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Preface

This book, *"10 Model Test Papers in Radiography"*, is a comprehensive and meticulously curated collection of 500 multiple-choice questions (MCQs) designed to help students, radiography professionals, and competitive exam aspirants assess and enhance their understanding of core radiological sciences.

These test paper includes 50 questions covering a wide range of topics in radiography.

These model papers are designed to simulate real exam scenarios, promoting self-assessment and time management. The answer key is provided at the end of each paper, and detailed explanations are offered separately to reinforce conceptual clarity.

This resource will be particularly useful for:

- Students of B.Sc. and Diploma in Radiography & Imaging Technology
- CT/MRI technicians and interns
- Candidates preparing for exams such as **RRB, ESIC, UPUMS, PGIMER, AIIMS, DSSSB**, and **other state-level and national paramedical exams**
- Educators and trainers seeking high-yield MCQs for classroom and test practice

The content is based on standard textbooks, current clinical practices, and exam patterns. Each paper contains a balanced mix of fundamental, application-based, and advanced-level questions to challenge the learner and encourage critical thinking.

We hope this compilation will serve as a valuable tool for your academic and professional journey in medical imaging and diagnostics.

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(YouTube Channel)

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Model Test Paper 1

1. X-rays are produced when electrons strike the:
   A. Filament
   B. Target
   C. Grid
   D. Housing
2. What material is commonly used for the anode target?
   A. Lead
   B. Copper
   C. Tungsten
   D. Molybdenum
3. The function of the collimator is to:
   A. Focus the beam
   B. Increase contrast
   C. Reduce scatter radiation
   D. Magnify image
4. Line focus principle is used to:
   A. Increase exposure
   B. Reduce patient dose
   C. Improve resolution
   D. Increase filtration
5. The electron beam is generated from the:
   A. Target
   B. Grid
   C. Cathode
   D. Rotor
6. The majority of X-ray tube energy is converted to:
   A. Light
   B. Heat
   C. Electricity
   D. Radiation
7. Which exposure factor controls the energy of X-rays?
   A. mA
   B. kVp
   C. Time
   D. Focal spot

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8. Thermionic emission occurs at the:
   A. Anode
   B. Grid
   C. Filament
   D. Housing
9. What type of current is required by the X-ray tube?
   A. AC
   B. DC
   C. Biphasic
   D. Pulsed
10. Rectifiers convert:
    A. AC to DC
    B. DC to AC
    C. Voltage to current
    D. Current to voltage
11. What is the main reason for using high voltage in X-ray production?
    A. Improve contrast
    B. Increase exposure time
    C. Accelerate electrons
    D. Reduce noise
12. Focal spot blur decreases with:
    A. Large focal spot
    B. Small focal spot
    C. Increased SID
    D. Reduced filtration
13. Tube current is measured in:
    A. kVp
    B. mAs
    C. mA
    D. Ohms
14. X-rays travel in:
    A. Circles
    B. Zig-zag
    C. Straight lines
    D. Ellipses
15. Beam hardening is caused by:
    A. High mA
    B. Filtration

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C. Scatter
D. Grids

16. The protective housing of the tube prevents:
    A. Electron leakage
    B. Light scattering
    C. Radiation leakage
    D. Current drop
17. The process of filtering out low-energy X-rays is called:
    A. Attenuation
    B. Absorption
    C. Filtration
    D. Shielding
18. An increase in SID results in:
    A. More magnification
    B. Decreased exposure time
    C. Reduced magnification
    D. Image distortion
19. The rotating anode helps to:
    A. Focus electrons
    B. Minimize exposure time
    C. Dissipate heat
    D. Reduce scatter
20. The heel effect is most prominent in:
    A. Small field size
    B. Large SID
    C. Large field size
    D. Small anode angle
21. The tube envelope is made of:
    A. Plastic
    B. Glass
    C. Metal
    D. Lead
22. What is the role of the focusing cup?
    A. Absorb X-rays
    B. Collimate the beam
    C. Direct electrons
    D. Increase resolution
23. Bremsstrahlung radiation is produced when:
    A. Electron collides with nucleus

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B. Electron hits an outer shell
C. Photon is absorbed
D. Electron slows near nucleus

24. Characteristic radiation occurs when:
    A. Electron misses nucleus
    B. Inner shell electron is ejected
    C. Outer shell gains energy
    D. Electron slows down
25. An increase in mAs will increase:
    A. Energy of X-rays
    B. Beam quality
    C. Quantity of X-rays
    D. Penetration
26. The space charge effect occurs at the:
    A. Anode
    B. Cathode
    C. Housing
    D. Filtration
27. Leakage radiation must not exceed:
    A. 1 mGy/hr
    B. 100 mR/hr
    C. 0.1 Gy/hr
    D. 1 Gy/hr
28. The term attenuation refers to:
    A. Beam filtration
    B. Reduction in beam intensity
    C. Increase in energy
    D. Scattered dose
29. What determines the penetrating power of the beam?
    A. Filtration
    B. Distance
    C. kVp
    D. mA
30. Which component maintains the vacuum in the X-ray tube?
    A. Filament
    B. Window
    C. Glass envelope
    D. Anode

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31. What is the effect of increasing kVp?
    A. Less penetration
    B. More contrast
    C. More scattered radiation
    D. Lower image density
32. The primary purpose of filtration is to:
    A. Increase image sharpness
    B. Reduce skin dose
    C. Increase mA
    D. Lower contrast
33. The anode angle affects:
    A. Speed of electrons
    B. Magnification
    C. Intensity distribution
    D. Focal spot blur
34. What is used to control filament current?
    A. Step-down transformer
    B. Rectifier
    C. Timer circuit
    D. Grid control
35. The rotating anode rotates at:
    A. 100–200 rpm
    B. 1000–3000 rpm
    C. 3000–10000 rpm
    D. 10–100 rpm
36. What happens to patient dose when mAs is doubled?
    A. Unchanged
    B. Doubled
    C. Halved
    D. Tripled
37. The oil in the X-ray tube housing is used for:
    A. Cooling
    B. Absorption
    C. Shielding
    D. Radiation production
38. Exposure time is controlled by the:
    A. kVp meter
    B. Timer circuit

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C. Rectifier
D. Autotransformer

39. The autotransformer is used to:
    A. Control mAs
    B. Regulate current
    C. Select voltage to primary circuit
    D. Store energy
40. Focal spot size is selected on the basis of:
    A. Part size
    B. Patient age
    C. Exposure time
    D. Tube voltage
41. The target angle is typically:
    A. 5–10°
    B. 10–15°
    C. 15–20°
    D. 25–30°
42. Tungsten is ideal for anode due to:
    A. High melting point and atomic number
    B. Low melting point
    C. Low atomic number
    D. Transparency
43. Filtration removes:
    A. High-energy photons
    B. Low-energy photons
    C. All radiation
    D. Scatter
44. The inverse square law implies that:
    A. Distance increases exposure
    B. Intensity decreases as square of distance
    C. mA is inversely related to distance
    D. SID is constant
45. A rotating anode is used to:
    A. Increase time
    B. Improve sharpness
    C. Dissipate heat over larger area
    D. Improve collimation
46. High-frequency generators produce:
    A. Pulsed radiation

B. Continuous DC
C. Less ripple
D. Greater ripple

47. Filament current is typically:
A. 1–3 A
B. 10–20 A
C. 50–60 A
D. 100 A

48. Grid frequency is measured in:
A. Hz
B. Lines/mm
C. mA
D. cm

49. Tube housing is lined with:
A. Copper
B. Steel
C. Lead
D. Aluminum

50. Anode is made to rotate using:
A. Rotor and stator
B. Rectifier
C. Grid
D. Transformer

✓Answers – Model Test Paper 1

1.	B	2. C	3. C	4. C	5. C	6. B	7. B	8. C	9. B	10. A
2.	C	12. B	13. C	14. C	15. B	16. C	17. C	18. C	19. C	20. D
3.	B	22. C	23. D	24. B	25. C	26. B	27. B	28. B	29. C	30. C
4.	C	32. B	33. C	34. A	35. C	36. B	37. A	38. B	39. C	40. A
5.	B	42. A	43. B	44. B	45. C	46. C	47. A	48. B	49. C	50. A

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Model Test Paper 2

1. What is the unit of exposure in radiology?
   A. Gray
   B. Sievert
   C. Coulomb/kg
   D. Becquerel
2. The function of the grid is to:
   A. Reduce contrast
   B. Remove scatter radiation
   C. Collimate the beam
   D. Increase exposure
3. In fluoroscopy, the image intensifier increases:
   A. Radiation dose
   B. Image contrast
   C. Image brightness
   D. Spatial resolution
4. A high grid ratio provides:
   A. Less contrast
   B. More scatter
   C. More contrast
   D. Lower exposure
5. What is the recommended SID for chest radiography?
   A. 40 inches
   B. 72 inches
   C. 30 inches
   D. 90 inches
6. The term ALARA refers to:
   A. Radiation measurement
   B. Radiation protection principle
   C. Exposure technique
   D. Filtration protocol
7. Which modality uses radiofrequency and magnetic fields?
   A. CT
   B. MRI
   C. Ultrasound
   D. Nuclear medicine
8. Image sharpness is mainly affected by:
   A. kVp

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B. mA
C. Focal spot size
D. SID

9. PACS is used for:
   A. Printing images
   B. Viewing and storing images
   C. Producing images
   D. Shielding
10. DICOM stands for:
   A. Digital Image and Communication in Medicine
   B. Digital Contrast Imaging in Medicine
   C. Direct Imaging Communication
   D. Diagnostic Imaging Computation
11. High kVp results in:
   A. More absorption
   B. More image contrast
   C. More penetration
   D. Less scatter
12. Most radiosensitive cells are:
   A. Nerve cells
   B. Muscle cells
   C. Lymphocytes
   D. Bone cells
13. Effective dose is measured in:
   A. Gray
   B. Becquerel
   C. Sievert
   D. Roentgen
14. The latent image is formed on:
   A. Screen
   B. Cassette
   C. Film
   D. CR plate
15. An intensifying screen is used to:
   A. Reduce patient dose
   B. Improve sharpness
   C. Increase exposure
   D. Reduce SID

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16. In digital radiography, the image receptor is:
    A. Film
    B. Cassette
    C. Flat panel detector
    D. Intensifying screen
17. Which of the following increases patient dose?
    A. High kVp
    B. High mA
    C. High SID
    D. Low grid ratio
18. Which condition affects beam attenuation most?
    A. Air
    B. Muscle
    C. Bone
    D. Fat
19. What is the typical kVp used for abdominal X-rays?
    A. 40
    B. 60
    C. 80
    D. 110
20. CT number for water is:
    A. -1000
    B. 0
    C. 100
    D. 1000
21. Window width in CT controls:
    A. Image sharpness
    B. Image contrast
    C. Exposure
    D. Brightness
22. Which detector is used in CT scan?
    A. Photostimulable phosphor
    B. Scintillation detector
    C. Selenium plate
    D. CCD
23. MRI contrast agents are usually based on:
    A. Iodine
    B. Gadolinium

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C. Barium
D. Technetium

24. T1-weighted images show:
    A. Water as bright
    B. Fat as bright
    C. Water as dark
    D. Bone as bright
25. Safety zone for MRI includes:
    A. Zone 0
    B. Zone I
    C. Zone II
    D. Zone IV
26. Best imaging modality for soft tissues:
    A. X-ray
    B. CT
    C. MRI
    D. PET
27. Pixel is the basic unit of:
    A. Volume
    B. Slice
    C. Image
    D. Radiation
28. In ultrasound, echogenicity means:
    A. Beam angle
    B. Acoustic impedance
    C. Reflective ability
    D. Tissue density
29. Radiographic contrast depends on:
    A. SID
    B. kVp
    C. mAs
    D. FFD
30. FFD stands for:
    A. Focal Field Distance
    B. Focal Film Distance
    C. Film Focus Distance
    D. Focus-to-Film Distance
31. Dose area product (DAP) measures:
    A. Entrance dose

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B. Skin dose
C. Total energy imparted
D. Tube output

32. For scoliosis series, which projection is preferred?
A. AP
B. PA
C. Lateral
D. Oblique
33. Radiographic density is:
A. Degree of blackening
B. Bone thickness
C. Pixel sharpness
D. mA control
34. What is the average adult chest PA exposure?
A. 10 mAs, 60 kVp
B. 5 mAs, 110 kVp
C. 2 mAs, 120 kVp
D. 20 mAs, 70 kVp
35. Air appears _____ on X-ray.
A. Black
B. White
C. Gray
D. Dark gray
36. Scatter radiation reduces:
A. Dose
B. Contrast
C. Sharpness
D. Penetration
37. The penumbra effect is reduced by:
A. Large focal spot
B. Small SID
C. Small focal spot
D. Long exposure
38. Which of the following is a deterministic effect?
A. Cancer
B. Genetic mutation
C. Cataract
D. Leukemia

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39. Half-value layer (HVL) is used to measure:
    A. Beam energy
    B. Dose rate
    C. Patient exposure
    D. Beam quality
40. Radiolucent means:
    A. Absorbs radiation
    B. Reflects X-rays
    C. Allows radiation through
    D. Produces image
41. Gonadal shielding is recommended when the gonads lie within:
    A. 2 cm of the beam
    B. 5 cm of the beam
    C. 10 cm of the beam
    D. 15 cm of the beam
42. Which is not a contrast media?
    A. Barium
    B. Air
    C. Water
    D. Lead
43. What is used to visualize blood vessels?
    A. Tomography
    B. DEXA
    C. DSA
    D. PET
44. Bucky system is associated with:
    A. CT
    B. CR
    C. DR
    D. Grids
45. High-resolution CT is best for:
    A. Abdomen
    B. Brain
    C. Lungs
    D. Pelvis
46. For contrast enema, barium is inserted:
    A. IV
    B. Oral

C. Rectally
D. IM

47. Most common X-ray projection:
    A. Lateral
    B. Oblique
    C. PA
    D. AP
48. For wrist X-ray, which view is essential?
    A. PA
    B. Lateral
    C. Oblique
    D. All of these
49. Radiation monitoring badge is worn at:
    A. Hand
    B. Chest
    C. Waist
    D. Neck
50. The filtration used in mammography is:
    A. Aluminum
    B. Lead
    C. Molybdenum
    D. Copper

✅Answers – Model Test Paper 2

1.	C	2. B	3. C	4. C	5. B	6. B	7. B	8. C	9. B	10. A
2.	C	12. C	13. C	14. D	15. A	16. C	17. B	18. C	19. D	20. B
3.	B	22. B	23. B	24. B	25. D	26. C	27. C	28. C	29. B	30. D
4.	C	32. B	33. A	34. C	35. A	36. B	37. C	38. C	39. D	40. C
5.	C	42. D	43. C	44. D	45. C	46. C	47. C	48. D	49. D	50. C

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Model Test Paper 3

1. What is the primary function of the autotransformer in an X-ray circuit?
   A. Boost mA
   B. Provide high voltage
   C. Select kVp
   D. Regulate filament current
2. The image produced in fluoroscopy is intensified using:
   A. CT scanner
   B. Image intensifier
   C. Lead apron
   D. Grids
3. Which radiation interaction is most significant for diagnostic radiography?
   A. Coherent scatter
   B. Pair production
   C. Photoelectric effect
   D. Photodisintegration
4. Which of the following factors increases radiographic contrast?
   A. High kVp
   B. Use of grid
   C. High mAs
   D. Increased SID
5. The active layer of a CR imaging plate is made of:
   A. Amorphous selenium
   B. Photostimulable phosphor
   C. Barium sulfate
   D. Calcium tungstate
6. CT numbers are measured in:
   A. Hounsfield units
   B. Roentgen
   C. Gray
   D. Sievert
7. The main component of an X-ray cassette in film-screen radiography is:
   A. Lead backing
   B. Intensifying screen
   C. Developer
   D. Grid
8. Which part of the X-ray machine prevents leakage radiation?
   A. Collimator

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B. Bucky
C. Protective housing
D. Light beam diaphragm

9. What is the function of a step-down transformer?
   A. Increase voltage
   B. Decrease current
   C. Increase current
   D. Rectify AC
10. ALARA principle stands for:
   A. As Large As Reasonably Accurate
   B. As Light As Radiation Allows
   C. As Low As Reasonably Achievable
   D. As Long As Radiation Affects
11. PACS is used in radiology to:
   A. Print films
   B. Store and transmit images
   C. Adjust exposure
   D. Control scatter radiation
12. What is the effect of increasing OID on image sharpness?
   A. Increases sharpness
   B. Decreases sharpness
   C. No change
   D. Sharpness improves with distance
13. What causes quantum mottle in digital radiography?
   A. High exposure
   B. Low kVp
   C. Insufficient mAs
   D. Grid cutoff
14. The radiographic term for the degree of blackening is:
   A. Sharpness
   B. Distortion
   C. Density
   D. Contrast
15. Which radiation unit accounts for biological effect?
   A. Roentgen
   B. Gray
   C. Sievert
   D. Hounsfield

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16. The cathode in an X-ray tube contains:
    A. Anode
    B. Target
    C. Filament
    D. Diode
17. The device that changes AC to DC is called a:
    A. Transformer
    B. Rectifier
    C. Receptor
    D. Capacitor
18. What is the function of the control panel?
    A. Focus X-ray beam
    B. Adjust filtration
    C. Set exposure factors
    D. Convert radiation
19. Digital imaging has the benefit of:
    A. High patient dose
    B. More processing time
    C. Post-processing capability
    D. Chemical use
20. TLD is used for:
    A. Detecting contrast
    B. Producing X-rays
    C. Personal radiation monitoring
    D. Checking anode temperature
21. In MRI, which atom is mainly used for imaging?
    A. Oxygen
    B. Carbon
    C. Hydrogen
    D. Nitrogen
22. Beam hardening is commonly associated with:
    A. Ultrasound
    B. MRI
    C. CT
    D. Mammography
23. Increasing kVp results in:
    A. More absorption
    B. Less penetration

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C. More scatter
D. More contrast

24. What is the main function of filtration in radiography?
    A. Increase beam intensity
    B. Decrease contrast
    C. Remove low-energy X-rays
    D. Cool the tube
25. The minimum SSD in mobile fluoroscopy is:
    A. 10 cm
    B. 30 cm
    C. 50 cm
    D. 100 cm
26. Which interaction involves an outer shell electron?
    A. Compton scatter
    B. Photoelectric effect
    C. Coherent scatter
    D. Pair production
27. Most image blur is caused by:
    A. Low mA
    B. Motion
    C. Collimation
    D. Low SID
28. Which X-ray beam property is improved by a collimator?
    A. Quantity
    B. Quality
    C. Sharpness
    D. Beam size
29. The primary source of radiation exposure to a radiographer is:
    A. Direct beam
    B. Leakage radiation
    C. Scatter radiation
    D. Background radiation
30. What is the main benefit of using a rotating anode?
    A. Increased mA
    B. Faster exposure
    C. Heat dissipation
    D. Lower kVp
31. An increase in SID will:
    A. Increase magnification

B. Increase patient dose
C. Decrease image sharpness
D. Improve spatial resolution

32. Barium sulfate is used in:
A. CT contrast
B. MRI
C. GI studies
D. IVP
33. Image matrix in digital radiography affects:
A. mA
B. Contrast
C. Resolution
D. Penumbra
34. The area where electrons hit the anode is the:
A. Filament
B. Focal spot
C. Window
D. Housing
35. Radiation dose in CT is measured by:
A. TLD
B. CTDI
C. PACS
D. DAP
36. DR detectors are mainly based on:
A. Intensifying screens
B. Selenium or cesium iodide
C. Scintillators
D. Manual grids
37. Which imaging system uses photostimulable phosphors?
A. DR
B. MRI
C. CT
D. CR
38. For skeletal imaging, the ideal kVp is:
A. 30–40
B. 40–50
C. 60–70
D. 70–90

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39. Which of the following is a stochastic effect of radiation?
    A. Skin burn
    B. Cataracts
    C. Cancer
    D. Erythema
40. The light emitted from an intensifying screen is usually:
    A. Red
    B. Blue or green
    C. White
    D. Infrared
41. The size of the pixel determines:
    A. Image speed
    B. Radiation dose
    C. Spatial resolution
    D. Exposure latitude
42. What happens if grid is misaligned?
    A. Increased density
    B. Grid cutoff
    C. Reduced contrast
    D. Increased sharpness
43. Which of the following is NOT a beam-restricting device?
    A. Cone
    B. Diaphragm
    C. Grid
    D. Collimator
44. The most radiosensitive stage of cell cycle is:
    A. M phase
    B. S phase
    C. G1 phase
    D. G2 phase
45. What is used to evaluate focal spot size?
    A. Line-pair phantom
    B. Step wedge
    C. Pinhole camera
    D. Ionization chamber
46. DEXA scan is used for evaluating:
    A. Lungs
    B. Kidneys

C. Bone density
D. Soft tissue masses

47. A test used to measure contrast resolution is:
A. DAP
B. MTF
C. SNR
D. Step wedge

48. The main advantage of high-frequency X-ray generators is:
A. Cost
B. Lower patient dose
C. Lower ripple
D. Less exposure

49. What is an example of somatic deterministic radiation effect?
A. Genetic mutation
B. Leukemia
C. Cataract
D. Tumor

50. The grayscale in digital image is related to:
A. Pixel size
B. Bit depth
C. Matrix size
D. mA

Answers – Model Test Paper 3

1. C	2. B	3. C	4. B	5. B	6. A	7. B	8. C	9. C	10. C
2. B	12. B	13. C	14. C	15. C	16. C	17. B	18. C	19. C	20. C
3. C	22. C	23. C	24. C	25. B	26. A	27. B	28. D	29. C	30. C
4. D	32. C	33. C	34. B	35. B	36. B	37. D	38. D	39. C	40. B
5. C	42. B	43. C	44. A	45. C	46. C	47. D	48. C	49. C	50. B

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Model Test Paper 4

1. What is the SI unit of absorbed dose?
   A. Roentgen
   B. Gray
   C. Sievert
   D. Rem
2. Which imaging modality uses ionizing radiation?
   A. MRI
   B. CT
   C. Ultrasound
   D. Optical imaging
3. A low kVp technique produces:
   A. Low contrast
   B. High contrast
   C. High penetration
   D. Increased scatter
4. Which imaging modality uses sound waves?
   A. MRI
   B. CT
   C. PET
   D. Ultrasound
5. The window level in CT determines:
   A. Contrast
   B. Density
   C. Brightness
   D. Resolution
6. The part of the film-screen system that fluoresces when exposed to X-rays is the:
   A. Cassette
   B. Grid
   C. Intensifying screen
   D. Lead backing
7. What is the primary beam?
   A. Beam after scatter
   B. Beam exiting the patient
   C. Unmodified beam from the tube
   D. Beam filtered by collimator
8. In digital imaging, the image matrix is composed of:
   A. Pixels

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B. Photons
C. Plates
D. Tubes

9. The unit for effective dose is:
   A. Gray
   B. Sievert
   C. Coulomb/kg
   D. Becquerel
10. Which view is best to evaluate pleural effusion?
   A. PA chest
   B. Lateral decubitus
   C. AP chest
   D. Supine chest
11. A steep anode angle results in:
   A. Wider useful beam
   B. Less heel effect
   C. Smaller effective focal spot
   D. Larger actual focal spot
12. The main cause of geometric unsharpness is:
   A. Long SID
   B. Small focal spot
   C. Large OID
   D. High mAs
13. Digital image noise is inversely related to:
   A. Bit depth
   B. mAs
   C. Image matrix
   D. SID
14. A larger field of view (FOV) results in:
   A. Increased spatial resolution
   B. Decreased pixel size
   C. Decreased spatial resolution
   D. Increased sharpness
15. What is the function of the cathode?
   A. Absorb X-rays
   B. Rotate the anode
   C. Emit electrons
   D. Produce X-rays

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16. In digital radiography, SNR stands for:
    A. Signal No Reflection
    B. Signal to Noise Ratio
    C. Scanned Numerical Recording
    D. Standard Noise Range
17. The protective lead apron should be at least:
    A. 0.1 mm Pb
    B. 0.25 mm Pb
    C. 0.5 mm Pb
    D. 1.0 mm Pb
18. In X-ray tube, most energy is converted to:
    A. Heat
    B. Light
    C. X-rays
    D. Electricity
19. The positive electrode in the X-ray tube is the:
    A. Rotor
    B. Cathode
    C. Filament
    D. Anode
20. Exposure time is directly related to:
    A. Penumbra
    B. Motion blur
    C. Contrast
    D. kVp
21. Which has the highest tissue density?
    A. Fat
    B. Muscle
    C. Bone
    D. Air
22. What causes the anode heel effect?
    A. Anode angle
    B. Cathode size
    C. SID
    D. kVp
23. Increasing grid ratio increases:
    A. Patient dose
    B. Scatter

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C. Image blur
D. OID

24. Radiopaque substances appear:
    A. Black
    B. Grey
    C. White
    D. Invisible
25. Which of the following is a radiosensitive organ?
    A. Brain
    B. Liver
    C. Lung
    D. Gonads
26. A flat panel detector in DR uses:
    A. Cassette
    B. Intensifying screen
    C. Selenium or cesium iodide
    D. TLD
27. Air gap technique reduces:
    A. Magnification
    B. Patient dose
    C. Scatter
    D. Penumbra
28. What is the name of the area where radiation is totally blocked?
    A. Shadow zone
    B. Safe zone
    C. Umbra
    D. Penumbra
29. Which of the following affects spatial resolution most?
    A. Bit depth
    B. FOV
    C. Pixel size
    D. SID
30. What is the function of the stator in an X-ray tube?
    A. Rotate the anode
    B. Accelerate electrons
    C. Emit X-rays
    D. Heat the filament
31. Which side of the patient should face the IR in a PA chest X-ray?
    A. Posterior

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B. Anterior
C. Left
D. Right

32. The photoelectric effect is more likely to occur at:
    A. Low energy
    B. High energy
    C. Low atomic number
    D. High kVp
33. Which radiographic view is ideal for cervical spine trauma?
    A. Lateral view
    B. Open-mouth odontoid
    C. AP view
    D. Flexion-extension
34. For exposure reduction in digital radiography, which factor should be optimized?
    A. Grid ratio
    B. SID
    C. kVp
    D. mAs
35. The latent image in CR is read by:
    A. X-rays
    B. Laser beam
    C. Light
    D. Developer
36. Radiation exposure is most harmful during which trimester of pregnancy?
    A. First
    B. Second
    C. Third
    D. None
37. In CT, pitch is defined as:
    A. Table movement per rotation / beam width
    B. Detector size
    C. kVp ratio
    D. FOV / Matrix size
38. A histogram in digital radiography is used to:
    A. Reduce blur
    B. Adjust brightness
    C. Process contrast
    D. Analyze exposure

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39. Lead gloves are essential during:
    A. CT scan
    B. MRI
    C. Fluoroscopy
    D. Ultrasound
40. High-frequency X-ray generators offer:
    A. Increased ripple
    B. Constant potential
    C. Lower resolution
    D. Higher patient dose
41. The typical exposure for a lateral lumbar spine is:
    A. 20 mAs, 60 kVp
    B. 40 mAs, 110 kVp
    C. 5 mAs, 120 kVp
    D. 15 mAs, 80 kVp
42. Barium enema is used to visualize:
    A. Esophagus
    B. Stomach
    C. Small bowel
    D. Colon
43. Spatial resolution in digital radiography is measured in:
    A. mGy
    B. Dpi
    C. Line pairs per mm
    D. Pixel depth
44. The photostimulable phosphor used in CR is:
    A. Gadolinium
    B. Barium fluorohalide
    C. Calcium sulfate
    D. Selenium
45. The grid frequency refers to:
    A. Grid lines per inch
    B. Grid lines per cm
    C. Grid ratio
    D. Lead thickness
46. An S-shaped curve in imaging is associated with:
    A. Bit depth
    B. Latitude

C. H&D curve
D. Pixel size

47. Collimators are used to:
    A. Increase contrast
    B. Reduce scatter
    C. Limit radiation field
    D. All of the above
48. To prevent motion artifact, exposure time should be:
    A. Long
    B. Moderate
    C. Short
    D. Based on kVp
49. A grid is usually used for body parts thicker than:
    A. 4 cm
    B. 6 cm
    C. 8 cm
    D. 10 cm
50. The best way to protect a radiographer from scatter radiation is:
    A. Stand closer
    B. Use lead apron
    C. Use faster film
    D. Use intensifying screens

Answers – Model Test Paper 4

1.	B	2. B	3. B	4. D	5. C	6. C	7. C	8. A	9. B	10. B
2.	C	12. C	13. B	14. C	15. C	16. B	17. C	18. A	19. D	20. B
3.	C	22. A	23. A	24. C	25. D	26. C	27. C	28. C	29. C	30. A
4.	B	32. A	33. A	34. D	35. B	36. A	37. A	38. D	39. C	40. B
5.	B	42. D	43. C	44. B	45. A	46. C	47. D	48. C	49. C	50. B

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Model Test Paper 5 (Advanced & Tough)

1. The **heel effect** is more prominent when using:
   A. Small field size and short SID
   B. Large field size and long SID
   C. Large field size and short SID
   D. Small focal spot and high kVp
2. In **computed radiography (CR)**, the latent image is stored in:
   A. Silver halide crystals
   B. TFT detector
   C. Selenium plate
   D. Photostimulable phosphor layer
3. Which imaging technique provides **isotropic voxel acquisition** for multiplanar reconstructions?
   A. Spiral CT
   B. MRI
   C. Conventional radiography
   D. Linear tomography
4. The **photoelectric effect** is most likely to occur in:
   A. High kVp, low Z materials
   B. Low kVp, high Z materials
   C. High mAs, low kVp
   D. Low Z, high photon energy
5. **Compton scatter** increases with:
   A. Low kVp and small field
   B. Low kVp and thin part
   C. High kVp and thick part
   D. High Z and thin part
6. What is the purpose of **window leveling** in CT imaging?
   A. Controls slice thickness
   B. Alters image sharpness
   C. Adjusts brightness
   D. Reduces beam hardening
7. The **CTDI** value measures:
   A. Image contrast
   B. Beam quality
   C. Patient dose per slice
   D. Detector efficiency

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8. **Signal-to-noise ratio (SNR)** improves by:
   A. Increasing SID
   B. Increasing mAs
   C. Reducing kVp
   D. Decreasing FOV
9. **Magnetic susceptibility artifacts** are commonly seen in MRI due to:
   A. Fat
   B. Fluid
   C. Air or metal
   D. Bone
10. In **T2-weighted MRI**, fluid appears:
    A. Dark
    B. Bright
    C. Gray
    D. Same as fat
11. What is the role of a **gradient coil** in MRI?
    A. Excites hydrogen nuclei
    B. Improves RF shielding
    C. Provides spatial localization
    D. Detects echo signal
12. The **Nyquist frequency** in digital imaging refers to:
    A. Radiation dose
    B. Energy threshold
    C. Maximum spatial resolution without aliasing
    D. Maximum pixel value
13. In mammography, **molybdenum filters** are used because:
    A. They produce hard beams
    B. They improve contrast for soft tissues
    C. They block all scatter
    D. They allow higher mA
14. A **wide window width** on a CT image results in:
    A. Low contrast
    B. High contrast
    C. Bright image
    D. Pixel blooming
15. Which parameter directly controls **image noise** in CT?
    A. kVp
    B. Pitch

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C. mAs
D. Slice thickness

16. **Dynamic range** in digital detectors refers to:
    A. Noise threshold
    B. Radiation absorption range
    C. Range of gray levels
    D. Pixel dimension range
17. **Beam collimation** in CT affects:
    A. Image brightness
    B. Slice thickness and dose
    C. Window width
    D. Detector speed
18. **A 10:1 grid** will allow:
    A. More scatter to pass
    B. Less primary beam to pass
    C. High contrast images
    D. Short exposure times
19. Which of the following is **not** a feature of **DR systems**?
    A. TFT
    B. Photostimulable phosphor
    C. Flat panel detector
    D. Direct-to-digital capture
20. What is the function of **raster scanning** in CR readers?
    A. Store the image
    B. Laser scans plate line by line
    C. Transfer image to PACS
    D. Control mAs
21. **An increase in exposure latitude** results in:
    A. Narrower gray scale
    B. More visible noise
    C. Less room for error
    D. Greater flexibility in exposure
22. **Bit depth** defines:
    A. Detector size
    B. Pixel size
    C. Number of grayscale levels
    D. Sampling rate
23. **Volume averaging** in CT can lead to:
    A. Higher resolution

B. Artifacts
C. Beam hardening
D. Incorrect tissue density

24. **MPR (Multiplanar Reconstruction)** is best achieved with:
    A. Thin contiguous slices
    B. Spiral artifacts
    C. Thick slices
    D. Step wedge filter
25. **Zero-fill interpolation** in MRI is used to:
    A. Reduce scan time
    B. Improve contrast
    C. Improve image appearance
    D. Suppress noise
26. In MRI, **TR (repetition time)** is primarily associated with:
    A. T2 weighting
    B. Image sharpness
    C. T1 contrast
    D. Gradient intensity
27. **CT number for fat** is approximately:
    A. +100
    B. +30
    C. -100
    D. 0
28. What happens if the **pixel size** is reduced while keeping FOV constant?
    A. Resolution increases
    B. Resolution decreases
    C. Bit depth increases
    D. Gray levels reduce
29. A **steeper H&D curve** in film indicates:
    A. Lower contrast
    B. Higher contrast
    C. Low sensitivity
    D. High latitude
30. What parameter is most responsible for **image aliasing**?
    A. Pixel depth
    B. Sampling frequency
    C. mA
    D. Matrix size

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31. The **slice thickness in CT** is mainly determined by:
    A. kVp
    B. Collimator width
    C. Detector matrix
    D. Pitch
32. In MRI, **T2 decay** is caused by:
    A. Energy loss to surroundings
    B. Dephasing of spins
    C. Hydrogen depletion
    D. Motion artifact
33. In X-ray image formation, **umbra** refers to:
    A. Edge blur
    B. Full shadow
    C. Partial shadow
    D. Image magnification
34. The principle behind **MRI safety zones** is to:
    A. Control access to magnet
    B. Minimize mA
    C. Limit X-ray scatter
    D. Reduce SAR
35. **High-attenuation structures** on CT (e.g., bone) appear:
    A. Black
    B. White
    C. Gray
    D. Pixelated
36. In DSA, **carbon dioxide (CO_2)** is used as a contrast because it is:
    A. Radiopaque
    B. Non-allergenic and radiolucent
    C. Paramagnetic
    D. Positive contrast agent
37. The best imaging technique to detect **acute hemorrhage** is:
    A. MRI T1
    B. MRI T2
    C. Non-contrast CT
    D. Ultrasound
38. **Parallel imaging** in MRI helps to:
    A. Increase image noise
    B. Reduce scan time

C. Improve TR
D. Enhance SAR

39. **The Gibbs artifact** in MRI is caused by:
    A. RF interference
    B. Undersampling
    C. Metal implants
    D. Motion
40. Which imaging method is most affected by **beam hardening**?
    A. DR
    B. CT
    C. MRI
    D. Fluoroscopy
41. **Artifact caused by patient movement** appears as:
    A. Pixelation
    B. Double exposure
    C. Blurring
    D. Aliasing
42. **SAR (Specific Absorption Rate)** in MRI is a measure of:
    A. Noise
    B. Energy absorbed by tissue
    C. Gradient speed
    D. TR per voxel
43. **Radiation weighting factor (WR)** for X-rays is:
    A. 10
    B. 1
    C. 0
    D. 5
44. **Filtration in X-ray tube** removes:
    A. High-energy X-rays
    B. Primary beam
    C. Low-energy X-rays
    D. Scattered radiation
45. Which filter is typically used in **high-resolution CT of the lung**?
    A. Bone algorithm
    B. Soft tissue kernel
    C. Smooth filter
    D. Low-pass filter
46. **PET scan** uses radiopharmaceuticals that emit:
    A. Gamma rays

B. X-rays
C. Positrons
D. Neutrons

47. **Shimming** in MRI is done to:
    A. Reduce SAR
    B. Adjust magnet homogeneity
    C. Increase contrast
    D. Block RF
48. In fluoroscopy, **pulsed mode** is used to:
    A. Increase temporal resolution
    B. Reduce patient dose
    C. Increase frame rate
    D. Avoid scatter
49. A **Larmor frequency** in MRI is dependent on:
    A. TR and TE
    B. Magnetic field strength
    C. Coil size
    D. T1 values
50. In CR, if the image plate is not erased before reuse, it results in:
    A. Ghost image
    B. Grid artifact
    C. Quantum mottle
    D. White spots

✅Answers – Model Test Paper 5

1.	C	2. D	3. A	4. B	5. C	6. C	7. C	8. B	9. C	10. B
2.	C	12. C	13. B	14. A	15. C	16. C	17. B	18. C	19. B	20. B
3.	D	22. C	23. D	24. A	25. C	26. C	27. C	28. A	29. B	30. B
4.	B	32. B	33. B	34. A	35. B	36. B	37. C	38. B	39. B	40. B
5.	C	42. B	43. B	44. C	45. A	46. C	47. B	48. B	49. B	50. A

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Model Test Paper 6

1. Which of the following has the **highest radiographic density**?
   A. Bone
   B. Fat
   C. Metal
   D. Air
2. What is the primary function of **AEC (Automatic Exposure Control)** in radiography?
   A. Adjust image sharpness
   B. Measure patient dose
   C. Automatically terminate exposure
   D. Calibrate detectors
3. The **inverse square law** relates to:
   A. Image sharpness
   B. Contrast resolution
   C. Intensity of X-ray with distance
   D. Scatter production
4. In **CT imaging**, increased pitch results in:
   A. Better resolution
   B. Higher patient dose
   C. Faster scan, lower dose
   D. Increased scan time
5. The **actual focal spot** is located:
   A. On the cathode filament
   B. On the target of the anode
   C. Between grid lines
   D. At SID
6. The ideal **kVp for barium studies** is:
   A. 40–60 kVp
   B. 70–80 kVp
   C. 100–110 kVp
   D. 120–140 kVp
7. **Geometric unsharpness** can be reduced by:
   A. Increasing OID
   B. Increasing focal spot size
   C. Decreasing SID
   D. Using small focal spot
8. Which of the following causes a **Moire pattern**?
   A. Double exposure

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B. Overlapping grid frequency and scan lines
C. High kVp
D. Quantum mottle

9. A **PA chest X-ray** is preferred over AP because:
   A. It's faster
   B. Less dose
   C. Better heart size representation
   D. Less positioning required
10. The **ionization chamber** in AEC is located:
   A. Behind the image receptor
   B. In the grid
   C. Between patient and image receptor
   D. Near the collimator
11. The best imaging modality to evaluate **meniscal tear** in knee is:
   A. CT
   B. MRI
   C. Ultrasound
   D. X-ray
12. **Pixel size** is directly affected by:
   A. Matrix size and FOV
   B. Bit depth
   C. Collimator size
   D. Window width
13. The **line focus principle** is used to:
   A. Minimize scatter
   B. Improve grid ratio
   C. Maintain small effective focal spot
   D. Enhance DQE
14. The highest **occupational exposure** for radiographers typically comes from:
   A. Primary beam
   B. Scatter radiation
   C. Leakage radiation
   D. PACS terminal
15. Which CT artifact appears as streaks from metal implants?
   A. Beam hardening
   B. Ring artifact
   C. Partial volume
   D. Star artifact

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16. The **S-number** in Fuji CR system represents:
    A. kVp used
    B. Radiation dose indicator
    C. Time of exposure
    D. Matrix resolution
17. **Gadolinium** is used in MRI because it:
    A. Enhances T2 contrast
    B. Is highly radiopaque
    C. Alters magnetic properties of tissues
    D. Emits positrons
18. In **fluoroscopy**, pulsed mode is used primarily to:
    A. Improve contrast
    B. Reduce motion
    C. Minimize patient dose
    D. Increase brightness
19. In **radiation protection**, the term "controlled area" means:
    A. Area open to public
    B. No X-ray allowed
    C. Area with restricted occupational exposure
    D. Emergency zone
20. **Image magnification** in radiography increases with:
    A. High SID
    B. Short OID
    C. Large OID
    D. Low mAs
21. The **grid cutoff** appears as:
    A. Bright image center
    B. Reduced density on image edges
    C. Increased contrast
    D. Dark bands across image
22. **Contrast media** used in hysterosalpingography (HSG) is:
    A. Barium
    B. Iodinated oil
    C. Water
    D. CO_2
23. Which is **most susceptible** to radiation damage?
    A. Muscle
    B. Skin

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C. Gonads
D. Cartilage

24. In **digital imaging**, increasing bit depth improves:
    A. Spatial resolution
    B. Gray level range
    C. Scan speed
    D. Noise level
25. **Tomographic angle** in tomography determines:
    A. Image contrast
    B. Exposure time
    C. Thickness of the focal plane
    D. Scatter dose
26. Which pathology shows a **"ground-glass" appearance** in chest imaging?
    A. Pneumothorax
    B. Emphysema
    C. Pulmonary edema
    D. Interstitial lung disease
27. In DEXA scan, **T-score** compares patient bone density to:
    A. Age-matched average
    B. Healthy 30-year-old
    C. General population
    D. Own previous scan
28. Which parameter improves **contrast resolution** in CT?
    A. High kVp
    B. Thin slices
    C. Smooth algorithm
    D. Low mAs
29. Which radiation interaction is most important in **contrast resolution**?
    A. Compton
    B. Photoelectric
    C. Coherent
    D. Bremsstrahlung
30. The best technique to reduce **aliasing artifacts** is:
    A. Increase kVp
    B. Use high sampling rate
    C. Use low grid ratio
    D. Increase pixel size
31. The artifact seen in **MRI spine** due to swallowing is:
    A. Chemical shift

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B. Flow artifact
C. Motion artifact
D. Phase wrap

32. **Ring artifact** in CT is due to:
    A. Pitch error
    B. Faulty detector
    C. Metal inside patient
    D. Partial volume averaging
33. The use of **sodium bicarbonate before contrast** helps prevent:
    A. Stroke
    B. Contrast nephropathy
    C. Allergic reaction
    D. Extravasation
34. **Spatial resolution** in CT is best measured using:
    A. Line-pair phantom
    B. MTF
    C. SNR
    D. DAP
35. In CR, **slow scan direction** refers to:
    A. Laser motion
    B. Plate feed direction
    C. Sampling rate
    D. Bit depth
36. Increasing **exposure time** with same mAs will result in:
    A. Less motion blur
    B. Higher patient dose
    C. Same dose, more chance of blur
    D. Lower image density
37. What is the best **MR sequence** for acute stroke detection?
    A. T2
    B. FLAIR
    C. Diffusion-weighted imaging (DWI)
    D. Gradient echo
38. In **digital mammography**, the detector with best spatial resolution is:
    A. CCD
    B. Amorphous selenium
    C. PSP
    D. TFT

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39. **Contrast-to-noise ratio (CNR)** is improved by:
    A. Increasing SID
    B. Increasing kVp
    C. Decreasing pixel size
    D. Using adequate mAs
40. **Effective dose** accounts for:
    A. Radiation intensity
    B. Absorbed dose and tissue sensitivity
    C. Organ depth
    D. Shielding used
41. The **purpose of bucky mechanism** is to:
    A. Collimate beam
    B. Increase resolution
    C. Move grid during exposure
    D. Reduce radiation dose
42. The **Hounsfield unit of lung tissue** is approximately:
    A. -500 to -900
    B. -100
    C. +20
    D. 0
43. **Dose creep** in digital imaging refers to:
    A. Rapid increase in dose
    B. Accidental leakage
    C. Gradual increase in patient dose
    D. Detector malfunction
44. The maximum **leakage radiation** allowed from an X-ray tube housing at 1 meter is:
    A. 0.5 mGy/hr
    B. 1 mGy/hr
    C. 100 mR/hr
    D. 0.1 mGy/hr
45. The **radiation dose from chest X-ray** is approximately:
    A. 0.01 mSv
    B. 1 mSv
    C. 0.1 mSv
    D. 0.5 mSv
46. **Spinning top test** is used to check:
    A. Grid alignment
    B. Exposure timer accuracy

C. CT pitch
D. Detector alignment

47. **Photomultiplier tube (PMT)** is used in:
    A. CT scanner
    B. PACS
    C. Scintillation camera
    D. MRI coil
48. **SID affects** all except:
    A. Magnification
    B. Dose
    C. Focal spot blooming
    D. Sharpness
49. The most common **film artifact** caused by static electricity is:
    A. Crescent mark
    B. Tree branch pattern
    C. Grid cutoff
    D. Roller mark
50. **Water-equivalent dose in CT** means:
    A. Equal to 100 kVp
    B. Reference dose using water phantoms
    C. Effective dose normalized
    D. Shielded exposure

Answers – Model Test Paper 6

1. C	2. C	3. C	4. C	5. B	6. C	7. D	8. B	9. C	10. C
2. B	12. A	13. C	14. B	15. D	16. B	17. C	18. C	19. C	20. C
3. B	22. B	23. C	24. B	25. C	26. D	27. B	28. C	29. B	30. B
4. C	32. B	33. B	34. A	35. B	36. C	37. C	38. B	39. D	40. B
5. C	42. A	43. C	44. C	45. A	46. B	47. C	48. C	49. B	50. B

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Model Test Paper 7

1. In radiography, a **short scale of contrast** refers to:
   A. Many grays
   B. Low contrast
   C. High contrast with few grays
   D. Equal black and white
2. The main purpose of **RAO/LAO chest X-ray** is to:
   A. Evaluate ribs
   B. Study diaphragm
   C. Visualize oblique mediastinal structures
   D. Reduce lung field exposure
3. In PACS, the **DICOM standard** ensures:
   A. Data encryption
   B. File compression
   C. Interoperability between systems
   D. Laser printing
4. A **high kVp technique** generally results in:
   A. High contrast
   B. Low patient dose
   C. High image noise
   D. High spatial resolution
5. A **step wedge** is used in QA to assess:
   A. mA linearity
   B. Focal spot size
   C. Image contrast
   D. HVL accuracy
6. In CT, **pitch > 1** means:
   A. Overlapping slices
   B. No table movement
   C. Faster scan, lower dose
   D. Higher resolution
7. In MRI, **STIR sequence** is best for suppressing:
   A. Water
   B. Bone
   C. Fat
   D. Air
8. The **effective dose** takes into account:
   A. Absorbed dose and tissue weighting

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B. Imaging time
C. SNR
D. Magnetic field strength

9. What is the main use of **grids** in radiography?
   A. Increase brightness
   B. Reduce patient dose
   C. Eliminate scatter reaching the detector
   D. Improve temporal resolution
10. The **modulation transfer function (MTF)** is used to measure:
   A. Image noise
   B. System sharpness
   C. Contrast index
   D. Optical density
11. The **ACR phantom** is used in MRI QA to check:
   A. Radiation dose
   B. SAR
   C. Geometric distortion, resolution, and contrast
   D. Exposure linearity
12. **Spiral CT** uses what type of detector movement?
   A. Static
   B. Step-and-shoot
   C. Continuous helical rotation
   D. Oscillatory motion
13. The **most radiosensitive tissue** in the body is:
   A. Liver
   B. Muscle
   C. Lens of eye
   D. Skin
14. **Darkroom fog** is primarily caused by:
   A. Low developer temperature
   B. Weak fixer
   C. Light leaks or unsafe safelights
   D. Long drying time
15. **Photoconductors** like amorphous selenium are used in:
   A. CR
   B. DR – direct conversion
   C. MRI coils
   D. CT detectors

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16. The **penumbra** increases with:
    A. Smaller focal spot
    B. Increased SID
    C. Increased OID
    D. Reduced mA
17. In CT, **beam collimation** determines:
    A. Slice thickness
    B. Pixel size
    C. Matrix
    D. Noise index
18. **Ghosting artifact** in CR occurs due to:
    A. Delayed readout
    B. Incomplete erasure
    C. Slow scan
    D. Fast scan error
19. **Signal averaging** in MRI helps to:
    A. Increase spatial resolution
    B. Reduce scan time
    C. Improve SNR
    D. Enhance motion
20. In a **LPO view of abdomen**, which kidney is better visualized?
    A. Left
    B. Right
    C. Both equally
    D. Not used for kidney
21. **Contrast agents** that dissociate into ions are called:
    A. Non-ionic
    B. Ionic
    C. Paramagnetic
    D. Viscous
22. Which of the following is **not a radiation unit**?
    A. Gray
    B. Sievert
    C. Becquerel
    D. Tesla
23. **Filtration in X-ray** is used to:
    A. Increase density
    B. Increase low-energy radiation

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C. Remove soft X-rays
D. Enhance subject contrast

24. A **high DQE (Detective Quantum Efficiency)** means:
    A. Poor detector
    B. No need for grids
    C. High efficiency, less dose required
    D. High resolution
25. The **R/F room** refers to:
    A. Radiology/Fluoroscopy
    B. Radiography/Film
    C. Room/Frame
    D. Roentgen/Focus
26. The typical **slice thickness in HRCT lung** is:
    A. 10 mm
    B. 5 mm
    C. 3 mm
    D. 1–1.5 mm
27. **Aliasing artifacts** in MRI are commonly caused by:
    A. Echo time issues
    B. Undersampling in phase direction
    C. Inversion time errors
    D. Overheating
28. Which **MRI sequence** is best to visualize CSF?
    A. T1
    B. GRE
    C. T2
    D. Diffusion
29. **Saturation artifact** occurs in MRI due to:
    A. Motion
    B. Incorrect TR
    C. Repeated RF pulses
    D. Coil malfunction
30. The **latent image** in film-screen radiography is formed in:
    A. Developer
    B. Cassette
    C. Silver halide crystals
    D. Fixer
31. The **most important parameter** affecting contrast in film radiography is:
    A. SID

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B. Grid ratio
C. kVp
D. Focal spot

32. **Window width** in CT controls:
    A. Image sharpness
    B. Brightness
    C. Contrast
    D. Spatial resolution
33. The **eye of the Scotty dog** in lumbar spine oblique view represents:
    A. Lamina
    B. Pedicle
    C. Pars interarticularis
    D. Spinous process
34. In **angiography**, the **catheter is usually inserted via**:
    A. Subclavian vein
    B. Femoral artery
    C. Jugular vein
    D. Brachial artery
35. The **primary controller of film density** is:
    A. kVp
    B. Time
    C. mAs
    D. SID
36. The **air kerma** unit measures:
    A. Effective dose
    B. Radiation energy per mass of air
    C. Absorbed dose in water
    D. Scattered dose
37. **Ion chamber** is preferred for QA because of:
    A. High spatial resolution
    B. Linearity and accuracy
    C. Low exposure use
    D. Thermal resistance
38. The **scatter-to-primary ratio** is lowest for:
    A. Pelvis
    B. Skull
    C. Abdomen
    D. Chest

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39. A **fluoroscopy frame rate of 30 fps** is used to:
    A. Lower dose
    B. Improve temporal resolution
    C. Improve contrast
    D. Reduce blur
40. **Slice thickness** in MRI is affected by:
    A. Gradient amplitude
    B. RF coil size
    C. Receiver bandwidth
    D. Slice-select gradient and RF pulse
41. The **contrast used in MRCP** is:
    A. None
    B. Gadolinium
    C. Iodine
    D. Barium
42. **TLD badges** use:
    A. Barium fluorohalide
    B. Silver nitrate
    C. Lithium fluoride
    D. Amorphous selenium
43. Which **view best demonstrates maxillary sinuses**?
    A. Caldwell
    B. Water's view
    C. Lateral
    D. Open mouth
44. In **myelography**, contrast is injected into:
    A. Subdural space
    B. Epidural space
    C. Subarachnoid space
    D. Peritoneal cavity
45. **CT fluoroscopy** is primarily used for:
    A. Bone fracture
    B. Biopsy and intervention
    C. Dental CT
    D. Contrast study
46. In QA, a **failing wire mesh test** indicates:
    A. Poor spatial resolution
    B. Light leak

C. Motion blur
D. Grid misalignment

47. **Grid cut-off** is most likely with:
A. High-ratio grids misaligned
B. Long SID
C. Low kVp
D. Cross-table exposures
48. In PACS, **image archival** refers to:
A. Repeating exposure
B. Image printing
C. Long-term storage
D. Contrast evaluation
49. The **speed class** in digital radiography affects:
A. Scan speed
B. Patient dose and noise
C. Window level
D. Bit depth
50. The **resolution of CR** is typically limited by:
A. Pixel size
B. Laser beam size
C. Cassette size
D. Plate erasure

Answers – Model Test Paper 7

1.	C	2. C	3. C	4. B	5. C	6. C	7. C	8. A	9. C	10. B
2.	C	12. C	13. C	14. C	15. B	16. C	17. A	18. B	19. C	20. B
3.	B	22. D	23. C	24. C	25. A	26. D	27. B	28. C	29. C	30. C
4.	C	32. C	33. B	34. B	35. C	36. B	37. B	38. D	39. B	40. D
5.	A	42. C	43. B	44. C	45. B	46. D	47. A	48. C	49. B	50. B

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Model Test paper 8

1. **The "Scotty Dog" appearance** in the lumbar spine oblique view is used to assess:
   A. Intervertebral disc
   B. Pars interarticularis
   C. Transverse process
   D. Spinous process
2. **High-frequency X-ray generators** are preferred because they:
   A. Are more portable
   B. Improve contrast
   C. Reduce exposure time and ripple
   D. Increase spatial resolution
3. The **photoelectric effect** contributes to:
   A. Noise
   B. Contrast
   C. Scatter
   D. Patient motion
4. The main use of **RAO esophagus view** is to:
   A. Avoid spine superimposition
   B. Visualize diaphragm
   C. Check gastric bubbles
   D. Assess liver
5. **Focal spot blooming** occurs due to:
   A. Low tube current
   B. Long exposure time
   C. Overheating at the anode
   D. High-speed rotation
6. **PACS compression** types include:
   A. Pixel-wise and grid-wise
   B. Spatial and temporal
   C. Lossless and lossy
   D. Digital and analog
7. **The most radiosensitive blood cell** is:
   A. Erythrocyte
   B. Neutrophil
   C. Platelet
   D. Lymphocyte
8. A **high grid ratio**:
   A. Increases scatter

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B. Decreases image quality
C. Requires precise alignment
D. Reduces patient dose

9. In CT, a **high pitch** leads to:
   A. More overlap
   B. Increased radiation dose
   C. Faster scanning and lower dose
   D. Greater contrast
10. **T1 relaxation** in MRI refers to:
   A. Spin dephasing
   B. Transverse magnetization loss
   C. Recovery of longitudinal magnetization
   D. Echo time
11. The **window width** in CT controls:
   A. Image noise
   B. Image sharpness
   C. Image contrast
   D. Detector sensitivity
12. **Tomographic angle** is inversely related to:
   A. Image noise
   B. Exposure time
   C. Section thickness
   D. SID
13. **Primary beam** is defined as radiation:
   A. That passes through the patient
   B. Exiting the collimator
   C. Reflected by structures
   D. Scatter from the detector
14. In DSA, **subtraction** improves:
   A. Spatial resolution
   B. Temporal resolution
   C. Vascular visibility
   D. Matrix size
15. A **high-frequency generator** reduces:
   A. Line voltage
   B. Ripple
   C. Exposure latitude
   D. Photon energy

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16. The **unit of exposure** in air is:
    A. Gray
    B. Sievert
    C. Roentgen
    D. Becquerel
17. In MRI, the term **FID (Free Induction Decay)** refers to:
    A. External pulse
    B. Coil resistance
    C. Signal emitted by protons after RF
    D. SAR
18. In DR systems, the **fill factor** is:
    A. Ratio of exposure to energy
    B. Area of pixel sensitive to X-rays
    C. Time delay of readout
    D. Grid efficiency
19. **Contrast resolution** is best in:
    A. Conventional X-ray
    B. CT
    C. MRI
    D. Mammography
20. **Aliasing in digital imaging** is minimized by:
    A. Low sampling frequency
    B. High sampling frequency
    C. High mA
    D. Using filters
21. **Edge enhancement** is commonly used to:
    A. Increase noise
    B. Improve motion blur
    C. Sharpen bony margins
    D. Decrease dose
22. **Air gap technique** is used to reduce:
    A. Magnification
    B. Scatter radiation
    C. Penumbra
    D. Image contrast
23. **T2-weighted MRI** images are useful for visualizing:
    A. Fatty liver
    B. Bone marrow

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C. CSF and edema
D. Calcium

24. A **flasher artifact** in CR is caused by:
    A. Incomplete erasure
    B. Light leak
    C. Barcode malfunction
    D. Motion
25. **Effective dose (E)** is measured in:
    A. Gray
    B. Roentgen
    C. Becquerel
    D. Sievert
26. **Exponential attenuation** means:
    A. Beam intensity increases with thickness
    B. Beam intensity halves with each cm
    C. Constant reduction
    D. Each photon has the same chance to interact
27. **Posteroanterior view of chest** is preferred because:
    A. Easier to position
    B. Reduces scatter
    C. Minimizes heart magnification
    D. Improves rib contrast
28. **Window leveling** in CT controls:
    A. Sharpness
    B. Noise
    C. Brightness
    D. Matrix size
29. **Tissue with the lowest magnetic susceptibility**:
    A. Air
    B. Water
    C. Metal
    D. Bone
30. A **saddle joint** is seen at:
    A. Elbow
    B. Knee
    C. Thumb (1st CMC)
    D. Hip
31. In PACS, **RAID** refers to:
    A. Redundant storage

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B. File compression
C. Image manipulation
D. Network speed

32. **NEX (Number of Excitations)** in MRI affects:
    A. Signal strength
    B. RF bandwidth
    C. Spatial distortion
    D. Scan coverage
33. **Lead equivalent apron** for general radiographic protection is:
    A. 0.1 mm
    B. 0.25 mm
    C. 0.5 mm
    D. 1.0 mm
34. In **bone densitometry (DEXA)**, the forearm is used if:
    A. Hip surgery was done
    B. Patient is pregnant
    C. Thorax is injured
    D. Arms are longer
35. **High-pass filters** in digital imaging enhance:
    A. Blurring
    B. Low frequencies
    C. Sharp edges
    D. Contrast uniformity
36. In radiography, **artifact due to static electricity** resembles:
    A. Tree branches
    B. Circular rings
    C. Grid lines
    D. Double exposure
37. **MOSFET dosimeters** are used to:
    A. Measure blood oxygen
    B. Store digital data
    C. Measure real-time radiation dose
    D. Detect scatter
38. A **misaligned central ray** can cause:
    A. High dose
    B. Motion artifact
    C. Distortion
    D. Repetition of exam

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39. **Photostimulable phosphor** emits light when stimulated by:
    A. X-rays
    B. UV rays
    C. Laser beam
    D. Electric field
40. The **half-value layer (HVL)** increases with:
    A. Added filtration
    B. Low kVp
    C. Decreased SID
    D. High mAs
41. In MRI, **TI (Inversion Time)** is used in:
    A. T1 imaging
    B. Spin echo
    C. STIR and FLAIR sequences
    D. GRE
42. In chest radiograph, **left hemidiaphragm is lower** because:
    A. Heart pushes it
    B. Stomach gas
    C. Liver weighs down
    D. Lung expansion
43. **Scatter radiation** is mostly governed by:
    A. SID
    B. mAs
    C. Field size and patient thickness
    D. Matrix size
44. **Motion artifacts** in MRI are more prominent in:
    A. Frequency direction
    B. Phase-encoding direction
    C. Slice selection
    D. Bandwidth
45. A **paramagnetic contrast agent** in MRI:
    A. Produces dark signal
    B. Reduces T1 and T2
    C. Is iodine-based
    D. Has high Z number
46. **Pitch** in helical CT is defined as:
    A. Table movement per rotation / beam width
    B. Beam intensity / detector width

C. Slice thickness / gantry angle
D. Scan speed / matrix

47. **Contrast injection flow rate** in CT angiography should be:
    A. <1 mL/sec
    B. 2–4 mL/sec
    C. 5–7 mL/sec
    D. >10 mL/sec
48. **Metallic implants** in MRI cause:
    A. Beam hardening
    B. Geometric distortion
    C. Overexposure
    D. Ring artifact
49. **Thermoluminescent dosimeters (TLDs)** are read by:
    A. Radiation meter
    B. Electrical signal
    C. Heat and light emission
    D. X-ray excitation
50. **Reciprocity law failure** is more likely at:
    A. High mAs
    B. Very short or long exposure times
    C. Normal exposures
    D. Digital detectors

Answers – Model Test Paper 8

1.	B	2. C	3. B	4. A	5. C	6. C	7. D	8. C	9. C	10. C
2.	C	12. C	13. B	14. C	15. B	16. C	17. C	18. B	19. C	20. B
3.	C	22. B	23. C	24. C	25. D	26. D	27. C	28. C	29. B	30. C
4.	A	32. A	33. C	34. A	35. C	36. A	37. C	38. C	39. C	40. A
5.	C	42. A	43. C	44. B	45. B	46. A	47. C	48. B	49. C	50. B

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Model Test Paper 9

1. The **zebra artifact** in MRI is primarily related to:
   A. Susceptibility differences
   B. Motion
   C. Parallel imaging techniques
   D. Low field strength
2. **Filtration in X-ray tubes** is mainly used to:
   A. Harden the beam by removing low-energy photons
   B. Reduce image resolution
   C. Increase contrast
   D. Improve SNR
3. The **PA axial (Caldwell) projection** is used to best visualize:
   A. Zygomatic arches
   B. Frontal and ethmoid sinuses
   C. Mandible
   D. Sphenoid sinus
4. In **CT dose modulation**, the system adjusts:
   A. Slice thickness
   B. Tube current (mA) during scan
   C. Pitch
   D. Detector sensitivity
5. In **MRI**, the **TE (echo time)** affects:
   A. Spatial resolution
   B. Signal strength
   C. Image contrast
   D. FOV
6. The **space between the patient and the image receptor** is called:
   A. SID
   B. SOD
   C. OID
   D. SSD
7. **Grid frequency** refers to:
   A. The number of lead strips per cm
   B. Tube output cycles
   C. mA used
   D. Number of images per second
8. A **defective photostimulable plate (PSP)** may produce:
   A. Ring artifact

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B. Moiré pattern
C. White line artifact
D. Zebra stripes

9. In **automatic exposure control (AEC)**, the backup timer prevents:
   A. Grid failure
   B. Overexposure
   C. Collimator malfunction
   D. Detector shift
10. **MR signal intensity** of CSF is highest in:
   A. T1
   B. T2
   C. GRE
   D. STIR
11. The **primary advantage of PACS** is:
   A. Higher resolution
   B. Reduced image noise
   C. Quick storage and retrieval of digital images
   D. Use of analog films
12. The **line pair per mm (lp/mm)** measure is related to:
   A. Bit depth
   B. Spatial resolution
   C. DQE
   D. SNR
13. **Cupping artifact** is observed in:
   A. MRI
   B. X-ray
   C. CT
   D. Ultrasound
14. **Inverse square law** states that:
   A. Radiation intensity decreases with increased mAs
   B. Intensity is inversely proportional to the square of the distance
   C. SID is directly proportional to OID
   D. Contrast increases with distance
15. **Ghosting artifacts in MRI** are commonly caused by:
   A. Eddy currents
   B. Incomplete RF pulse
   C. Motion from patient respiration
   D. Under-sampling

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16. **High-attenuation structures** on CT appear:
    A. White
    B. Gray
    C. Black
    D. Invisible
17. **Hounsfield units (HU)** for water in CT are:
    A. +20
    B. 0
    C. -1000
    D. +1000
18. The **threshold dose for skin erythema** in fluoroscopy is approximately:
    A. 0.01 Gy
    B. 0.5 Gy
    C. 2 Gy
    D. 10 Gy
19. The **flashing artifacts** in CR may be due to:
    A. Overexposure
    B. Scanner lamp error
    C. Rapid erasure light failure
    D. Barcode misread
20. A **myelogram** is done to visualize the:
    A. GI tract
    B. Urinary bladder
    C. Subarachnoid space of spinal cord
    D. Gallbladder
21. In **digital radiography**, bit depth affects:
    A. Spatial resolution
    B. Image matrix
    C. Gray level range
    D. Field of view
22. The **photoelectric effect** occurs more in:
    A. High kVp
    B. Dense materials with high atomic number
    C. Thin body parts
    D. Soft tissue
23. The **exposure index (EI)** in DR indicates:
    A. Image brightness
    B. Beam quality

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C. Incident radiation to detector
D. Speed of exposure

24. **Edge enhancement** in post-processing increases:
    A. Brightness
    B. Sharpness
    C. Quantum mottle
    D. Scan speed
25. A **Seldinger technique** is used for:
    A. MRI contrast injection
    B. Intravenous cannulation
    C. Arterial puncture in angiography
    D. Cardiac CT
26. **Quality control of darkroom safelight** is done using:
    A. Spinning top test
    B. Wire mesh test
    C. Coin test
    D. Timer circuit
27. In **Doppler ultrasound**, flow towards the probe shows:
    A. Blue shift
    B. Red shift
    C. No shift
    D. Gray echo
28. **Bone window** in CT is used to assess:
    A. Liver
    B. Lungs
    C. Skull fractures
    D. Contrast reactions
29. The **most sensitive time** for radiation-induced malformations during pregnancy is:
    A. 0–1 week
    B. 2–15 weeks
    C. 20–30 weeks
    D. Third trimester
30. A **flat-panel detector** in DR works on:
    A. Film principle
    B. TFT array with photodiode
    C. Fluorescence
    D. Analog matrix
31. **CT fluoroscopy** is commonly used for:
    A. Bone imaging

B. Biopsy guidance
C. Pulmonary embolism
D. Aneurysm evaluation

32. In **radiographic QA**, the wire mesh test evaluates:
    A. Timer accuracy
    B. Resolution
    C. Screen-film contact
    D. Contrast
33. **MRI signal loss near metal implants** is due to:
    A. RF absorption
    B. Susceptibility artifact
    C. Magnetic resonance effect
    D. Photoelectric effect
34. The **mean glandular dose** is a concern in:
    A. Mammography
    B. Skull X-ray
    C. CT abdomen
    D. Pelvis ultrasound
35. A **dose area product (DAP)** is calculated by:
    A. Dose × exposure time
    B. Area × distance
    C. Air kerma × beam area
    D. Exposure index × pixel pitch
36. In MRI, **RF shielding** is done using:
    A. Copper or aluminum lining
    B. Lead walls
    C. Steel sheets
    D. Tungsten
37. The **modality with highest spatial resolution** is:
    A. CT
    B. DR
    C. MRI
    D. Mammography
38. A **large OID** causes:
    A. Less scatter
    B. Increased magnification
    C. Sharper image
    D. Reduced dose

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39. The **double-contrast barium enema** uses:
    A. Barium only
    B. Water only
    C. Air and barium
    D. Gadolinium
40. **Flat-field correction** is done to:
    A. Equalize detector sensitivity
    B. Enhance contrast
    C. Compensate for motion
    D. Blur bone edges
41. **Dynamic range** in digital imaging refers to:
    A. Maximum spatial resolution
    B. Range of exposures that can be accurately captured
    C. Temporal resolution
    D. Laser scan rate
42. **Beam hardening** is a problem in:
    A. MRI
    B. CR
    C. CT
    D. DR
43. In **spinal imaging**, the open mouth view best shows:
    A. Dens (odontoid process)
    B. Sacrum
    C. Cervical body
    D. Spinous process
44. **RAO projection** is typically used for:
    A. Right colic flexure
    B. Left lung
    C. Left renal pelvis
    D. Left SI joint
45. A **collimator** in X-ray is used to:
    A. Increase exposure
    B. Block all radiation
    C. Restrict the beam and reduce scatter
    D. Increase contrast
46. The **Nyquist frequency** is half of:
    A. Detector size
    B. Matrix resolution

C. Sampling frequency
D. Signal-to-noise ratio

47. In **functional MRI**, BOLD signal is based on:
    A. Blood oxygen level differences
    B. Blood flow rate
    C. Heart rate
    D. Motion correction
48. The **signal-to-noise ratio (SNR)** improves with:
    A. Low mAs
    B. High mAs
    C. Low kVp
    D. Decreased SID
49. **Long-term image archiving** in PACS is done on:
    A. CD/DVD
    B. RAID hard drives or cloud
    C. Film
    D. Scanner memory
50. **Line pair phantom** is used to measure:
    A. Noise
    B. SNR
    C. Spatial resolution
    D. Contrast-to-noise ratio

Answers – Model Test Paper 9

1.	C	2. A	3. B	4. B	5. C	6. C	7. A	8. C	9. B	10. B
2.	C	12. B	13. C	14. B	15. C	16. A	17. B	18. C	19. C	20. C
3.	C	22. B	23. C	24. B	25. C	26. C	27. B	28. C	29. B	30. B
4.	B	32. C	33. B	34. A	35. C	36. A	37. D	38. B	39. C	40. A
5.	B	42. C	43. A	44. A	45. C	46. C	47. A	48. B	49. B	50. C

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Model Test Paper 10

1. **Photostimulable phosphor (PSP) plates** are primarily used in:
   A. CT
   B. CR
   C. DR (Direct)
   D. Fluoroscopy
2. The **T2 decay curve** in MRI represents loss of:
   A. Longitudinal magnetization
   B. Proton density
   C. Transverse magnetization
   D. Relaxation time
3. **AEC systems** fail to work properly if:
   A. kVp is changed
   B. Patient is off-center
   C. Grid is used
   D. Focal spot is reduced
4. The **heel effect** is more noticeable with:
   A. Small field size
   B. Low SID
   C. Large anode angle
   D. Small OID
5. **Motion artifacts** in CT appear as:
   A. Ring patterns
   B. Misregistration
   C. Dark bands
   D. Windmill effect
6. **Paranasal sinus radiograph** in Waters' view best demonstrates:
   A. Frontal sinus
   B. Ethmoid sinus
   C. Maxillary sinus
   D. Sphenoid sinus
7. The **modality with the best contrast resolution** is:
   A. CT
   B. MRI
   C. CR
   D. DR
8. **Gadolinium contrast** in MRI primarily affects:
   A. Proton density

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B. T2 time
C. T1 relaxation time
D. SAR

9. A **histogram analysis error** in digital radiography leads to:
   A. Overexposed image
   B. Poor image brightness/contrast
   C. Grid cutoff
   D. Increased spatial resolution
10. **Artifact due to metallic object** in MRI is known as:
   A. Truncation
   B. Moiré
   C. Susceptibility artifact
   D. Ghosting
11. **Low-pass filters** in digital imaging help in:
   A. Sharpening
   B. Reducing noise
   C. Increasing spatial resolution
   D. Enhancing edges
12. **Short scale contrast** results from:
   A. High kVp
   B. Low mAs
   C. Low kVp
   D. Increased filtration
13. The **full form of RIS** in radiology is:
   A. Radiographic Imaging System
   B. Radiology Information System
   C. Radiation Index System
   D. Remote Imaging Software
14. **RAO projection** of the stomach best demonstrates the:
   A. Fundus
   B. Body
   C. Antrum and pylorus
   D. Duodenum
15. The **unit of absorbed dose** is:
   A. Sievert
   B. Roentgen
   C. Gray
   D. Curie

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16. **Blooming artifact** in CT is associated with:
    A. Low pitch
    B. Metallic implants
    C. Fast rotation
    D. Motion
17. The **most radiosensitive stage of a cell** is:
    A. G0
    B. G1
    C. M phase
    D. S phase
18. **Mottle** in an X-ray image is caused by:
    A. High exposure
    B. Patient motion
    C. Random quantum variation
    D. Detector error
19. **Hounsfield unit of fat** is approximately:
    A. -100
    B. 0
    C. +50
    D. -1000
20. **TLDs are made of**:
    A. Sodium iodide
    B. Lithium fluoride
    C. Barium sulfate
    D. Calcium tungstate
21. **Ring artifact** in CT is usually due to:
    A. Faulty detector element
    B. Patient motion
    C. Beam hardening
    D. Contrast leakage
22. The **Scotty dog's neck** in lumbar oblique view represents:
    A. Lamina
    B. Pedicle
    C. Pars interarticularis
    D. Spinous process
23. **Collimation** helps in:
    A. Reducing sharpness
    B. Increasing scatter

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C. Limiting radiation field
D. Image blurring

24. A **twinkling artifact** is typically seen in:
    A. MRI
    B. Doppler ultrasound
    C. CT
    D. Fluoroscopy
25. **Film fog** appears as:
    A. Blackening unrelated to exposure
    B. White patch
    C. Sharp line
    D. Unprocessed image
26. The **dose equivalent** considers:
    A. Beam hardening
    B. LET and weighting factors
    C. Scintillation effect
    D. Radiographic latitude
27. **Image histogram** is used to analyze:
    A. Patient dose
    B. Exposure index
    C. Pixel intensity distribution
    D. Grid performance
28. **RAID system** in PACS provides:
    A. Rapid compression
    B. Redundant and safe image storage
    C. Magnetic signal modulation
    D. Enhanced analog recording
29. **CT number of cortical bone** is typically:
    A. -200
    B. 0
    C. +1000
    D. -100
30. **Truncation artifact** in MRI appears as:
    A. Wrap-around
    B. Ghost line
    C. Gibbs ringing
    D. Metal distortion
31. The **effective atomic number** of bone is closest to:
    A. 7

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B. 13
C. 20
D. 5

32. The **preferred view for cervical spine trauma** is:
    A. AP
    B. Lateral
    C. Odontoid
    D. Swimmer's
33. **Distance between X-ray tube and film** is known as:
    A. OID
    B. SID
    C. SOD
    D. FFD
34. The **bit depth** of a 12-bit system provides how many gray levels?
    A. 512
    B. 1024
    C. 2048
    D. 4096
35. **Automatic brightness control (ABC)** in fluoroscopy maintains:
    A. Sharpness
    B. Brightness regardless of patient thickness
    C. Grid alignment
    D. Laser speed
36. A **null signal** in MRI appears due to:
    A. Parallel imaging
    B. Long TE
    C. Fat suppression
    D. Flip angle error
37. The **photoelectric effect** is more prominent at:
    A. High kVp and high Z
    B. Low kVp and high Z
    C. High mAs
    D. Short exposure
38. **Exposure creep** in DR refers to:
    A. Gradual increase in exposure factors
    B. Motion artifact
    C. Detector damage
    D. Image fading

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39. The **anode heel effect** is useful in:
    A. Skull X-rays
    B. Chest imaging
    C. Long bone imaging
    D. Barium studies
40. The **time taken to read a CR plate** is approximately:
    A. 0.5 s
    B. 2–3 s
    C. 10 s
    D. 20–30 s
41. **Lead aprons** absorb mostly:
    A. Scatter radiation
    B. Primary beam
    C. Electron leakage
    D. Backscatter
42. **Inverse square law** applies to:
    A. Scatter only
    B. All radiation types
    C. Point source radiation
    D. Only X-rays
43. In **barium meal follow through**, the first image is taken at:
    A. 30 minutes
    B. Immediately
    C. 1 hour
    D. 15 minutes
44. **Grid ratio** is defined as:
    A. Height / thickness
    B. Height / distance between strips
    C. Distance / width
    D. Pitch × frequency
45. The **energy of diagnostic X-rays** is typically in the range of:
    A. 5–10 keV
    B. 20–150 keV
    C. 0.5–2 MeV
    D. 1–5 MeV
46. A **retake** is required when:
    A. Exposure index is high
    B. Image is underexposed

C. Histogram shifts
D. Motion blurs image

47. **High SNR** results in:
    A. Grainy image
    B. Sharp and clean image
    C. Pixelation
    D. Increased noise
48. The **"mushroom appearance"** of the bladder on IVU suggests:
    A. Cystitis
    B. Bladder carcinoma
    C. Prostatic enlargement
    D. Trauma
49. The **coil used for spine MRI** is:
    A. Head coil
    B. Knee coil
    C. Body coil
    D. Spine array coil
50. **Dynamic range** in DR refers to:
    A. Speed of image transfer
    B. Ability to capture both very dark and very bright areas
    C. Matrix size
    D. Laser scanner range

Answers – Model Test Paper 10

1.	B	2. C	3. B	4. B	5. B	6. C	7. B	8. C	9. B	10. C
2.	B	12. C	13. B	14. C	15. C	16. B	17. C	18. C	19. A	20. B
3.	A	22. C	23. C	24. B	25. A	26. B	27. C	28. B	29. C	30. C
4.	B	32. B	33. B	34. D	35. B	36. C	37. B	38. A	39. C	40. B
5.	A	42. C	43. B	44. B	45. B	46. D	47. B	48. C	49. D	50. B
