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39	A	B	C	D	E

PRACTICE QUESTIONS

Saudi Commission For Health Specialties (SCFHS)

DRAD

Diagnostic Radiology Exam

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Saudi Commission For Health Specialties (SCFHS) DRAD , 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, DRAD
- 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 16-year-old boy presents with chronic deep bone pain in the distal femur. Radiograph shows a mixed lytic and sclerotic lesion with cortical destruction, a sunburst periosteal reaction, and Codman's triangle. Which is the MOST likely diagnosis?

- ☐ A Ewing sarcoma
- ☒ B Osteosarcoma
- ☐ C Chondrosarcoma
- ☐ D Osteomyelitis

ANSWER B

WHY Osteosarcoma classically occurs in adolescents, involves the metaphysis of long bones (especially around the knee), and shows aggressive features such as sunburst periosteal reaction, Codman's triangle, and mixed lytic/sclerotic matrix (osteoid). Ewing sarcoma typically shows an 'onion-skin' periosteal reaction and is purely lytic. Chondrosarcoma shows chondroid (rings and arcs) matrix and usually affects older adults. Osteomyelitis lacks this aggressive neoplastic appearance.

QUESTION 2

SINGLE CHOICE

Which chest radiograph finding is MOST characteristic of primary pulmonary tuberculosis?

- ☐ A Cavitory lesion in the apical posterior segment of the upper lobe
- ☐ B Fibronodular changes in both upper lobes
- ☒ C Hilar lymphadenopathy with a peripheral parenchymal opacity (Ghon focus)
- ☐ D Extensive pleural effusion in an adult

ANSWER C

WHY Primary TB classically presents with the Ghon complex: a peripheral parenchymal lesion (Ghon focus) plus ipsilateral hilar or mediastinal lymphadenopathy. Post-primary (reactivation) TB characteristically shows apical/posterior upper lobe or superior segment lower lobe cavitation and fibrosis. Extensive pleural effusion is a possible but not the most characteristic feature.

QUESTION 3 SINGLE CHOICE

A screening mammogram shows a circumscribed oval mass on the left breast, partially visualized on prior studies with no change over 2 years. Which BI-RADS category should be assigned?

- ☒ **A** BI-RADS 2 – Benign
- ☐ **B** BI-RADS 3 – Probably benign
- ☐ **C** BI-RADS 4 – Suspicious
- ☐ **D** BI-RADS 1 – Negative

ANSWER A

WHY A finding that the radiologist characterizes as benign (such as a stable, circumscribed mass or a simple cyst) is assigned BI-RADS 2. BI-RADS 3 (probably benign) requires short-interval follow-up and is reserved for lesions not proven benign but with a $\leq 2\%$ risk of malignancy. Stability over 2 years is reassuring and supports a benign (category 2) assessment. BI-RADS 1 is used when there are no findings at all.

QUESTION 4 SINGLE CHOICE

Which sign on non-contrast CT is the EARLIEST indicator of an acute ischemic infarction in the middle cerebral artery territory?

- ☒ **A** Loss of gray–white matter differentiation in the insular cortex (insular ribbon sign)
- ☐ **B** Mass effect and midline shift
- ☐ **C** Hemorrhagic transformation
- ☐ **D** Well-defined wedge-shaped hypodensity

ANSWER A

WHY The earliest visible CT sign of MCA infarction is the loss of gray–white differentiation along the insular ribbon, along with effacement of cortical sulci and obscuration of the lentiform nucleus. Well-defined hypodensity, mass effect, and hemorrhagic transformation appear later. Early CT changes can be subtle, prompting use of CT perfusion or MRI with DWI when available.

QUESTION 5 SINGLE CHOICE

Which imaging feature MOST reliably distinguishes a closed-loop small bowel obstruction from a simple small bowel obstruction?

- ☐ A Dilated small bowel loops proximal to a transition point
- ☐ B Multiple air-fluid levels in a 'stepladder' pattern
- ☒ C A C- or U-shaped dilated bowel loop with mesenteric vessels converging to a point of torsion
- ☐ D Absence of gas in the colon

ANSWER C

WHY A closed-loop obstruction occurs when a bowel segment is occluded at two adjacent points, often with a mesenteric twist. The hallmark is a C- or U-shaped dilated loop whose mesenteric vessels converge toward the point of twisting ('whirl sign'), with high risk of strangulation and ischemia. The other features (proximal dilation, stepladder air-fluid levels, absent colonic gas) are common to simple obstruction as well.

QUESTION 6 SINGLE CHOICE

Which radiographic finding is the MOST specific sign of pneumoperitoneum on an upright chest radiograph?

- ☒ A Free air under the diaphragm
- ☐ B Elevated hemidiaphragm
- ☐ C Bilateral pleural effusions
- ☐ D Subcutaneous emphysema

ANSWER A

WHY Free air under the diaphragm on an upright chest film is the classic, most specific sign of pneumoperitoneum, usually from a perforated viscus. The other findings may be associated but are nonspecific. The supine film may show Rigler's sign (gas on both sides of the bowel wall) or the falciform ligament sign, but free subdiaphragmatic gas on upright film remains the most reliable indicator.

QUESTION 7 SINGLE CHOICE

An abdominal CT shows an exophytic right renal mass containing macroscopic fat (negative HU areas measuring below -30 HU). Which is the MOST likely diagnosis?

- ☐ A Renal cell carcinoma
- ☐ B Transitional cell carcinoma
- ☒ C Angiomyolipoma
- ☐ D Renal abscess

ANSWER C

WHY Demonstration of macroscopic fat within a renal lesion is essentially diagnostic of an angiomyolipoma (a benign mesenchymal tumor containing fat, smooth muscle, and abnormal vessels). RCC typically does not contain macroscopic fat unless it is the rare fat-containing variant, and TCC is a urothelial lesion seen as a filling defect rather than a fat-containing mass. A renal abscess shows fluid/pus, not fat.

QUESTION 8 SINGLE CHOICE

Which strategy MOST effectively reduces radiation dose while preserving diagnostic image quality in adult abdominal CT?

- ☐ A Increasing tube voltage (kVp) to 140
- ☐ B Repeated multiphase scanning through the same region
- ☒ C Using automated tube current modulation and adjusting kVp to patient size
- ☐ D Decreasing pitch to 0.1

ANSWER C

WHY Automated tube current modulation (ATCM) adjusts mA based on patient attenuation, and lowering kVp for slender patients reduces dose substantially while maintaining or improving image quality (especially with iodinated contrast). Higher kVp (140) increases dose. Decreasing pitch increases overlap and dose. Unnecessary multiphase acquisitions increase cumulative dose and should be avoided when possible.

QUESTION 9

MULTIPLE CHOICE

Which of the following are recognized CT patterns of intracranial hemorrhage? (Choose two.)

- ☒ **A** Epidural hematoma – biconvex (lens-shaped) hyperdensity that does not cross suture lines
- ☐ **B** Subdural hematoma – crescent-shaped collection that can cross suture lines but not dural reflections
- ☐ **C** Subarachnoid hemorrhage – biconvex hyperdensity confined to a vascular territory
- ☒ **D** Intraventricular hemorrhage – layering of blood in the dependent portion of the ventricles

ANSWER A • D

WHY Epidural hematomas are classically biconvex/lentiform and do not cross cranial sutures because the dura is firmly attached there. Intraventricular hemorrhage often shows a CSF–blood level in the occipital horns on supine CT. Subdural hematomas are crescent-shaped and DO cross sutures but are limited by dural reflections (falx, tentorium). Subarachnoid hemorrhage typically fills sulci, basal cisterns, or fissures — it is not a biconvex collection.