

DIPLOMA IN RADIOGRAPHY & IMAGING TECHNOLOGY
(New Syllabus 2018-2019)
FIRST YEAR
PAPER IV – X-RAY FILM/IMAGE PROCESSING TECHNIQUES

Q.P. Code: 841424

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain about the chemical constituents of fixer and developer?
2. Explain in detail, the construction of dark room with different types of entrances.
3. Explain in detail about Films and their structure and types.

II. Write notes on:

(10 x 5 = 50)

1. What are cassettes? What are the precautions taken in maintenance of cassettes?
2. What are the differences between automatic and manual processing?
3. List the advantages and disadvantages of day light system.
4. Unsharpness in the radiographic image.
5. Describe about image processing mechanism.
6. Discuss about safe light.
7. Rate earth screens.
8. Draw and label the cross section of intensifying screen.
9. Sketch of a Dark room.
10. Laser Camera.

III. Short answers on:

(10 x 2 = 20)

1. What are rare earth metals?
2. Why is pH scale important in processing?
3. What is Hardner? Where it is present?
4. Explain about replenisher.
5. What is safe light filter made up of ?
6. Define Dry bench.
7. Non-screen films.
8. Curved cassettes.
9. Handling of x-ray films.
10. Dry film processing.

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PAPER IV – X-RAY FILM/IMAGE PROCESSING TECHNIQUES

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Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Draw across section view of intensifying screen and explain its function.
2. What is film sharpness? What are the factors affecting film sharpness?
3. What are the general defects noted in the radiograph? Discuss in detail about its causes?

II. Write notes on:

(10 x 5 = 50)

1. What is luminescence and what are its two effects?
2. Define H.D. curve and describe about the characteristic curve.
3. The tests for timers.
4. Explain about modern image processing rooms.
5. Discuss about day light processing.
6. Define the density / contrast of the x-ray film.
7. Name the factors influencing image quality in x-ray film.
8. Functions of gridded cassette.
9. Artifacts during fixing.
10. Quality assurance of processors.

III. Short answers on:

(10 x 2 = 20)

1. What are various sizes of double coated films available?
2. Define Gadolinium Oxysulfide.
3. Why is pH scale important in processing?
4. List the different speed of films.
5. Difference between fluorescence and phosphorescence.
6. Types of fogs.
7. Importance of squeeze rollers.
8. Influence of temperature and film processing.
9. Artifacts in automatic film processing.
10. Define noise of film.

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

[AHS 0321]

MARCH 2021

Sub. Code: 1424

(AUGUST 2020 EXAM SESSION)

DIPLOMA IN RADIOGRAPHY AND IMAGING TECHNOLOGY

FIRST YEAR (Regulation 2018-2019)

PAPER IV – X-RAY FILM/IMAGE PROCESSING TECHNIQUES

Q.P. Code : 841424

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. What is an intensifying screen? Brief on the factors affecting speed of intensifying screen.
2. What is film sharpness? Write about factors affecting film sharpness.
3. Brief on the artifacts in conventional film radiography, CR and DR.

II. Write notes on:

(10 x 5 = 50)

1. Safe light.
2. Penumbra.
3. Rare earth screen.
4. Automatic film processor.
5. Types of x-ray cassette.
6. Screen mottle.
7. Layers in x-ray film.
8. Brief on CR working mechanism with a diagram.
9. Accelerator and preservatives in developer solution.
10. Film density.

III. Short answers on:

(10 x 2 = 20)

1. Latent image.
2. Replenisher.
3. Film Fog.
4. Conversion efficiency of screen.
5. Film fixing.
6. Film sharpness.
7. Test for screen film contact.
8. Pass box.
9. Write briefly on film cassette.
10. Characteristic curve.

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[AHS 0122]

JANUARY 2022

Sub. Code: 1424

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

**DIPLOMA IN RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR (Regulation 2018-2019)
PAPER IV – X-RAY FILM / IMAGE PROCESSING TECHNIQUES
*Q.P. Code : 841424***

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. What is an Image quality? Brief on the factors affecting image quality.
2. Describe on the construction of conventional dark room with a line diagram.
3. Describe on the automatic film processor with diagram.

II. Write notes on:

(10 x 5 = 50)

1. Latent image.
2. Intensifying factor.
3. Ingredients in fixer.
4. Different size of screen film.
5. Images unsharpness.
6. CR image phosphor.
7. Developing agent.
8. Characteristic curve.
9. X-ray phosphor.
10. Brief on DR working mechanism with a diagram.

III. Short answers on:

(10 x 2 = 20)

1. Emulsion.
2. Components in fixer solution.
3. Dark Room.
4. Artifacts in xray.
5. Rare earth screens.
6. Base fog.
7. Influence of temperature on film processing.
8. Grid.
9. Replenisher.
10. Test for safe light.

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[AHS 0922]

SEPTEMBER 2022

Sub. Code: 1424

(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

**DIPLOMA IN RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR (Regulation from 2018-2019)
PAPER IV – X-RAY FILM / IMAGE PROCESSING TECHNIQUES**

Q. P. Code: 841424

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

I. Elaborate on:

(3 x 10 = 30)

1. What is film sharpness? What are the factors affecting film sharpness?
2. What are the general defects noted in the Radiograph? Discuss in detail about its causes.
3. Draw and explain the cross sectional view of double side coated X-ray film.

II. Write notes on:

(10 x 5 = 50)

1. Film Developing.
2. What are the precautions used for storage of unexposed X-ray films?
3. What is direct exposure type of X-ray films? What are the advantages of direct exposure type of X-ray film?
4. List the advantages and disadvantages of day light system.
5. Explain about modern image processing rooms.
6. Handling of X-ray Film in Loading and Unloading.
7. How will you test for screen contact?
8. Name the various parts of Cassette and its use in production of radiographic image.
9. Construction of Laser imager and its advantages.
10. Discuss about the speed of intensifying screens and the factors increasing the speed of screen.

III. Short answers on:

(10 x 2 = 20)

1. What are the photosensitive materials?
2. What is Hardener? Where it is present?
3. Define pH scale.
4. What is Radiographic contrast?
5. Define pass box.
6. What is Latent Image?
7. What is panchromatic film?
8. Rare earth intensifying screens.
9. Film Storage of unexposed films.
10. Artifacts in automatic film processing.

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

[AHS 0423]

APRIL 2023

Sub. Code: 1424

**DIPLOMA IN RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR (Regulation 2018-2019 onwards)
PAPER IV – X-RAY FILM / IMAGE PROCESSING TECHNIQUES**

Q. P. Code: 841424

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the characteristics of an X-ray film with diagrams.
2. Discuss in detail about Dry bench and Wet bench. Describe about Film storage.
3. Discuss in details about Automatic Film Processing.

II. Write notes on:

(10 x 5 = 50)

1. What is Image Quality? Describe factors affecting Image Quality.
2. What are Cassettes? Describe precautions in use of cassettes.
3. Describe functions of Accelerator and Preservative in a developer solution.
4. Film fixing.
5. Rare Earth Screen.
6. Latent Image Formation.
7. List the types of intensifying screens and give their advantages.
8. Artifacts during fixing of X-ray film.
9. Define Computed Radiography and describe the principle of CR system.
10. What is silver recovery? Describe any one methods of silver recovery.

III. Short answers on:

(10 x 2 = 20)

1. Define Gadolinium Oxysulfide.
2. Define Fluorescence.
3. Define Radiographic contrast.
4. What is Anti-Halo backing?
5. What is Buffer solution?
6. X-ray Phosphors.
7. What are Photosensitive materials?
8. What is Gelatin?
9. What is Activator?
10. Define Squeeze Roller.

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[AHS 1123]

NOVEMBER 2023

Sub. Code: 1424

**DIPLOMA IN RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR (Regulation 2018-2019 onwards)**

PAPER IV – X-RAY FILM / IMAGE PROCESSING TECHNIQUES

Q. P. Code: 841424

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

I. Elaborate on:

(3 x 10 = 30)

1. Draw a cross section diagram of an Intensifying Screen and list its functions.
2. Write in detail on Manual X-ray Film Processing.
3. Explain in detail, the construction of Dark Room with different types of entrances.

II. Write notes on:

(10 x 5 = 50)

1. What is dark Room illumination and safe light?
2. Latent Image Formation.
3. What is Image Quality? Describe factors affecting Image Quality.
4. How to test for light leakage in X-ray cassettes?
5. List the factors affecting the speed of screen.
6. Describe in detail about Film structure.
7. Construction of Laser images and its advantages.
8. Automatic film processing.
9. Describe about the Computed Radiography system.
10. Define H.D. curve and describe about the characteristic curve.

III. Short answers on:

(10 x 2 = 20)

1. Define Afterglow.
2. Calcium tungstate.
3. Define Dental film.
4. Influence of Temperature on film processing.
5. Pass box in dark room.
6. What is Dichroic fog?
7. Fluorescence.
8. Non-screen films.
9. What is Buffer solution?
10. What is Hardener? Where it is present?
