

# **RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER**

## **SYLLABUS OF COMPETITIVE EXAMINATION FOR THE POST OF ASSISTANT PROFESSOR (Super Speciality) ORTHO SPINE MEDICAL EDUCATION DEPARTMENT**

### **1. Basic & Applied Sciences**

- Anatomy
- Physical Examination
- Examination of Back Pain
- Radiologic Imaging of the Spine
- Diagnostic Evaluations
- General Considerations for Spine Surgery Including Consent and Preparation. General Surgical Principles, Guidelines for Informed Consent, Patient Positioning for Surgery, Equipment Needed, and Postoperative Considerations
- Surgical Approaches
- Surgical instruments and implants
- Bone Graft and Bone Substitute Biology
- Neurological Monitoring in Spine Surgery
- Basic Pedicle Screw and Construct Biomechanics

### **2. Spinal disorders**

- Cervical -Evaluation of Axial Neck Pain.
- Nonoperative Treatment, chronic pain management
- Spinal disorders- Cervical disc disease and cervical spondylosis, Cervical ossification of the posterior Longitudinal ligament, lumbar disc disease, Postoperative intervertebral disc space infections. Lumbar spondylolisthesis, Posterolateral lumbar spinal fusion, The failed back surgery syndrome
- Scoliosis
- Adult Spinal Deformity
- Dysplastic and Congenital Deformities
- Spinal Dysraphism—Embryology, Pathology, and Treatment
- Thoracic Insufficiency Syndrome
- Congenital Anomalies of the Cervical Spine in Children
- Paralytic and Neuromuscular Scoliosis
- Kyphosis and Post laminectomy Deformities
- Ankylosing Spondylitis/Thoracolumbar Deformities
- Spinal trauma – cervical, thoracic and lumbar

- Tumors (cervical, thoracic, Lumbar and sacral)
- Cerebrospinal Fluid Fistula and Pseudomeningocele
- Degenerative/rheumatic disorders and deformities
- Infective conditions inflicting spine including tuberculosis and osteomyelitis

### **3. Operative techniques**

#### **General techniques**

- Anesthesia and positioning
- Surgical technique
- Postoperative management
- Techniques for Dural Repair
- ALIF, TLIF, PLIF, PSF
- Motion-Preserving Techniques
- Motion-Preservation Techniques (Other Than Disc Arthroplasty)
- Transforaminal Lumbar Interbody Fusion/Posterior Lumbar Interbody Fusion
- Revision laminectomy
- Sacro-Pelvic Morphology, Spino-Pelvic Alignment, and Spinal Deformity Study Group
- Reconstruction of Complex Spinal Wounds
- Vascular Complications
- Postoperative Early and Late Wound/Implant Infections

#### **Cervical Spine**

- Closed Cervical Skeletal Tong Placement and Reduction Techniques
- Halo Placement in the Pediatric and Adult Patient
- Anterior Odontoid Resection: The Transoral Approach
- Odontoid Screw Fixation
- Anterior C1-C2 Arthrodesis: Lateral Approach of Barbour and Whitesides
- Anterior Cervical Corpectomy/Discectomy
- Anterior Resection of Ossification of the Posterior Longitudinal Ligament
- Anterior Cervical Disk Arthroplasty
- Occipital-Cervical Fusion
- C2 Translaminar Screw Fixation
- Posterior C1-C2 Fusion: Harms and Magerl Techniques
- Lateral Mass Screw Fixation
- Cervical Pedicle Screw Fixation
- Posterior Cervical Osteotomy Techniques
- Posterior Cervical Laminoplasty

## **Thoracic Spine**

- Anterior Thoracic Discectomy and Corpectomy
- Anterior Thoracolumbar Spinal Fusion via Open Approach for Idiopathic Scoliosis
- Operative Management of Scheuermann's Kyphosis
- Resection of Intradural Intramedullary or Extramedullary Spinal Tumors
- Endoscopic Thoracic Discectomy
- VEPTR Opening Wedge Thoracostomy for Congenital Spinal Deformities
- Posterior Thoracolumbar Fusion Techniques for Adolescent Idiopathic Scoliosis
- Thoracoplasty for Rib Deformity
- Complete Vertebral Resection for Primary Spinal Tumors

## **Lumbar Spine**

- Sacropelvic Fixation
- Posterior Disk Herniation
- The Lateral Extracavitary Approach for Vertebroectomy
- Osteotomy Techniques (Smith-Petersen and Pedicle Subtraction) for Fixed Sagittal

## **Imbalance**

- Spondylolysis Repair
- Surgical Treatment of High-Grade Spondylolisthesis
- Interspinous Process Motion-Sparing Implant
- Anterior Lumbar Interbody Fusion
- Transforaminal Lumbar Interbody Fusion
- Transpoas Approach for Thoracolumbar Interbody Fusion
- Lumbar Total Disk Arthroplasty
- Kyphoplasty
- Minimally Invasive Exposure Techniques of the Lumbar Spine
- Hemivertebrae Resection
- Lumbar Internal Laminectomy
- Minimally Invasive Presacral Retroperitoneal Approach for Lumbosacral Axial Instrumentation

## **4. Recent advances**

- Spinal Cord and Nerve Root Monitoring
- Bone Grafting and Spine Fusion Computed tomography (CT)-based navigation
- Fluoroscopy-based navigation
- Fluoroscopic 3-D navigation
- Dynamic stabilization system (Dynesys) versus rigid fixators
- Interspinous implants (X-Stop, Coflex, Wallis, Diam)

- Total posterior-element replacement system (TOPS)
- Total disc prostheses
- Prosthetic disc nucleus (PDN)
- Tissue engineered collagen matrix nucleus replacement Biostatistics, Research Methodology and Clinical Epidemiology
- Minimally invasive spine surgery
- Robotic spine surgery
- Interspinous devices

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**Pattern of Question Papers:**

- 1. Objective Type Paper**
- 2. Maximum Marks: 150**
- 3. Number of Questions: 150**
- 4. Duration of Paper : 2.30 Hours**
- 5. All Questions carry equal marks**
- 6. There will be Negative Marking**  
(For every wrong answer one-third of the marks prescribed for that Particular question shall be deducted.)

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