

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

[AHS 0122]

**JANUARY 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 2512

**M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR (From 2019-2020 onwards)
PAPER II – QUALITY ASSURANCE AND QUALITY CONTROL IN
DIAGNOSTIC RADIOLOGY AND IMAGING
*Q.P. Code : 282512***

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the quality control procedures in conventional radiography.
2. Write in detail about quality assurance and quality control in MRI.

II. Write notes on:

(10 x 6 = 60)

1. Measurement of CT dose index.
2. Screen-film cassette speed matching.
3. Phantom measurements in CT.
4. Quality assurance record keeping.
5. mAs test.
6. SMPTE.
7. Sensitometry.
8. Cassette leak check.
9. Grid alignment test.
10. Film contrast.

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

[AHS 1022]

OCTOBER 2022

Sub. Code: 2512

**M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR (From 2019-2020 & 2020-2021 onwards)
PAPER II – QUALITY ASSURANCE AND QUALITY CONTROL IN
DIAGNOSTIC RADIOLOGY AND IMAGING**

Q.P. Code : 282512

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Explain the quality control procedures in mammography.
2. Write in detail about quality assurance and quality control in MRI.

II. Write notes on:

(10 x 6 = 60)

1. Light beam alignment.
2. Safe light test.
3. Characteristic curve.
4. Film speed resolution.
5. Test of time linearity.
6. Proper screen-film contact test.
7. Focal spot size measurement.
8. Field alignment test for fluoroscopy.
9. Routine cleaning of equipment and instruments.
10. Phantom measurements in CT.

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

[AHS 1023]

OCTOBER 2023

Sub. Code: 2512

**M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER II – QUALITY ASSURANCE AND QUALITY CONTROL IN
DIAGNOSTIC RADIOLOGY AND IMAGING**

Q.P. Code: 282512

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the quality control procedures of cathlab X-ray equipment's.
2. Explain about quality control and quality assurance fluoroscopy devices.

II. Write notes on:

(10 x 6 = 60)

1. Write about real time ultrasonography.
2. Write about Quality Assurance and quality control in digital radiography.
3. X-ray output and beam quality test.
4. List the source of radiation.
5. Write about characteristic curve.
6. SMPTE.
7. Beam ailment and collimation.
8. MRI artifacts.
9. Measurement of CT dose index.
10. Write about Linearity of mA and Tube housing leakage.

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

[AHS 0524]

MAY 2024

Sub. Code: 2512

**M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER II – QUALITY ASSURANCE AND QUALITY CONTROL IN
DIAGNOSTIC RADIOLOGY AND IMAGING**

Q.P. Code: 282512

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the quality assurance and quality control in modern imaging equipment's.
2. Write in detail about periodic QA schedule for radiology department.

II. Write notes on:

(10 x 6 = 60)

1. Write about Linearity of mA and Tube housing leakage.
2. Write about Quality Assurance and quality control in USG.
3. Role of radiation safety office in quality control program.
4. Focal spot size assessment.
5. Write about field alignment test in fluoroscopy.
6. PACS.
7. Screen film cassette speed matching.
8. CT artifacts.
9. LASER film printer calibration.
10. Mechanical test for CT.

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

[AHS 1024]

OCTOBER 2024

Sub. Code: 2512

**M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER II – QUALITY ASSURANCE AND QUALITY CONTROL IN
DIAGNOSTIC RADIOLOGY AND IMAGING**

Q.P. Code: 282512

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe the quality assurance and quality control in conventional radiography and digital radiography.
2. Write in detail about MRI artifacts and their remedy.

II. Write notes on:

(10 x 6 = 60)

1. Write about image distortion.
2. Write about Quality Assurance and quality control in mammography.
3. Role of radiation safety office in quality control program.
4. Write in detail about Doppler artifacts.
5. Write about grid alignment test.
6. Sensitometry.
7. Radiation proof test.
8. Test of timer linearity.
9. Write about biological effects of radiation.
10. Safe light test.

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

[AHS 1025]

OCTOBER 2025

Sub. Code: 2512

**M.Sc. RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER II – QUALITY ASSURANCE AND QUALITY CONTROL IN
DIAGNOSTIC RADIOLOGY AND IMAGING**

Q.P. Code: 282512

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Describe quality assurance (QA) tests for MRI scanners and discuss the aim, procedure, acceptable limits and frequency.
2. Detail about quality assurance tests performed on a CT scanner. Include the QA purpose, frequency, acceptable limits and procedures for CT number accuracy, slice thickness and spatial resolution.

II. Write notes on:

(10 x 6 = 60)

1. Role of medical physicist in quality assurance.
2. QA tests for Fluoroscopy.
3. What role does the Automatic Exposure Control (AEC) play in QA testing?
4. Write about Grid alignment test.
5. Write about linearity of mA and Tube housing leakage.
6. Film contrast.
7. Quality control procedure in Mammography.
8. Describe about lay out for CT.
9. Quality control in nuclear imaging.
10. Write about type approval.
