THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0321] MARCH 2021 Sub. Code: 1847

(AUGUST 2020 EXAM SESSION)

B.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY

SECOND YEAR (Regulation 2018-2019)

PAPER II – X-RAY FILM/IMAGE PROCESSING TECHNIQUES INCLUDING DARK ROOM TECHNIQUES

Q.P. Code : 801847

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Discuss in detail about double coated X-ray film structure?
2. Discuss in detail about automatic film processing.
3. Define radiographic contrast? Discuss various that affect contrast?

II. Write notes on: **(8 x 5 = 40)**

1. Look Up Table data (LUT) in digital radiography.
2. Effect of blur on visibility of image.
3. Rare earth screens.
4. Artifacts in X-ray films.
5. Uses of single coated X-ray film.
6. Intensifying screen.
7. Dark room.
8. Types of cassettes.

III. Short answers on: **(10 x 3 = 30)**

1. Segmentation collimation mask.
2. Temperature in Developing.
3. Cassette pass box.
4. Tests for light leakage in X-ray cassette.
5. Screen mottle.
6. CR image phosphor.
7. Double sided film.
8. Grid.
9. Sodium thiosulphate.
10. Dark room Processing faults.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0222] **FEBRUARY 2022** **Sub. Code: 1847**
(AUGUST 2021 EXAM SESSION)

B.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR (Regulation 2018-2019)
PAPER II – X-RAY FILM/IMAGE PROCESSING TECHNIQUES INCLUDING DARK ROOM TECHNIQUES
Q.P. Code : 801847

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Describe the constituents of fixer and developer. Explain the manual film developing.
2. Write in detail about the construction of intensifying screen.
3. Write in detail about the Digital image processing.

II. Write notes on: **(8 x 5 = 40)**

1. Edge restoration and noise suppression in digital radiography.
2. Noise.
3. Artifacts in X-ray films.
4. Constructions of automatic film processor.
5. Dark room.
6. Types of cassettes.
7. Characteristic curve.
8. Modulation transfer function.

III. Short answers on: **(10 x 3 = 30)**

1. Sodium thiosulphate.
2. Mammography film.
3. Latent image.
4. Grid.
5. Curved cassette.
6. Fog.
7. Various speeds of intensifying screens.
8. Segmentation collimation mask.
9. Base fog.
10. Cassette pass box.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0922] SEPTEMBER 2022 Sub. Code: 1847

(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

B.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY

SECOND YEAR (Regulation from 2018-2019)

PAPER II – X-RAY FILM/IMAGE PROCESSING TECHNIQUES INCLUDING DARK ROOM TECHNIQUES

Q.P. Code : 801847

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on : **(3 x 10 = 30)**

1. Compare and contrast single and double coated films.
2. What is a dark room? Discuss about the various types of entrances of dark room.
3. Write down the various steps involved in the automatic processing of films.

II. Write notes on: **(8 x 5 = 40)**

1. Explain about the components of a developer solution.
2. Write down the method of silver recovery from films.
3. What is a contrast agent and where it is commonly used?
4. Explain about PACS.
5. Write down the common errors encountered during film processing.
6. Write down the factors that reduce the sharpness of radiographic image.
7. Construction of a mammographic film.
8. Discuss about the lighting and viewing condition for film reporting.

III. Short answers on: **(10 x 3 = 30)**

1. Function of fixer.
2. Safe light.
3. What is magnification?
4. Cassette pass box.
5. Write about laser camera.
6. Effect of temperature on developing time.
7. Fog.
8. What is latent image?
9. Precautions to be followed during storage of unexposed films.
10. Optical density.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0423] **APRIL 2023** **Sub. Code: 1847**

B.Sc. RADIOGRAPHY & IMAGING TECHNOLOGY
SECOND YEAR (Regulation 2018-2019 onwards)
PAPER II – X-RAY FILM / IMAGE PROCESSING TECHNIQUES
(INCLUDING DARK ROOM TECHNIQUES)
Q.P. Code: 801847

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on : **(3 x 10 = 30)**

1. Explain in detail about Intensifying Screens.
2. Describe Manual Film Processing in detail.
3. What are the Constituents of Fixer and Developer solution and explain each of them.

II. Write notes on: **(8 x 5 = 40)**

1. Explain about the Speed of Screen Film Combination.
2. PACS.
3. How will you store unexposed X-ray Film?
4. What is Computed Radiography and explain Principle.
5. Rare Earth Screen.
6. Silver recovery.
7. Types of X-ray cassette.
8. Grid and Filters.

III. Short answers on: **(10 x 3 = 30)**

1. Latent Image Formation.
2. What is PENUMBRA?
3. What is Film Latitude?
4. Define Hatch box.
5. Define Film Sharpness.
6. Define Gamma of characteristic curve.
7. Dichroic fog.
8. Safelight.
9. Dark Room Entrance.
10. Sodium thiosulphate.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1123] **NOVEMBER 2023** **Sub. Code: 1847**

B.Sc. RADIOGRAPHY & IMAGING TECHNOLOGY
SECOND YEAR (Regulation 2018-2019 onwards)
PAPER II – X-RAY FILM / IMAGE PROCESSING TECHNIQUES
(INCLUDING DARK ROOM TECHNIQUES)
Q.P. Code: 801847

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on : **(3 x 10 = 30)**

1. Describe about the Automatic Processing Equipments with diagram.
2. Explain about the type of Dark Room Entrance with diagram.
3. What is HD Curve? Describe about the difference densities measured in Characteristic Curve.

II. Write notes on: **(8 x 5 = 40)**

1. What are the Light Sensitive Materials and its uses?
2. Described about the types of X-ray films.
3. What is Safe light? Describe about the types of Safe light.
4. Describe about the Picture archiving and Communication system.
5. Explain about the Modular day light handling system.
6. Explain about the formation of latent image.
7. How will you give care and maintenance of Automatic Process Equipment?
8. What are the different types of Film Artifacts?

III. Short answers on: **(10 x 3 = 30)**

1. What is Acid – Stop bath?
2. Define Quantum Mottle Artifact.
3. What is X-ray Film Hopper?
4. Define Dental X-ray film.
5. What is the preservative and its function?
6. Define Radiographic contrast.
7. What is Tele – Radiography System?
8. Draw a diagram of Dark Room Loading Bench and Master Tank Structure.
9. Define Optical Disc System.
10. What is Lobby light?

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