BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(MRIT)-2022/B.Sc.(MRIT)-2023/B.Sc.(MRIT)-2024/B.Sc.(MRIT)-2025

Course Name – Radiographic Image Processing Techniques

Course Code - BMRITC203

(Semester II)

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 correct thickness of the base layer of Medical X-ray film.
   a) 0.18 mm b) 0.03 mm
   c) 1.5 mm d) 0.0001 mm

(ii) Select the incorrect use of Intensifying screens out of the following.
   a) Mammography b) Ultrasound
   c) Both d) None of these

(iii) Identify the Single screen cassettes to the modality they are used in.
   a) Mammography b) Angiography
   c) Orthodontic radiography d) Ultrasound

(iv) Identify the function of the accelerator in the developer.
   a) To stop the development b) To decrease the rate of development
   c) A & B d) To increase the rate of development

(v) Identify which company developed first automatic film processor in England without drying section.
   a) Kodak b) Siemens
   c) GE d) Potter

(vi) Identify the false statement about developer.
   a) Developer solution is acidic b) Sodium sulphite acts as preservative
   c) Potassium bromide acts as an antifogging agent d) Mettol and hydroquinone acts as a reducing agent

(vii) Infer the material used for identification in radiography.
   a) Al b) Cu
   c) Cl d) Pb

(viii) Judge the maximum wattage of safe light.

a) 100 watts b) 200 watts
c) 45 watts d) 15 watts

(ix) Select the number of doors in passbox.

a) 1 b) 2
c) 3 d) 4

(x) Choose the ideal material for making front surface of the cassette.

a) Plastic b) Copper
c) Lead d) Iron

(xi) Recognize the vehicle matrix of X-ray film emulsion.

a) Water b) Gelatine
c) Polyester d) Silver iodide

(xii) Distinguish the type of screen that provides the highest image resolution.

a) Fast b) Medium
c) Slow d) Rare-earth

(xiii) Explain which factor accelerates film fog due to age.

a) Low humidity b) Heat
c) Shielding d) Cold storage

(xiv) Explain the cause of the crossover effect in film-screen systems.

a) Screen aging b) Film fog
c) Light reaching the opposite emulsion d) High Vp

(xv) Classify the imaging system that uses photo-stimulable phosphor plates.

a) DR b) CT
c) MRI d) Computed Radiography

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Write a short note on general practice of the maintenance of Intensifying screen. (3)
3. Explain basic instruction to be followed inside darkroom. (3)
4. Explain emulsion and its functions. (3)
5. Distinguish between film contrast and density. (3)
6. Explain latitude and its role in providing optimal image quality. (3)

OR

Explain the use of characteristics curve. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Write the process of the Conversion of latent image to visible image. (5)
8. Describe various instructions to be followed while handling Chemicals in darkroom. (5)
9. Illustrate the constituents of developer solution. (5)
10. Illustrate the constituents of fixing solution. (5)
11. Explain the construction of intensifying screen with diagram. (5)
12. Explain the structure of X-ray film with a diagram. (5)

OR

Explain the different radiographic film use in radiography according to applications. (5)

****