[LD 0212] **AUGUST 2013** **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY /

B.Sc. RADIO DIAGNOSIS TECHNOLOGY

THIRD YEAR

PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

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

1. Describe the quality control procedures of Computed tomography.
2. Explain the processes of quality assurance procedures of automatic film processors.
3. Write in detail about quality control in digital imaging.

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

1. Beam alignment and collimation.
2. Film and chemical storage.
3. Test of timer linearity.
4. Focal spot size measurement.
5. Quality assurance record keeping.
6. Spot film and spot film camera.
7. X-ray beam perpendicularity.
8. Exposure linearity and reproducibility.

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

1. Film clippers.
2. Exposure switch.
3. Define quality assurance.
4. CTDI check.
5. Film changers.
6. Sensitometer.
7. ABC reproducibility.
8. QA phantom.
9. Lag.
10. X-ray out put measurement.

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[LE 0212] **FEBRUARY 2014** **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY /

B.Sc. RADIO DIAGNOSIS TECHNOLOGY

THIRD YEAR

PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

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

1. Describe the quality control procedures in conventional radiography.
2. Explain the procedures of quality control in mammography.
3. Write in detail about acceptance testing of CT scanner.

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

1. Film- screen contact test.
2. Off- focus radiation.
3. Total filter estimation.
4. Grid alignment test.
5. Leakage radiation.
6. Screen-film-cassette speed matching.
7. Light field and X-ray field alignment test.
8. Image quality.

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

1. View boxes.
2. Dark room fog.
3. Screen cleanliness.
4. Film markers.
5. Define quality control.
6. CT number verification.
7. mAs linearity test.
8. Conversion factor.
9. Artefacts.
10. Entrance skin exposure (ESE).

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[LF 0212] **AUGUST 2014** **Sub Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY

THIRD YEAR

Paper IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time : Three hours **Maximum : 100 marks**

Answer All questions.

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

1. Write about various tests, their frequency and tools required for quality assurance of radiographic units.
2. Describe the quality assurance for computed tomography.
3. Quality assurance tests for Mammography and Fluoroscopy Units.

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

1. Central beam alignment test for radiography unit.
2. Measurement of CT dose index.
3. Tube housing leakage.
4. Describe about linearity of MA assessment.
5. Counting rate performance of Gamma camera.
6. Chemical purity of Radiopharmaceuticals.
7. Temporal accuracy of HDR Brachytherapy.
8. Out put consistency checking in Radiography unit.

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

1. Radionucleide purity.
2. Define quality assurance.
3. Swipe test.
4. Gantry tilt assessment in CT.
5. Write briefly about phantoms.
6. Contrast sensitivity of fluoroscopy unit.
7. Pin prick test for HDR brachytherapy.
8. Focal spot size assessment.
9. Radiation profile width in CT collimator.
10. Spatial linearity of Gamma camera.

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[LG 0215] **FEBRUARY 2015** **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY /

B.Sc. RADIO DIAGNOSIS TECHNOLOGY

THIRD YEAR

PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

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

1. Name various tests for quality assurance of radiography units. Write about Linearity of mA and Tube housing leakage.
2. Write about quality assurance of radiopharmaceuticals.
3. Quality assurance tests for Fluoroscopy units.

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

1. Mechanical tests for CT.
2. Linearity of mA assessment.
3. Counting rate performance of Gamma camera.
4. Quality assurance test of Linear accelerator.
5. Temporal accuracy of HDR Brachytherapy.
6. Measurement of CT dose index.
7. Image quality tests in PET-CT.
8. Out put consistency checking in Radiography unit.

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

1. Pinprick test for HDR brachytherapy.
2. CT dose index.
3. Tests for resolution in CT.
4. Staggered autoradiography.
5. Gantry tilt assessment in CT.
6. Write briefly about phantoms.
7. Contrast sensitivity of fluoroscopy unit.
8. Test of CT number linearity.
9. Focal spot size assessment.
10. Spatial linearity of Gamma camera.

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[LH 0815] **AUGUST 2015** **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY /

B.Sc. RADIO DIAGNOSIS TECHNOLOGY

THIRD YEAR

PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

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

1. Describe the quality control procedures of cath lab X.ray equipment.
2. Explain the processes of quality assurance procedures of diagnostic film processing.
3. Write in detail about quality control in image quality.

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

1. Quality control of mobile fluoroscopic equipment.
2. Film storage quality control
3. Temporal accuracy of timer.
4. Determination of focal spot size.
5. Quality control record maintenance.
6. Quality assurance procedures of film processors.
7. Acceptance testing of procedures of general radiographic equipments.
8. Role of radiation safety officer in quality control program.

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

1. Tube voltage measuring device.
2. X-ray beam quality check.
3. Define quality assurance.
4. CT dose index check.
5. Film hangers.
6. Artifacts evaluation
7. Timer linearity test.
8. Densitometer.
9. Safe light integrity check.
10. Patient exposure test.

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[LI 0216] FEBRUARY 2016 **Sub Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY / RADIO DIAGNOSIS TECHNOLOGY

THIRD YEAR

Paper IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

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

1. Explain the procedures of quality control in mammography.
2. Explain the procedure of quality assurance procedures of automatic film processors.
3. Describe the quality assurance for computed tomography.

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

1. AERB.
2. Film and chemical storage.
3. Focal spot size measurement.
4. Machanical tests for CT.
5. Image quality tests in Pet-CT.
6. Quality assurance record keeping.
7. Screen – Film – cassette speed matching.
8. Measurement of CT dose index.

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

1. Dark room Fog.
2. Film Markers.
3. Aretefacts.
4. Film clippers.
5. Film changers.
6. Write briefly about Phantoms.
7. Gantry tilt assessment in CT.
8. Focal spot size assessment.
9. Exposure switch.
10. X-Ray out put measurement.

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[LJ 0816] AUGUST 2016 **Sub Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY / RADIO DIAGNOSIS TECHNOLOGY

THIRD YEAR

Paper IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time : Three Hours **Maximum : 100 Marks**

Answer All questions.

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

1. Write in detail about quality control in image quality.
2. Explain the procedures of quality control in mammography.
3. Write in detail about the performance evaluation tests of CT.

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

1. Radiochemical purity.
2. Central beam alignment test.
3. Film and chemical storage.
4. Quality assurance record keeping.
5. Staggered autoradiography.
6. Total filtration.
7. Intrinsic resolution of gamma camera.
8. Measurement of CTDI.

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

1. Pinprick test for HDR brachytherapy.
2. Conversion factor.
3. Entrance skin exposure (ESE).
4. Write briefly about phantoms.
5. X-ray beam quality check.
6. Densitometer.
7. Film hangers.
8. Spatial linearity of Gamma camera.
9. Testing linearity of timer.
10. Kvp meter.

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[LK 0217] FEBRUARY 2017 **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY

SECOND YEAR

PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

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

1. Explain various aspects of quality control in digital imaging.
2. Write in detail about acceptance testing of CT scanner.
3. Quality assurance tests for Fluoroscopy units.

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

1. Explain about the quality assurance of radiopharmaceuticals.
2. Explain about radiation dose. Give examples of measuring units.
3. Mechanical tests for CT.
4. List the sources of radiation. Explain about Off- focus radiation.
5. Write about Total filter estimation.
6. Write about biological effects of radiation.
7. Write about X-ray beam perpendicularity.
8. Explain the Film- screen contact test.

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

1. Define quality assurance.
2. Explain about evaluation of artefacts.
3. Explain how to check X-ray beam quality.
4. Name the different regulatory bodies.
5. Explain about staggered autoradiography.
6. Write about QA phantom.
7. Explain Conversion factor.
8. What is occupational exposure?
9. Explain the Patient exposure test.
10. Explain scintillation detector.

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[LL 0817] AUGUST 2017 **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY

THIRD YEAR

PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

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

1. Describe in detail about the procedures of quality control in mammography.
2. Explain the different image quality tests in PET-CT.
3. Describe the quality control procedures in conventional radiography.

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

1. Write about different shielding materials.
2. Counting rate performance of Gamma camera.
3. Write about Quality assurance record keeping.
4. Explain the principles of radiation protection.
5. Write about temporal accuracy of timer.
6. Write about beam alignment and collimation.
7. Explain about Screen-film-cassette speed matching.
8. Explain the determination of focal spot size.

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

1. Explain the Gantry tilt assessment in CT.
2. Write briefly about Contrast sensitivity of fluoroscopy unit.
3. Explain the Timer linearity test.
4. What are Film clippers?
5. Explain about exposure switch.
6. Write about Sensitometer and its use.
7. Write about the tests for resolution in CT.
8. Write about tube voltage measuring device.
9. Use of pocket dosimeter.
10. Survey meter and its uses.

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[LM 0218] FEBRUARY 2018 **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY

THIRD YEAR

PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

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

1. Explain about the quality control procedures of Computed tomography.
2. Explain the role of a radiation safety officer in the quality control program.
3. Describe the quality control procedures of cath lab X-ray equipment.

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

1. Write about Quality assurance test of Linear accelerator.
2. Explain the Grid alignment test.
3. Write about Film and chemical storage.
4. Write about Screen-film-cassette speed matching.
5. Explain the Light field and X-ray field alignment test.
6. Write about the different types of Artefacts.
7. Write in detail about the Contrast sensitivity of fluoroscopy unit.
8. Explain how to check consistency in Radiography unit output.

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

1. What is CT dose index?
2. What is the use of film hangers?
3. Define quality control
4. How to maintain screen cleanliness?
5. How does Dark room fog affect quality?
6. What is the use of Densitometer?
7. Explain measurement of CT dose index
8. Write about Focal spot size assessment
9. List the benefits of quality assurance in an imaging department.
10. What is Tube voltage measuring device? Explain its use.

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[LN 0818] AUGUST 2018 **Sub. Code: 1824**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY
THIRD YEAR
PAPER IV – QUALITY CONTROL IN RADIOLOGY

Q.P. Code: 801824

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

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

1. Describe in detail periodic QA schedule for Radiology Department.
2. Explain in detail about quality and assurance in CT Fluoroscopy.
3. Explain quality assurance tests for 500-1000 MA X-ray unit.

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

1. Mobile X - ray.
2. CT Dose index.
3. C-Arm.
4. AERB.
5. RSO.
6. Mammogram Quality control.
7. Digital Radiography QA.
8. Linear Attenuation Coefficient.

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

1. Secondary Radiation.
2. X-ray room doors guidelines.
3. Spatial Resolution.
4. CT guided Biopsy radiation safety.
5. CT Gantry.
6. CT Console lead glass safety.
7. Tube housing leakage.
8. MA and KVP Dose limit for CT Abdomen.
9. CT Angiography radiation dose.
10. Radiation Protection barriers for EYES.

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