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Brainware University
Barasat, Kolkata -700125

Term End Examination 2025-2026

Programme – B.Sc.(MRIT)-2022/B.Sc.(MRIT)-2023/B.Sc.(MRIT)-2024

**Course Name – Radiographic Techniques of Mammography, DEXA, Oral Radiography
with Image Interpretation**

Course Code - BMRITC301

(Semester III)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Identify the benefit associated with DEXA Scan
 - a) It is simple, quick and noninvasive procedure
 - b) No anesthesia is required
 - c) The amount of radiation used is extremely small
 - d) All of these
- (ii) Identify the common site of DEXA scan
 - a) Chest
 - b) Skull
 - c) Proximal Hip & Spine
 - d) Extrimities
- (iii) Select the most common alternatives to DXA Scan
 - a) QCT
 - b) QUS
 - c) Both 1 & 2
 - d) None of these
- (iv) What type of radiation used in DEXA Scan?
 - a) Ionizing radiation
 - b) Non ionizing Radiation
 - c) Particulate radiation
 - d) Sound Wave
- (v) 1 Gy is equivalent to
 - a) 1 J/kg
 - b) 10 J/kg
 - c) 0.1 J/kg
 - d) 100 J/Kg
- (vi) Which of the following medical conditions is most commonly assessed using a DEXA scan?
 - a) Diabetes
 - b) High Blood Pressure
 - c) Osteoporosis
 - d) Allergies
- (vii) Identify the correct statement
 - a) In commercially available DXA systems, the method by which low and high energy
 - b) The need for excellent spatial registration between low and high energy images is critical,

images are acquired varies according to manufacturer

- c) Misregistration can lead to substantial errors d) All of these
- (viii) DEXA equipment is similar to the Plain radiography equipment in terms of
- a) Using ionizing radiation b) Using x-ray
- c) Both 1 & 2 d) Using gamma ray
- (ix) Identify the factor responsible for quantity of x-ray photon in DEXA equipment?
- a) kVp b) Ma
- c) mAs d) Filter
- (x) Choose the correct statement for central DEXA
- a) Central DEXA is used to measure bone mineral density (BMD) in the central skeleton, typically the lumbar spine and hip. b) It is the gold standard for diagnosing osteoporosis and assessing fracture risk.
- c) The radiation exposure from a central DEXA scan is very low, typically less than that of a standard chest X-ray. d) All of these
- (xi) Breast cancer is detected on the basis of which types of sign on the mammogram
- a) Architectural distortion of normal tissue patterns caused by the disease b) Asymmetry between corresponding regions of the left and right breasts
- c) The characteristic morphology of a tumor mass, which can include irregular margins and speculations d) All of these
- (xii) Identify the additional mammographic projection used in diagnostic mammography
- a) Cleavage view b) Tangential view
- c) Extended CC d) All of these
- (xiii) Select the advantage of digital mammography over conventional mammography
- a) Less scan time b) Offer the 3D Image formation
- c) Superior contrast & Resolution d) All of these
- (xiv) Choose the correct statement about compression device used in mammography
- a) It should be light weight b) It should be Radiolucent
- c) It should be radiopaque d) Both 1&2
- (xv) Identify the anatomical structure shown by arrow.



a) Nipple

b) Pectoralis Muscle

c) Areola

d) Inframammary Fold

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain Mammographic radiation dose. (3)
3. Write a note on potential risks associated with DEXA scans (3)
4. Explain Magnification Mammography (3)
5. Name the factors that can affect the accuracy of a DEXA scan. (3)
6. Explain Mammographic dose. (3)

OR

Illustrate Anode Heel Effect and Line-Focus Principle (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Write a notes on Mammography equipment with a diagram. (5)
8. Summarize the radiological projection for mammography. (5)
9. Summarize the features of radiographic equipment used in intraoral dental radiography. (5)
10. Summarize the CBCT and its features. (5)
11. Explain the different types of Dental Radiography technique. (5)
12. Explain the methodology in DEXA Scan (5)

OR

Justify the term SD in context of DEXA. (5)

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