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.

****

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.

****

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.

******

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.

****

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

[AHS 0424] **APRIL 2024** **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. Draw a design and layout of Dark Room and describe about the types of Dark Room Entrances.
2. What are the constituents of the fixer solution and explain about each Chemical agent?
3. What is Radiographic Contrast? Describe about the types of Contrast.

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

1. What are the factors that affect the developing time?
2. What is Silver recovery? Explain the method of Silver recovery.
3. What are the types of X-ray films?
4. What is the Gamma and Latitude of characteristics curve?
5. How will you store the unexposed X-ray films in the Department?
6. What are Photo – Sensitive materials?
7. Single Coated X-ray film with suitable diagram.
8. Explain about the principle of Laser Camera in the film archiving system.

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

1. Substratum layer.
2. What is Anti – Sludging agent?
3. Define Orthochromatic film.
4. What is Crimp mark artifact?
5. What is Fixing time and Clearing time?
6. Define X- Ray film Hopper.
7. What is Reducing agent?
8. What is X – Ray film Density?
9. Define Picture archiving and communication system.
10. Latent Image Formation.

****