



रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD
सी ई एन - ०३/२०२५ - CEN - 03/2025
Recruitment for Paramedical Categories



RRB PARAMEDICAL 2025

Radiographer X-Ray Technician

Paramedical Categories | CEN 03/2025

ENGLISH ANSWER KEY

Official Answer Key

Complete Paper · Date not recorded

Post	Radiographer X-Ray Technician
Questions	100 per paper
Marking	+1 correct / -1/3 wrong
Duration	90 minutes
Sections	Questions 99

Partly saved: Date not recorded Shift not recorded - 99 of 100 questions (the rest were in no saved sheet).
English: 1 question(s) printed in the stored Telugu version (no keyed English version saved), marked with a ch
Date and shift of this paper were not recorded with the saved sheet; question order follows RRB question IDs.

Every paper is printed from the official question text with the correct answer marked.

HOW TO USE THIS BOOK

- 1 Open the INDEX on the next page.
- 2 Click any row to jump straight to that date and shift.
- 3 The correct option of every question is ticked in green.
- 4 Use the bookmarks panel of your PDF reader to move between shifts.

Check your marks, normalized score and zone-wise rank free at
rank.qmaths.in

Blackbook

Score & Rank Calculator · rank.qmaths.in

Compiled 27 October 2026

INDEX · Click any row to open that paper

RRB Paramedical 2025 - Radiographer X-Ray Technician (English) - 1 paper

PAPER	DATE	TIME	QUESTIONS	PAGE
Paper 1	Date not recorded	Shift not recorded	99	3



रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD
सी ई एन - ०३/२०२५ - CEN - 03/2025
Recruitment for Paramedical Categories



PAPER 1 of 1 · Radiographer X-Ray Technician · English

Exam	RRB Paramedical 2025 (CEN 03/2025)
Post	Radiographer X-Ray Technician
Test Date	Date not recorded
Test Time	Shift not recorded
Language	English
Questions	99 (of 100; 1 not saved)
Marking	+1 correct / -1/3 wrong

Correct option of the official answer key: **green with ✓**. Question IDs are RRB's own.

Section : Questions

Q.1 Refer to the given number series and answer the question that follows (all numbers are single-digit numbers only). Counting to be done from left to right only. (Left) 7 5 2 5 3 6 9 8 2 4 1 7 5 2 8 9 6 3 9 8 7 1 4 5 2 6 3 9 8 7 5 1 2 3 6 9 8 4 (Right) How many such even digits are there which are immediately preceded by an even digit and immediately followed by an odd digit? 2766

Ans

1. 2

2. 3 ✓

3. 4

4. 5

Question ID :
4410091147561
Correct Option : 2

Q.2 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. Only three people sit to the left of D. Only B sits to the right of F. Only three people sit between F and A. C sits at some place to the left of G, but at some place to the right of E. Who sits at the rightmost end? 3679

Ans

1. A

2. B ✓

3. D

4. E

Question ID :
4410091148474
Correct Option : 2

Q.3 Select the pair that follows the same pattern as the one followed by the two pairs given below. Both pairs follow the same pattern. SRP-LKI KJH-DCA 4863

Ans

1. AYV-SRP

2. AYV-TSQ

3. AZX-SSP

4. AZX-TSQ ✓

Question ID :
4410091149658
Correct Option : 4

Q.4 In a certain code language, A+ B means 'A is the son of B' A – B means 'A is the brother of B' A # B means 'A is the daughter of B' A % B means 'A is the mother of B' Based on the above, how is D related to K if 'D-R#T%K'? Ans 1. Brother ✓ 2. Father 3. Husband 4. Son	Question ID : 4410091211004 Correct Option : 1
Q.5 How many Fundamental Duties were originally added to the Indian Constitution in 1976? Ans 1. 10 ✓ 2. 12 3. 8 4. 9	Question ID : 4410091236434 Correct Option : 1
Q.6 2.25 m/s Ans 1. 2.25 m/s 2. 36.0 m/s ✓ 3. 18.0 m/s 4. 45.0 m/s	Question ID : 4410091254592 Correct Option : 2
Q.7 A fuse wire works on the principle of _____ . Ans 1. Chemical effect of current 2. Heating effect of current ✓ 3. Induced current 4. Magnetic effect of current	Question ID : 4410091255252 Correct Option : 2
Q.8 The "Siachen Glacier," the world's highest battlefield, is located to the east of which mountain range? Ans 1. Karakoram Range ✓ 2. Ladakh Range 3. Pir Panjal Range 4. Zaskar Range	Question ID : 4410091476741 Correct Option : 1
Q.9 In a typical brain MRI using the FLAIR sequence, which TI value is most appropriate to suppress the CSF signal at 1.5 Tesla? Ans 1. 120-150 ms 2. 1700-2200 ms ✓ 3. 200-250 ms 4. 3000-4000 ms	Question ID : 4410091553353 Correct Option : 2

Q.10 Which component of a CT scanner is responsible for converting X-ray photons into electrical signals? Ans 1. Collimator 2. Detector ✓ 3. Gantry 4. Table	Question ID : 4410091553658 Correct Option : 2
Q.11 Which factor most directly increases the percentage depth dose in beam therapy? Ans 1. Decreased field size 2. Higher beam energy ✓ 3. Lower patient thickness 4. Shorter source-to-skin distance	Question ID : 4410091557214 Correct Option : 2
Q.12 Evaluate a scenario where a patient with facial asymmetry needs a mould for radiotherapy. What should the radiation team do to ensure effective treatment? Ans 1. Customize the mould to match the patient's unique facial structure. ✓ 2. Select a pre-fabricated mould closest in size. 3. Skip the mould and proceed without it. 4. Use a standard symmetrical mould.	Question ID : 4410091557224 Correct Option : 1
Q.13 Which of the following explains why woody perennial plants can survive for many years, unlike many animal tissues? Ans 1. Ability to generate impulses used for rapid internal communication 2. Formation of storage tissues that accumulate reserve materials 3. Presence of hemoglobin that helps in internal transport processes 4. Presence of meristematic tissues that keep dividing throughout life ✓	Question ID : 4410091557872 Correct Option : 4
Q.14 A magnetic field produced through a solenoid is: Ans 1. Opposite in the direction at the centre 2. Strong only at the ends 3. Uniform inside the coil ✓ 4. Zero throughout the coil	Question ID : 4410091559284 Correct Option : 3
Q.15 Why is a high grid ratio (10:1–12:1) recommended in cranial radiography? Ans 1. Compton interactions cause thick bone to produce more scatter ✓ 2. Low kVp is used in skull radiography 3. Low ratios result in underexposed images 4. Significant quantum noise is produced by the skull	Question ID : 4410091559332 Correct Option : 1

Q.16 For a circular coil carrying a constant current, which of the following does NOT affect the magnitude of the magnetic field at its center? Ans 1. Direction of winding of the coil ✓ 2. Magnetic permeability of the core material 3. Number of turns of the coil 4. Radius of the coil	Question ID : 4410091560246 Correct Option : 1
Q.17 In mammography, which of the following increases the heel effect? Ans 1. Higher kVp 2. Larger Anode angle 3. Smaller Anode angle ✓ 4. Using Rh filter	Question ID : 4410091561335 Correct Option : 3
Q.18 What is the most effective method to reduce scatter during an ICU portable chest radiograph? Ans 1. Decreasing kVp 2. Increasing kVp 3. Increasing mAs 4. Proper collimation to area of interest ✓	Question ID : 4410091561353 Correct Option : 4
Q.19 Which of the following methods is used to reduce Eddy current losses in a transformer core? Ans 1. Increasing frequency 2. Increasing the voltage 3. Laminating the core ✓ 4. Using thicker wire	Question ID : 4410091561636 Correct Option : 3
Q.20 You are creating a protocol to minimize the risk of contrast-induced nephropathy in cardiovascular patients undergoing CT scans. Which combination of actions is most effective? Ans 1. Use high-contrast dose and limit monitoring 2. Use high-contrast dose and restrict fluids 3. Use low-contrast dose and ensure adequate hydration ✓ 4. Use oral contrast only and increase diuretics	Question ID : 4410091561673 Correct Option : 3
Q.21 Which of the following is commonly found on an emergency cart in radiology? Ans 1. Contrast media 2. Defibrillator ✓ 3. Lead aprons 4. X-ray film	Question ID : 4410091561676 Correct Option : 2

Q.22 Which component in a scintillation detector converts light flashes into electrical signals? Ans 1. Battery 2. Oscilloscope 3. Photomultiplier tube ✓ 4. Resistor	Question ID : 4410091563117 Correct Option : 3
Q.23 Which of the following best describes the onset period of early radiation effects? Ans 1. Centuries 2. Decades 3. Minutes to weeks ✓ 4. Years	Question ID : 4410091563126 Correct Option : 3
Q.24 A decubitus chest radiograph is particularly effective for differentiating between: Ans 1. Cardiomegaly and pericardial effusion 2. Pulmonary consolidation and pleural effusion ✓ 3. Pulmonary embolism and pneumonia 4. Rib fracture and soft tissue injury	Question ID : 4410091563573 Correct Option : 2
Q.25 In a laboratory experiment, a student mixes hydrochloric acid and sodium hydroxide. What type of reaction occurs? Ans 1. Decomposition 2. Neutralization ✓ 3. Oxidation 4. Precipitation	Question ID : 4410091564528 Correct Option : 2
Q.26 Which of the following is NOT typically a responsibility of the radiology technologist in special radiographic procedures? Ans 1. Implementing radiation protection measures 2. Interpreting Images and making final diagnosis ✓ 3. Positioning the patient 4. Preparing and handling contrast media	Question ID : 4410091565085 Correct Option : 2
Q.27 In a manufacturing plant, engineers need a lightweight and non-conductive material. Which property of nonmetals would most benefit their selection? Ans 1. High density 2. High luster 3. Malleability 4. Poor electrical conductivity ✓	Question ID : 4410091566047 Correct Option : 4

Q.28 At the 56th International Film Festival of India (IFFI) in November 2025, a special commemorative postal stamp was released to honor the birth centenary of which legendary Goan cinematographer? Ans 1. Baba Naik 2. Kiran Deohans 3. Subrata Mitra 4. Vaikunth Kunkolienkar ✓	Question ID : 4410091566649 Correct Option : 4
Q.29 When visualizing the entire maxillary sinus, including its floor and anterior wall, which PNS projection is the best? Ans 1. Caldwell view 2. Lateral view 3. Submentovertex view (SMV) 4. Waters view ✓	Question ID : 4410091568118 Correct Option : 4
Q.30 For the PA mandible projection, what adjustment minimizes superimposition of the cervical spine over the mandible? Ans 1. Extending the neck ✓ 2. Flexing the neck 3. Rotating the head 4. Tilting the chin downward	Question ID : 4410091568200 Correct Option : 1
Q.31 A hollow cylindrical pipe has an external diameter of 16 cm and an internal diameter of 12 cm. If the length of the pipe is 35 cm, find the total surface area of the pipe. [Use $\pi = 22/7$] Ans 1. 3,256 cm² ✓ 2. 3,268 cm² 3. 3,284 cm² 4. 3,292 cm²	Question ID : 4410091568488 Correct Option : 1
Q.32 On 25 August 2025, the Ministry of Science & Technology launched its first National Biofoundry Network along with a youth-oriented challenge. What is the name of that challenge? Ans 1. BioE3 Challenge for Youth ✓ 2. BioFoundry Youth Quest 3. BioStart Challenge 4. BioYouth Challenge	Question ID : 4410091569442 Correct Option : 1
Q.33 In which state of matter does applying pressure have the least effect on volume? Ans 1. Gas 2. Liquid ✓ 3. Plasma 4. Solid	Question ID : 4410091569579 Correct Option : 2

Q.34 How does daylight film handling improve workflow in computerized radiography? Ans 1. By allowing film loading and unloading in normal lighting ✓ 2. By automating image analysis 3. By eliminating the need for staff training 4. By increasing patient throughput	Question ID : 4410091570251 Correct Option : 1
Q.35 When using a darkroom drier, what safety precaution should be taken to avoid damaging prints? Ans 1. Adjust temperature appropriately ✓ 2. Overlap prints 3. Use excessive heat 4. Use wet prints	Question ID : 4410091570254 Correct Option : 1
Q.36 The minimum number of silver atoms required to form a stable latent image center is determined mainly by: Ans 1. Developer composition 2. Grain size of silver halide 3. Processing temperature 4. Thermodynamic stability of the sensitivity speck ✓	Question ID : 4410091570282 Correct Option : 4
Q.37 Which urban local body is meant for transitional or semi-urban areas? Ans 1. Municipal Corporation 2. Municipal Council 3. Nagar Panchayat ✓ 4. Notified Area Committee	Question ID : 4410091572635 Correct Option : 3
Q.38 If a team wins the Beighton Cup, which of the following sports have they competed in? Ans 1. Cricket 2. Hockey ✓ 3. Kabaddi 4. Volleyball	Question ID : 4410091572964 Correct Option : 2
Q.39 During a lateral projection of the calcaneum, which anatomical landmark should be aligned perpendicular to the image receptor for optimal visualization? Ans 1. Base of the fifth metatarsal 2. Long axis of the calcaneum ✓ 3. Medial cuneiform 4. Plantar surface of the foot	Question ID : 4410091574717 Correct Option : 2

Q.40 In an unconscious patient with trauma to the left upper posterior ribs, which basic radiographic projection (other than the axillary view) best demonstrates the injured area? Ans 1. AP projection ✓ 2. AP projection with the patient in Trendelenburg position 3. Expiratory PA chest projection 4. PA oblique - Erect	Question ID : 4410091574739 Correct Option : 1
Q.41 The Scotty dog sign seen on an oblique projection of the lumbar spine is used to best demonstrate which anatomical structure? Ans 1. Intervertebral disc spaces - T8 to L2 2. Pars interarticularis ✓ 3. Spinous processes 4. Transverse processes	Question ID : 4410091574748 Correct Option : 2
Q.42 What is formed on the radiographic film immediately after exposure to X-rays but before processing? Ans 1. Developed image 2. Latent image ✓ 3. Permanent image 4. Visible image	Question ID : 4410091574846 Correct Option : 2
Q.43 When storing film hangers in a radiography dark room, which method helps prevent contamination and prolong the hangers' life? Ans 1. Hanging them on a dedicated rack ✓ 2. Keeping them in developer solution 3. Leaving them wet on the sink 4. Storing them on the floor	Question ID : 4410091574859 Correct Option : 1
Q.44 For which type of radiation is an Optically Stimulated Luminescence Dosimeter most sensitive? Ans 1. Alpha particles 2. Gamma rays and X-rays ✓ 3. Heavy ions 4. Thermal neutrons only	Question ID : 4410091574943 Correct Option : 2
Q.45 What is the primary purpose of central venography? Ans 1. To assess arterial circulation 2. To diagnose bone fractures 3. To measure blood pressure 4. To visualize central veins ✓	Question ID : 4410091574995 Correct Option : 4

Q.46 The Chalukya Utsava was revived in December 2025 in which of the following historic regions? Ans 1. Ajanta 2. Badami ✓ 3. Ellora 4. Hampi	Question ID : 4410091583066 Correct Option : 2
Q.47 In a partnership, investment of A is 1.5 times of investment of B and investment of B is 3.5 times of investment of C. If all three partners have invested for equal time period, find the ratio of their shares in the profit. Ans 1. 21: 10 : 4 2. 21 : 14 : 3 3. 21 : 14 : 4 ✓ 4. 21 : 7 : 4	Question ID : 4410091583152 Correct Option : 3
Q.48 In the context of the Santhal Rebellion (1855-57), the area of concentration of Santhals was called _____. Ans 1. Bhagalpur Tract 2. Daman-i-Koh ✓ 3. Garo Hills 4. Qaba-ilil- wadiyan	Question ID : 4410091586977 Correct Option : 2
Q.49 When positioning a patient for a supine abdominal radiograph, which anatomical landmark should be centered to the midline of the image receptor? Ans 1. Iliac crests ✓ 2. Pubic symphysis 3. Umbilicus 4. Xiphoid process	Question ID : 4410091588060 Correct Option : 1
Q.50 For an apical lordotic chest projection to visualize lung apices, which Postero-Anterior projection position is best demonstrated? Ans 1. Patient erect/seating with chin raised and shoulders rolled forward ✓ 2. Patient prone with head turned to one side 3. Patient standing with AP positioning and arms by the sides 4. Patient supine with knees bent	Question ID : 4410091588065 Correct Option : 1
Q.51 When performing a CT-guided FNAC on a deeply located lung lesion adjacent to major vessels, which strategy best demonstrates expert-level planning for needle trajectory? Ans 1. Approaching through fissures to minimize lung tissue traversal 2. Choosing the shortest route regardless of the vessel structures crossed 3. Selecting a pathway that avoids traversing vascular structures ✓ 4. Targeting the necrotic center of the lesion for easier aspiration	Question ID : 4410091590334 Correct Option : 3

Q.52 What does FLAIR stand for in MRI imaging? Ans 1. Fast Attenuated Inversion Recovery 2. Fluid Assisted Inverse Radiology 3. Fluid Attenuated Inversion Recovery ✓ 4. Frequency Augmented Imaging Response	Question ID : 4410091592683 Correct Option : 3
Q.53 Which physical property does ultrasound primarily rely on to generate images? Ans 1. Light waves 2. Magnetic fields 3. Sound waves ✓ 4. X-rays	Question ID : 4410091592944 Correct Option : 3
Q.54 Which ultrasound transducer is MOST appropriate for optimal visualization and assessment of the abdominal aorta? Ans 1. Curvilinear low-frequency transducer ✓ 2. Endocavitary transducer 3. Linear high-frequency transducer 4. Phased array transducer	Question ID : 4410091592991 Correct Option : 1
Q.55 Which property of MRI contrast agents is most influenced by dipole-dipole interactions at the molecular level? Ans 1. Their ability to alter relaxation times of nearby water protons ✓ 2. Their ability to reflect ultrasound waves 3. Their capacity to absorb X-rays efficiently 4. Their effect on the scanner's magnetic field strength	Question ID : 4410091595130 Correct Option : 1
Q.56 If the scan delay is too long after contrast injection in a cerebral CT angiogram, what is the likely consequence? Ans 1. Arteries will be adequately opacified 2. Bone artifact will obscure vessels 3. Image noise will increase significantly 4. Venous structures will be more prominent than arteries ✓	Question ID : 4410091595205 Correct Option : 4
Q.57 Which image post-processing technique is primarily used to generate 3D reconstructions from CT datasets? Ans 1. Maximum intensity projection 2. Noise reduction 3. Volume rendering ✓ 4. Windowing	Question ID : 4410091595420 Correct Option : 3

Q.58 A patient requires continuous vital sign monitoring during an MRI scan. Which device should be selected to prevent safety hazards? Ans 1. An MRI-compatible device ✓ 2. Conventional pulse oximeter 3. Regular ECG leads 4. Standard hospital monitor	Question ID : 4410091595480 Correct Option : 1
Q.59 During routine mammographic imaging, which two standard views are most commonly utilized together to ensure thorough visualization of all breast regions, including both central and peripheral tissue? Ans 1. Craniocaudal (CC) and lateromedial (LM) views 2. Craniocaudal (CC) and mediolateral oblique (MLO) views ✓ 3. Lateromedial (LM) and mediolateral (ML) views 4. Mediolateral (ML) and tangential views	Question ID : 4410091597488 Correct Option : 2
Q.60 Which statement best describes the distribution of X-ray intensity across the anode-cathode axis due to the heel effect? Ans 1. X-ray intensity is greater on the anode side and decreases toward the cathode side. 2. X-ray intensity is greater on the cathode side and decreases toward the anode side. ✓ 3. X-ray intensity is unaffected by the anode-cathode orientation. 4. X-ray intensity is uniform across both anode and cathode sides.	Question ID : 4410091602152 Correct Option : 2
Q.61 In the context of indirect fluoroscopy, which parameter is primarily adjusted by the automatic brightness control system to maintain image quality when patient thickness increases? Ans 1. Exposure time 2. Grid ratio 3. Input phosphor sensitivity 4. Tube current (mA) ✓	Question ID : 4410091602259 Correct Option : 4
Q.62 Which of the following best describes a portable X-ray unit? Ans 1. It can be easily moved to a patient's location. ✓ 2. It is permanently installed in one room. 3. It is used only for dental X-rays. 4. It requires a dedicated imaging suite.	Question ID : 4410091603328 Correct Option : 1
Q.63 What role do the bearings at each end of the anode axle play in metal ceramic X-ray tubes? Ans 1. They decrease tube life. 2. They increase electrical insulation. 3. They provide greater stability and reduce stress on the shaft. ✓ 4. They support high-voltage cables.	Question ID : 4410091603477 Correct Option : 3

Q.64 When designing a high-tension cable for an X-ray generator, which insulation property is most critical for maintaining performance over time? Ans 1. High dielectric strength ✓ 2. High tensile strength 3. Low cost 4. Low thermal conductivity	Question ID : 4410091603558 Correct Option : 1
Q.65 A QA supervisor finds that the half-value layer (HVL) of a conventional radiographic unit is below the recommended standard during annual testing. What is the most significant clinical consequence if this issue is not promptly corrected? Ans 1. Images become noticeably sharper due to enhanced contrast. 2. Patients are exposed to higher levels of low-energy radiation, increasing tissue dose without diagnostic benefit. ✓ 3. Radiographic equipment malfunctions more frequently. 4. There is less need for using additional protective shielding.	Question ID : 4410091606619 Correct Option : 2
Q.66 During the process of radiolysis, which species is most likely to react with another water molecule to produce a hydronium ion (H_3O^+)? Ans 1. Hydrogen atom (H) 2. Hydrogen peroxide (H_2O_2) 3. Hydroxyl radical (OH) 4. Water radical cations (H_2O^+) ✓	Question ID : 4410091606817 Correct Option : 4
Q.67 Which recent advancement in cardiac CT technology primarily helps to reduce motion artifacts during coronary imaging? Ans 1. Beam-hardening correction algorithms 2. Calcium scoring 3. Iterative reconstruction 4. SnapShot Freeze ✓	Question ID : 4410091612652 Correct Option : 4
Q.68 Which area in a CT room is specifically designated to protect staff from radiation during scanning procedures? Ans 1. Control console area ✓ 2. Equipment storage area 3. Patient waiting area 4. Technical room	Question ID : 4410091612687 Correct Option : 1
Q.69 Which action most directly ensures that radiation protection equipment is safe and ready for use during radiographic apparatus preparation? Ans 1. Adjusting the table height for patient comfort 2. Checking lead aprons for cleanliness and integrity ✓ 3. Confirming the availability of positioning 4. Selecting the appropriate size of image receptor	Question ID : 4410091615956 Correct Option : 2

Q.70 A radiographer is asked to perform a mobile abdominal X-ray for a confused elderly patient in the ward. Which approach best balances patient safety and image quality in this scenario? Ans 1. Apply physical restraints without additional support 2. Attempt to perform the X-ray alone without assistance 3. Delay the X-ray until the patient is less confused 4. Involve a nurse to help reassure and gently immobilize the patient during exposure ✓	Question ID : 4410091615984 Correct Option : 4
Q.71 A patient presents after blunt orbital trauma. The radiologist requests a projection that best demonstrates the orbital floors and infraorbital rim for suspected blowout fracture. Which projection should the technologist select to optimally visualize these structures? Ans 1. Caldwell (PA Axial) projection 2. Lateral projection 3. Modified Waters (Parietoacanthial) projection ✓ 4. Submentovertex (SMV) projection	Question ID : 4410091616013 Correct Option : 3
Q.72 Which MRI contrast agent is most likely to induce significant magnetic susceptibility artifacts in tissues? Ans 1. Gadolinium-based agents 2. Manganese chelates 3. Perfluorocarbon emulsions 4. Superparamagnetic iron oxides ✓	Question ID : 4410091618320 Correct Option : 4
Q.73 A Doppler ultrasound examination shows an aliasing artifact when measuring high velocities in a vessel. Which adjustment will most effectively minimize this artifact without losing diagnostic information? Ans 1. Decrease the angle of insonation 2. Increase the Pulse Repetition Frequency ✓ 3. Set the colour scale to minimum velocity 4. Use a lower frequency transducer	Question ID : 4410091619473 Correct Option : 2
Q.74 Which patient preparation step is most critical to optimize visualization of the distended gallbladder during an abdominal ultrasound scan? Ans 1. Administering a fatty meal before the scan 2. Drinking water just before the scan 3. Fasting for at least 6 hours prior to the scan ✓ 4. Having a full bladder during the scan	Question ID : 4410091619477 Correct Option : 3
Q.75 Which transducer frequency range is most appropriate for high-resolution sonographic assessment of superficial musculoskeletal tendons in the extremities? Ans 1. 12–17 MHz linear array ✓ 2. 3.5 MHz curvilinear probe 3. 5–7 MHz linear array 4. 7.5 MHz convex probe	Question ID : 4410091619482 Correct Option : 1

Q.76 Which of the following best describes the patient's position for a lateral sacrum radiograph? Ans 1. Patient lying on either side with knees and hips slightly flexed and iliac crests at right-angles to the image receptor ✓ 2. Patient lying prone with arms by the side and legs extended and iliac crests at parallel to the image receptor 3. Patient lying supine with legs straight and arms at sides 4. Patient sitting upright with arms folded and legs extended with iliac crests at right-angles to the image receptor	Question ID : 4410091635679 Correct Option : 1
Q.77 During processing of intraoral films, the films were transferred directly from the developer to the fixer, resulting in uneven images with residual developer stains. Which processing step was omitted in the film processing sequence? Ans 1. Drying, which prepares the film for viewing 2. Fixing, which hardens the emulsion and halts development 3. Rinsing, which removes excess developer and prevents chemical carryover ✓ 4. Washing, which removes all processing chemicals after fixing	Question ID : 4410091640819 Correct Option : 3
Q.78 In an intensifying screen used in radiography, which layer is responsible for producing visible light when struck by X-rays? Ans 1. Base layer 2. Phosphor layer ✓ 3. Protective coat 4. Reflective layer	Question ID : 4410091640895 Correct Option : 2
Q.79 The radiographer must select the most suitable film-screen combination, given the need to reduce patient exposure without sacrificing image detail. Which factor is most critical in matching the film to the intensifying screen? Ans 1. Ensuring the presence of antihalation dyes in the film 2. Selecting the highest-speed film regardless of screen type 3. Spectral matching between the screen and film ✓ 4. Using the highest-contrast film available	Question ID : 4410091640983 Correct Option : 3
Q.80 Crop rotation helps in controlling _____ by changing the type of crops grown in a pre-planned succession. Ans 1. excess rainfall 2. over-irrigation 3. sunlight exposure 4. weeds and pests ✓	Question ID : 4410091695873 Correct Option : 4
Q.81 If a plant is kept in an environment without sunlight but provided with carbon dioxide and water, what would happen to its starch reserves over time? Ans 1. They would decrease as the plant uses stored energy ✓ 2. They would increase due to excess water 3. They would rapidly convert into glycogen 4. They would remain unchanged	Question ID : 4410091695966 Correct Option : 1

Q.82 During CT multiplanar reconstruction, the slice thickness is 5 mm. The software generates sagittal and coronal planes by estimating intermediate pixel values. Which Image processing technique is used? Ans 1. Edge detection 2. Fourier reconstruction 3. Interpolation ✓ 4. Thresholding	Question ID : 4410091696804 Correct Option : 3
Q.83 A superficial tumor at 2 cm depth is treated using 6 MV photons and 9 MeV electrons. Which beam provides a higher percent depth dose (PDD) at 2 cm? Ans 1. 6 MV photons 2. 9 MeV electrons ✓ 3. Both deliver the same dose 4. Cannot be determined without SSD	Question ID : 4410091696829 Correct Option : 2
Q.84 Which of the following best describes the physical meaning of capacitance for a given capacitor? Ans 1. It is the capacitor's energy storage capacity per unit charge. 2. It is the maximum current the capacitor can safely carry without damage. 3. It is the ratio between the charge and its potential. ✓ 4. It is the total number of electrons on the negatively charged plate.	Question ID : 4410091696837 Correct Option : 3
Q.85 Which of the following parameters does the Automatic Brightness Control (ABC) system primarily adjust in indirect fluoroscopy to maintain a constant image brightness? Ans 1. Collimator size and exposure time 2. Frame rate and detector gain 3. kVp and mA based on image intensifier output ✓ 4. Source-to-image distance and patient thickness	Question ID : 4410091697363 Correct Option : 3
Q.86 A chest X-ray is performed on a patient. At low energy levels, which material absorbs X-ray photons the most effectively? Ans 1. Air ($Z \approx 7.6$) 2. Bone ($Z \approx 13.8$) ✓ 3. Soft tissue ($Z \approx 7.4$) 4. Water ($Z \approx 7.4$)	Question ID : 4410091697449 Correct Option : 2
Q.87 In a hospital corridor, an alone radiographer finds an adult patient who is unresponsive and has no pulse. According to the AHA's "Chain of Survival," which of the following represents the correct sequence? Ans 1. Activate emergency response → Compressions → AED ✓ 2. AED → Compressions → Call EMS 3. Compressions → Activate emergency response → AED 4. Rescue breaths → Compressions → Call EMS	Question ID : 4410091700363 Correct Option : 1

Q.88 The energy resolution of a semiconductor detector is higher than that of a scintillation detector. Why is the energy resolution of scintillation detectors limited? Ans 1. Crystal thickness 2. High noise in PMT 3. Radiation scatter 4. Statistical variation in light production ✓	Question ID : 4410091702186 Correct Option : 4
Q.89 Central venography is performed via an upper-limb approach on a patient with suspected superior vena cava (SVC) obstruction. To opacify the SVC, which vein is MOST commonly cannulated? Ans 1. Antecubital vein ✓ 2. Basilic vein 3. Cephalic vein 4. Radial vein	Question ID : 4410091702702 Correct Option : 1
Q.90 A patient undergoing contrast-enhanced CT develops minimal warmth and nausea during injection. The contrast used was non-ionic. Why are such reactions generally milder than ionic contrast reactions? Ans 1. Non-ionic agents absorb more X-rays 2. Non-ionic agents are radiolucent 3. Non-ionic agents do not dissociate in solution ✓ 4. Non-ionic agents have higher viscosity	Question ID : 4410091702793 Correct Option : 3
Q.91 After processing, a radiographer observes that the film curls considerably despite correct chemistry and exposure. Which film component MOST directly maintains dimensional stability to prevent this? Ans 1. Adhesive subbing layer 2. Emulsion layer 3. Film base ✓ 4. Protective overcoat	Question ID : 4410091708267 Correct Option : 3
Q.92 Following X-ray exposure, electrons are released within the silver bromide crystal and trapped at specific locations. Where is the latent image primarily formed? Ans 1. Emulsion surface 2. Film base 3. Gelatin matrix 4. Sensitivity specks on silver halide crystals ✓	Question ID : 4410091708272 Correct Option : 4
Q.93 Under COSHH guidelines, which of the following is a key safety measure for handling chemicals in the radiology darkroom? Ans 1. Keeping chemicals in unlabelled bottles 2. Mixing all chemicals in one open container 3. Storing chemicals at high temperatures 4. Using proper ventilation or exhaust systems ✓	Question ID : 441009191928 Correct Option : 4

Q.94 When was the Pradhan Mantri Gram Sadak Yojana launched with the objective of providing rural connectivity? Ans 1. 2000 ✓ 2. 2001 3. 2002 4. 2004	Question ID : 441009247981 Correct Option : 1
Q.95 9, 6 మరియు 12 లచే భాగించినప్పుడు ప్రతి సందర్భంలో 5 ని శేషంగా ఇచ్చే అతిపెద్ద నాలుగు అంకెల సంఖ్య: TELUGU Ans 1. 9642 2. 9977 ✓ 3. 9991 4. 9998	Question ID : 441009525165 Correct Option : 2
Q.96 The ratio of the cost price to the marked price of an article is 3 : 5. A discount of 25% is given on the marked price. If the shopkeeper makes a profit of ₹150, find the cost price (in ₹) of the article. Ans 1. 570 2. 580 3. 590 4. 600 ✓	Question ID : 441009577070 Correct Option : 4
Q.97 If 3 is added to each odd digit and 1 is subtracted from each even digit in the number 1256438, what will be the difference between the highest and lowest digits in the number thus formed? Ans 1. 4 2. 5 3. 6 4. 7 ✓	Question ID : 441009861632 Correct Option : 4
Q.98 In covering 90 km, R takes 4 hours more than S. If R triples his speed, then he would take 2 hours less than S. What is R's original speed (in km/h)? 7087 Ans 1. 10 ✓ 2. 6 3. 8 4. 9	Question ID : 441009900400 Correct Option : 1
Q.99 Approximately what percent of the area of India is occupied by plains? Ans 1. 27% 2. 30% 3. 43% ✓ 4. 50%	Question ID : 441009933204 Correct Option : 3