

B. Sc. MEDICAL TECHNOLOGY (RADIOGRAPHY & IMAGING) (BRIT)
SEMESTER -IV EXAMINATION, JUNE-2026

(BRIT401) RADIOGRAPHIC AND SPECIAL X-RAY EQUIPMENT

[Time allotted: Three Hours]

[Max Marks: 100]

Note: Read all the instructions carefully

Answer all questions in serial order. Draw suitable diagrams wherever necessary

Q. 1. Objective type questions: (Attempt All)

(10 x 02 = 20)

(Very short/ short answer/ MCQ/ One liners/ Fill in the blanks/ True/False)

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| <p>a. Fluoroscopy table is made of: (PO1 CO2)</p> <ol style="list-style-type: none"> Lead Aluminum Wood None of the above <p>b. Which one of the following is not controlled from the control panel of a radiography machine? (PO1 CO1)</p> <ol style="list-style-type: none"> kVp mA FFD Exposure time <p>c. Which among the followings delivers the lowest radiation dose to patient? (PO1 CO2)</p> <ol style="list-style-type: none"> Pelvis X-ray Dental X-ray Angioplasty Fluoroscopy <p>d. Mass miniature radiography was historically used for which purpose (PO1 CO2)</p> <ol style="list-style-type: none"> Screening for tuberculosis Dental X-rays Cardiac imaging None of the above <p>e. What is the primary advantage of mobile radiography unit? (PO1 CO2)</p> <ol style="list-style-type: none"> High image resolution Portability Low cost High cost | <p>f. Which of the following devices is based on X-ray imaging? (PO1 CO1)</p> <ol style="list-style-type: none"> Fluoroscopy MRI Ultrasound Endoscopy <p>g. Which of the following parameter is typically adjustable on the C-arm control panel? (PO1 CO3)</p> <ol style="list-style-type: none"> Detector size Patient positioning Tube current None of them <p>h. During mobile radiography exposure, the minimum distance of the radiographer from the patient should be (PO1 CO1)</p> <ol style="list-style-type: none"> 0.5 meter 1 meter 2 meters 3 meters <p>i. Which of the following is not an exposure factor? (PO1 CO2)</p> <ol style="list-style-type: none"> kVp mA Penumbra Exposure time <p>j. OPG is used to image (PO1 CO1)</p> <ol style="list-style-type: none"> Teeth & jaws Muscles Bones All of the above |
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Q. 2. Short notes/ Short answer type questions (Attempt any Five)

(05 x 04 = 20)

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| <p>a. Write a short note on properties of X-rays.</p> <p>b. Write a short note on different types of interlocking in an X-ray unit.</p> <p>c. Explain the technique and purpose of spot filming in fluoroscopy.</p> <p>d. Discuss in brief about the stationary radiation shielding used in radiography room.</p> <p>e. Discuss in brief about the technique of intra-oral radiography.</p> <p>f. Write a short note on some radiation protective devices used during radiography.</p> <p>g. Write a short note on cephalometry</p> | <p align="right">(PO1 CO2)</p> <p align="right">(PO1 CO2)</p> <p align="right">(PO1 CO3)</p> <p align="right">(PO1 CO2)</p> <p align="right">(PO2 CO1)</p> <p align="right">(PO1 CO2)</p> <p align="right">(PO1 CO1)</p> |
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Q. 3. Structured questions (Attempt any Three)

(03 x 10 = 30)

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| <p>a. Explain about X-ray tube housing with a neat diagram.</p> <p>b. Describe the basic components and working principles of a fluoroscopy unit. Explain the automatic brightness control.</p> <p>c. With a neat diagram describe the design and principle of a mass miniature radiography.</p> <p>d. Discuss the basic principle and application of a bone mineral densitometer.</p> | <p align="right">(PO1 CO1)</p> <p align="right">(PO1 CO1)</p> <p align="right">(PO1 CO2)</p> <p align="right">(PO1 CO3)</p> |
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Q. 4. Long Answer/ Essay type questions (Attempt any Two)

(02 x 15 = 30)

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| <p>a. Draw a neat diagram of radiography equipment and describe various components of it.</p> <p>b. Draw a neat diagram of image intensifier tube and explain how fluoroscopy is performed.</p> <p>c. What is the underlying principle of conventional tomography? How it is different from radiography?</p> | <p align="right">(PO4 CO2)</p> <p align="right">(PO5 CO2)</p> <p align="right">(PO1 CO2)</p> |
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