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

[AHS 0222] **FEBRUARY 2022** **Sub. Code: 2502**
(OCTOBER 2021 EXAM SESSION)

M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR
(Candidates admitted from 2019-2020 onwards – Paper II)
(Candidates admitted from 2020-2021 onwards – Paper III)
PAPER II & III – CONVENTIONAL RADIOLOGICAL AND IMAGING EQUIPMENT
Q.P. Code : 282502

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

I. Elaborate notes on: **(2 x 20 = 40)**

1. Factors influencing Quality and intensity of X –rays.
2. Mammography unit.

II. Write Short Notes on: **(10x6 = 60)**

1. Space charge effect.
2. Focal spot size measurement.
3. Constant potential generator.
4. Anode heel effect.
5. Half value layer.
6. Kilovoltage circuit.
7. Anode rating chart.
8. Advantages of Image intensifier tube over fluoroscopic device.
9. Dental X-ray unit.
10. Various types of grid movements.

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

[AHS 1022] **OCTOBER 2022** **Sub. Code: 2502**

M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR
(Candidates admitted from 2019-2020 onwards – Paper - II)
(Candidates admitted from 2020-2021 onwards – Paper - III)
PAPER II & III - CONVENTIONAL RADIOLOGICAL AND IMAGING EQUIPMENT

Q.P. Code : 282502

Time: Three hours **Maximum : 100 Marks**

Answer ALL Questions

I. Elaborate on: **(2 x 20 = 40)**

1. Different types of Beam Limiting devices and its advantages and Grids, its types and advantages.

2. Construction and working principle of X-ray tubes.

II. Write notes on: **(10 x 6 = 60)**

1. Focal Spot and Focal Track.
2. Filters and its uses.
3. Relays in X-ray equipment.
4. Conventional Fluoroscopic screen.
5. Dental X-ray Unit.
6. Spin Top Test.
7. Potter-Bucky Diaphragm.
8. Automatic exposure control.
9. Vidicon Camera.
10. X-ray Tube housing.

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

[AHS 1023] **OCTOBER 2023** **Sub. Code: 2502**

M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER III - CONVENTIONAL RADIOLOGICAL AND IMAGING EQUIPMENT

Q.P. Code: 282502

Time: Three hours **Maximum: 100 Marks**

Answer ALL Questions

I. Elaborate on: **(2 x 20 = 40)**

1. Functional tests for X-ray Tube: a) Timer b) Focal Spot & c) Beam alignment test.

2. Design and function of mammographic X-ray unit.

II. Write notes on: **(10 x 6 = 60)**

1. Beam limiting devices.
2. Line Focal Principle.
3. X-ray Skull Unit.
4. Three Phase Full wave rectifier circuit.
5. Anode Heal effect.
6. Grids: Grid Ratio, Types and advantages.
7. Image Intensifier tube.
8. Rotating anode X-ray Tube.
9. Constant potential generator.
10. Inherent and added filters.

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

[AHS 1024] **OCTOBER 2024** **Sub. Code: 2502**

M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR - (From 2020-2021 onwards)
PAPER III - CONVENTIONAL RADIOLOGICAL AND IMAGING EQUIPMENT

Q.P. Code: 282502

Time: Three hours **Maximum: 100 Marks**

Answer ALL Questions

I. Elaborate on: **(2 x 20 = 40)**

1. Elaborate on Functional tests for X-ray Tube under: a) Timer b) Focal Spot & c) Beam alignment test.

2. Construction and working principle of X-ray tubes.

II. Write notes on: **(10 x 6 = 60)**

1. With a neat circuit diagram, explain the working principle of High frequency X-ray circuit.
2. Kilovoltage circuit.
3. Anode rating chart.
4. Half value layer.
5. Automatic exposure control.
6. Image intensifying Screen.
7. Basic Principle of cine fluoroscopy.
8. PMT Tube.
9. Grids: Grid Ratio, Types and advantages.
10. Three Phase Full wave rectifier circuit.

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

[AHS 0525] **MAY 2025** **Sub. Code: 2502**

M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER III - CONVENTIONAL RADIOLOGICAL AND IMAGING EQUIPMENT

Q.P. Code: 282502

Time: Three hours **Maximum: 100 Marks**

Answer ALL Questions

I. Elaborate on: **(2 x 20 = 40)**

1. What are the functional tests you will carry on in a x-ray tube, during periodic maintenance?

2. Various dental X-ray equipments.

II. Write notes on: **(10 x 6 = 60)**

1. Half value layer. Name a few materials which are used?
2. Anode rating chart.
3. Vidicon camera.
4. Space change compensation and its clinical use.
5. Mains resistance compensator and its clinical benefits.
6. Spin top test.
7. Dual focus and practical consideration in choice of focus.
8. Automatic exposure control in mammography unit.
9. Three phase 12 rectifier circuit.
10. Fluorescent materials uses in fluoroscopic screen.

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

[AHS 1025] **OCTOBER 2025** **Sub. Code: 2502**

M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER III - CONVENTIONAL RADIOLOGICAL AND IMAGING EQUIPMENT

Q.P. Code: 282502

Time: Three hours **Maximum: 100 Marks**

Answer ALL Questions

I. Elaborate on: **(2 x 20 = 40)**

1. Control of scattered radiation.

2. With a neat circuit diagram, explain the working principle of 6 Phase Generator X-ray circuit.

II. Write notes on: **(10 x 6 = 60)**

1. Vidicon Camera.
2. Constant potential generator.
3. Beam limiting devices.
4. Line Focus Principle.
5. Anode heel effect.
6. Filters and its uses.
7. Space charge effect.
8. Main voltage compensator.
9. Bowtie Filter.
10. Basic principle of cine fluoroscopy.

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