferromagnetic intracranial aneurysm clip
- ☐ **D** External metallic eyewear

ANSWER A • C

WHY Non-MRI-conditional pacemakers (A) and ferromagnetic aneurysm clips (C) are absolute contraindications due to risks of device malfunction, heating, or movement causing patient harm. Amalgam dental fillings (B) are generally safe, and external eyewear (D) is a relative concern that can be removed before scanning.