

**SYLLABUS FOR THE POST OF JUNIOR TECHNICIAN(X-RAY), T&S GRADE - D  
(INTERNAL)**

**Internal Circular No. CRP/PER/R/2026/309, Dt. 30.05.2026**

**PART-I (Subject)**

**1. UNIT – I : HUMAN ANATOMY**

Human Anatomy, Physiology and Pathology • Cardiovascular System • Respiratory System • Digestive System • Urinary System • Reproductive System • Musculoskeletal System • Nervous System • Ear, Nose, Throat and Eye • Endocrine System • Haemopoietic and Lymphatic System • Surface Anatomy • Pathology of Major Systems

**2. UNIT – II : CONVENTIONAL AND AUTOMATED PROCESSING TECHNIQUES**

Dark Room • X-Ray Films • Intensifying Screens • X-Ray Cassettes • Manual Processing • Automatic Processing • Developer • Fixer • Film Faults

**3. UNIT – III : RADIOLOGICAL PHYSICS**

Radiation Detection and Measurement • Gas Filled Detectors • Scintillation Detectors • Thermoluminescent Dosimeters (TLD) • Biological Effects of Radiation

**4. UNIT – IV : MEDICAL PHYSICS**

Mains Supply • Diagnostic High Tension Circuits • Tube Voltage Control • Tube Current Control • Meters • Exposure Timers • Exposure Switching • Interlocking Circuits • Circuit Diagrams

**5. UNIT – V : X-RAY TUBES AND EQUIPMENTS**

X-Ray Tubes • Fluoroscopy • Image Intensifiers • Fluorography • Cine-Fluorography • Radiographic and Fluoroscopic Tables

**6. UNIT – VI : REGIONAL RADIOGRAPHY**

Patient Positioning • Upper Limb • Lower Limb • Shoulder Girdle and Thorax • Pelvic Girdle and Hip Region • Vertebral Column • Skull and Facial Bones • Nasal Sinuses • Teeth • Chest • Abdomen

**7. UNIT – VII : RADIOGRAPHIC TECHNIQUES (ADVANCED)**

Gastrointestinal Radiography • Urology • Reproductive System • Vascular Procedures • CNS Procedures

**8. UNIT – VIII : RECENT ADVANCES IN RADIOLOGY**

Arthrography • Sialography • Sinography • Fistulography • Zeropradiography • High Kilo Voltage Technique

## **9. UNIT – IX : CONTRAST MEDIA**

Ionic Monomers • Nonionic Monomers • Ionic Dimmers • Nonionic Dimmers  
• Adverse Reactions • Complications • Choice of Contrast Medium • High and Low Osmolar Contrast Media • Contrast Media in Renal Tract, Nervous System and Cardiovascular System • Prevention of Adverse Reactions

## **10. UNIT – X : RADIATION HAZARDS, PREVENTIVE MAINTENANCE AND QUALITY CONTROL**

Radiation Hazards and Protection • Radiation Doses • Protective Gadgets • Radiation Safety • Preventive Maintenance • General Care • Log Book Maintenance • HT Cables • Tube Stands • Functional Tests • Troubleshooting • Quality Control • QC Equipment Requirements • QC Protocols • Imaging Quality Control

## **PART-II (General Studies)**

1. General Knowledge
2. General English
3. Quantitative Aptitude & Numerical Ability
4. Test of Reasoning
5. Computer Basics