

06/01/25

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Paper Code: BRIT-201

A (SVSU:2023-24/R)

Enrollment No.														
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B.Sc. Radio Imaging Technology (BRIT) 2nd Year
Subject: Radiation Physics and Radiation Protection

Time: 3 Hours

M.M. 70

Note: All questions are compulsory. Make diagrams wherever required.

Q1. Long answer type questions. Attempt any three.

(10x3=30)

- Explain interaction of ionizing radiation with matter.
- Explain darkroom design and its accessories.
- What is film processing? Explain any one type of film processing.
- Explain X-ray tube and all the parts of X-ray tube with suitable diagram.

Q2. Short answer type questions. Attempt any six.

(5x6=30)

- Explain the image intensifier tube with suitable diagram.
- What are the personal monitoring devices, explain any one.
- Give a brief description on biological effect of radiation.
- What is radiation unit and quantity? Explain any three.
- Explain image receptor, its construction and types of image receptor.
- Explain linear grid, crossed grid, focused grid and parallel grid.
- Explain scintillation detector its construction, working principle and draw a well labelled diagram of ionization chamber.
- Explain all the methods of cooling of X-ray tube.

Q 3. Very short answer type questions. Attempt any five.

(1x5=5)

- What is air gap technique?
- What is collective dose?
- Draw a diagram of film badge and name all the filters.
- What is anode heel effect?
- Write difference between deterministic effect and stochastic effect.
- Explain radiation protection of patient.

Q 4. Multiple choice questions. Attempt all.

(1x5=5)

- Which component of a personal radiation monitoring device is responsible for detecting radiation and converting it into a measurable signal?
 - Filter
 - Detector
 - Alarm
 - Display
- Which type of radiation monitoring device provides real-time readings of radiation levels in a specific area?
 - ionization chamber
 - Geiger-Muller counter
 - Pocket chamber
 - Film badge
- Which of the following materials is commonly used for target in x-ray tube?
 - Copper
 - Tungsten
 - Aluminum
 - Lead
- What is a Thermo Luminescent Dosimeter (TLD)?
 - A device used to measure light intensity
 - A device used to measure radiation exposure
 - A device used to measure sound intensity
 - A device used to measure radiation exposure
- Which of the following factors has the greatest impact on image contrast in radiology?
 - Exposure time
 - Patient thickness
 - Kilovoltage (kV)
 - Milliamperage (mA)

08/09/25

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Paper Code: BRIT-202

A (SVSU:2023-24/R)

Enrollment No.

B.Sc. Radio Imaging Technology (BRIT) 2nd Year**Subject: Advance Radiographic Technique and Procedure****Time: 3 Hours****M.M. 70***Note: All questions are compulsory. Make diagrams wherever required.***Q1. Long answer type questions. Attempt any three.****(10x3=30)**

- What is IVU? Explain IVU in detail.
- Explain Barium Swallow in detail for evaluation of esophageal disorders.
- Describe PTC in detail for evaluation of biliary tract obstructions and hepatobiliary diseases.
- Define Contrast Media. Explain types of Contrast Media and adverse reactions of contrast media in detail.

Q2. Short answer type questions. Attempt any six.**(5x6=30)**

- Explain role of Radio Technologist in Radiology department.
- Define Arthrography. What are the Indication and Contraindication of Arthrography?
- What is Myelography? Write about procedure of Lumbar Myelography.
- What are the Indication and Contraindication of OCG? Write about Patient Preparation and procedure of OCG.
- Describe the technique used in sialography.
- What are the challenges of performing radiography on Pediatric Patient?
- What is the purpose of OT Radiography? Write about Challenges of Performing OT Radiography.
- Describe the techniques used to minimize radiation dose in pediatric radiography.

Q3. Very short answer type questions. Attempt any five.**(1x5=5)**

- What anatomical structures are visualized during a Barium Swallow?
- Draw the neat and labelled diagram of biliary tract.
- What are the routes of administration of Contrast Media?
- Define Positive and negative Contrast Media with examples.
- Write about equipments used in IVP Procedure.
- What anatomical structures are visualized during sialography.

Q4. Multiple choice questions. Attempt all.**(1x5=5)**

- What does IVU stand for.
 - Intravenous Uptake
 - Intra-Vascular Ultrasound
 - Intravenous Urogram
 - Intra-Arterial Urogram
- How contrast is typically administered in IVU?
 - Orally
 - Intravenously
 - Intramuscularly
 - Subcutaneously
- What are common indications for performing barium swallow?
 - Evaluating kidney function
 - Assessing lung pathology
 - Diagnosing esophageal disorders
 - Visualizing the small intestine
- What is the primary purpose of RGU?
 - Visualizing the upper gastrointestinal tract
 - Assessing kidney function
 - Evaluating urethral abnormalities
 - Examining joint structures
- What is the contrast medium used in myelography?
 - Barium sulfate
 - Gastrograin
 - Iodinated contrast
 - Gadolinium

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Paper Code: BRIT-203

C (SVSU:2023-24/R)

Enrollment No.

B.Sc. Radio Imaging Technology (BRIT) 2nd YearSubject: Computed Tomography Technique and Equipment

Time: 3 Hours

M.M. 70

*Note: All questions are compulsory. Make diagrams wherever required.***Q1. Long answer type questions. Attempt any three.**

(10x3=30)

- Discuss clinical protocol for CECT Thorax.
- Explain the equipment used in CT.
- Explain in detail about 3rd, 4th, and 5th generation of CT.
- Explain following CT artifact: Patient motion artifact, Aliasing artifact, Metallic artifact, and Beam Hardening artifact.

Q2. Short answer type questions. Attempt any six.

(5x6=30)

- Write clinical protocol for CT PNS.
- Write advantage and disadvantage for 2nd generation CT.
- Draw a well labeled diagram of DSCT.
- What is basic principle of CT?
- Write patient preparation for CECT Abdomen.
- What is CT Analytical method?
- Write about recording and communication system in CT.
- What is CT Gantry? Write about its function.

Q 3. Very short answer type questions. Attempt any five.

(1x5=5)

- Define electron beam CT.
- Define DSCT.
- Write advantage of 1st generation CT.
- Define detector.
- What is use of pre-patient collimator?
- What is filter?

Q 4. Multiple choice questions. Attempt all.

(1x5=5)

- To perform sampling and assigns shades of gray to the pixels in the digital matrix
 - ADC
 - Amplifier
 - Sample Hold Unit
 - None
- In slipping power and signals transmitted to gantry with help of
 - Ring
 - Brush
 - Ring and brush both
 - None
- Chronic subdural hematoma is indication for
 - CT PNS
 - CT Head
 - CT Temporal bone
 - Both i & ii
- CT number for Air
 - 10-40
 - +1000
 - 1000
 - 0
- 3D representation of Pixel known as
 - Matrix
 - window level
 - Voxel
 - window width

Subject: Advance Equipment's for Radiography & Processing Techniques

M.M. 70

(10x3=30)

- (5x6=30)**

- (1x5=5)**

- (1 x 5 = 5)**

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