14403

BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Sc.(MRIT)-2022/B.Sc.(MRIT)-2023/B.Sc.(MRIT)-2024
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 material commonly use to make the substratum layer or binding layer of X-ray film.
   a) Silver bromide crystals b) Gelatin plus acetone and water
   c) Gelatin d) None of these

(ii) Identify the correct material that is use to made emulsion of X-ray film.
   a) Gelatin b) Silver halide crystal
   c) Both d) None of these

(iii) Omit the incorrect statement for green sensitive film.
   a) Uses T-grain silver halide b) Antistatic layer present
   c) With less exposure, more sharp image d) Does not require green light emitting screens

(iv) Select the purpose of the lead lining at the back of the cassettes.
   a) Prevent back scatter of radiation b) To decrease the radiation dose of the patient
   c) None d) Both

(v) Identify the phosphor material use to manufacture X-ray film.
   a) Silver nitrate b) Silver bromide
   c) Calcium tungstate d) Sodium sulphite

(vi) Select the function of screen out of the following.
   a) Energy of the light to X-ray beam b) Energy of the X-ray beam to light
   c) Energy of the light to UV rays d) Energy of the UV to light rays

(vii) Select the true significance of Fluorescence.
   a) Light emitted by screen within 10-8 sec b) Light emitted by screen after 10-8 sec

c) Light emitted by screen at 10-8 sec
d) None of these

(viii) Select the active layerthat converts radiation into visible light.

a) Phosphor layer
b) Base
c) Protective layer
d) Reflective layer

(ix) Identify the purpose of the fixing is.

a) To remove unexposed silver halides
b) To remove silver ions
c) To make the film soft
d) To make the film more thick

(x) Select which of these are not a step in automatic processor.

a) Rinsing
b) Developing
c) Fixing
d) Washing

(xi) Selec the ideal location of Darkroom.

a) Near the radiographic room
b) Away from the radiographic room
c) In the center of the radiographic room
d) None of these

(xii) Identify the material used to make the floor of the dark room.

a) Resistance to chemicals and staining
b) Non porous
c) Non slippery
d) All

(xiii) Estimate the minimum distance from the safe light to the film.

a) 0.10 meter
b) 1.2 meters
c) 5 meters
d) 15 meters

(xiv) select the best way to handle X-ray films.

a) Handle them with bare hands
b) Use gloves to handle them
c) Handle them with damp hands
d) Use tweezers to handle them

(xv) Predict the speed of film depends on.

a) Thickness of base
b) Film Density
c) Thickness of emulsion
d) Latitude

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explain the structure of intensifying screen. (3)
3. Describe the methods of loading and unloading of cassettes in darkroom. (3)
4. Explain emulsion and its functions. (3)
5. Explain film base and ideal properties of film base. (3)
6. Compare automatic processing to manual processing technique (3)

OR

Differentiate between cassettes used in CR and conventional radiography. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Evaluate various ventilation conditions of darkroom. (5)
8. Describe x-ray film wrappings. (5)
9. Describe the various subsystems of automatic film processor. (5)
10. Explain the manual film processing procedure, including its steps, advantages, and disadvantages. (5)
11. Explain various types of entrance used in darkroom. (5)
12. Explain the construction of x-ray cassette with proper diagram? (5)

OR

Explain the construction of intensifying screen with diagram. (5)

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