

**Syllabus for the post of  
Assistant Professor, Orthopaedics, Class-I (Advt. No. 83/2023-24)**

**Marks – 200**

**Questions – 200**

**Medium - English**

**1. Basic Sciences**

- Anatomy and function of joints,
- Bone structure and function,
- Growth factors and fracture healing,
- Cartilage structure and function,
- Structure and function of muscles and tendons,
- Tendon structure and function,
- Metallurgy in Orthopaedics,
- Stem Cells in Orthopaedic Surgery,
- Gene Therapy in Orthopaedics.

**2. Diagnostic Imaging in Orthopaedics**

(Should know the interpretation and Clinical Correlation of the following):

- Digital Subtraction Angiography (DSA),
- MRI and CT in Orthopaedics, Musculoskeletal USG,
- PET scan, and Radio-isotope bone scan.

**3. Metabolic Bone Diseases**

- Rickets and Osteomalacia,
- Osteoporosis, Scurvy,
- Mucopolysaccharoidoses, Fluorosis,
- Osteopetrosis.

**4. Endocrine Disorders**

Hyperparathyroidism, Gigantism, Acromegaly.

**5. Bone and Joint Infections**

Pyogenic Haematogenous Osteomyelitis - Acute and Chronic, Septic arthritis, Fungal infections, Miscellaneous infections, Gonococcal

arthritis, Bone and joint brucellosis, AIDS and the Orthopaedic Surgeon (universal precautions), Musculoskeletal Manifestations of AIDS, Pott's spine, Tubercular synovitis and arthritis of all major joints.

## **6. Poliomyelitis**

- General considerations,
- Polio Lower limb and spine,
- Management of Post-Polio Residual Palsy (PPRP).

## **7. Orthopaedic Neurology**

Cerebral Palsy, Myopathies.

## **8. Peripheral Nerve Injuries**

Traumatic, Entrapment Neuropathies.

## **9. Diseases of Joints**

Osteoarthritis, Calcium Pyrophosphate Dihydrate (CPPD), Gout  
Collagen diseases.

## **10. Systemic Complications in Orthopaedics**

Shock, Crush syndrome, Disseminated Intravascular Coagulation (DIC),  
Acute Respiratory Distress Syndrome (ARDS).

## **11. Bone Tumors**

Benign bone tumors, malignant bone tumors, Tumor like conditions,  
Metastatic bone Tumors.

## **12. Miscellaneous Diseases**

Diseases of muscles, Fibrous Dysplasia, Unclassified diseases of bone,  
Paget's disease, Peripheral vascular disease, Orthopaedic  
manifestations of bleeding disorders.

### **13. Regional Orthopaedic Conditions of Adults and Children**

The spine, the shoulder, the elbow, the hand, the wrist, the hip, the knee, the foot and ankle, the pelvis.

### **14. Biomaterials**

Orthopaedic metallurgy, Bio-degradable implants in Orthopaedics, Bone substitutes, Bone Banking.

### **15. Fracture and Fracture-Dislocations**

General considerations

Definitions, types, grades, patterns and complications, Pathology of fractures and fracture healing, Clinical and Radiological features of fractures and dislocations, General principles of fracture treatment, Recent advances in internal fixation of fractures, Locking plate osteosyntheses, Less Invasive Stabilisation System (LISS), Ilizarov technique, Bone grafting and bone graft substitutes, Open fractures and soft tissue coverage in the lower extremity, Compartment syndrome, Fractures of the upper extremity and shoulder girdle, Fractures of the lower extremity, Fractures of the hip and pelvis, Malunited fractures, Delayed union and non-union of fractures, Fractures/dislocations and fracture - dislocations of spine.

### **16. Dislocations and Subluxations**

Acute dislocations, Old unreduced dislocations, recurrent dislocations.

### **17. Traumatic Disorders of Joints (Sports Injuries)**

Ankle injuries, Knee injuries, Shoulder and elbow injuries, Wrist and hand injuries.

### **18. Arthrodesis**

Arthrodesis of lower extremity and hip, Arthrodesis of upper extremity, Arthrodesis of spine.

**19. Arthroplasty**

Biomechanics of joints and replacement of the following joints, Knee, Ankle, Shoulder, Elbow.

**20. Minimally Invasive Surgery (MIS)**

**Arthroscopy:** General principles of Arthroscopy, Arthroscopy of knee and ankle, Arthroscopy of shoulder and elbow.

**21. Amputations and Disarticulations**

Amputations and disarticulations in the lower limb and in the upper limb.

**22. Rehabilitation - Prosthetics and Orthotics**

**23. Pediatric Orthopaedics:**

Fractures and dislocations in children, Perthes' disease, Slipped capital femoral epiphysis, Congenital Dislocation of Hip (CDH), neuromuscular disorders.

**24. Spine**

Spinal trauma, Degenerative disorders of the spine.

**25. Triage, Disaster Management, BTLS and ATLS**

**26. RESEARCH METHODOLOGY.**

**27. MEDICO LEGAL ASPECTS RELEVANT TO THE DISCIPLINE.**

**28. INDIAN MEDICAL COUNCIL (PROFESSIONAL CONDUCT, ETIQUETTE AND ETHICS) REGULATIONS, 2002.**

**29. CURRENT TRENDS AND RECENT ADVANCEMENTS IN THE FIELD OF ORTHOPAEDICS.**