

Syllabus for PhD entrance Examination: ORTHOPAEDICS

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

(Interpretation and Clinical Correlation of the following): -

- Digital Subtraction Angiography (DSA)
- MRI and CT in Orthopaedics
- Musculoskeletal USG
- PET Scan
- 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, Gout, Collagen diseases

10. Bone Tumors

- Benign bone tumors, Malignant bone tumors, Tumor like conditions, Metastatic bone Tumors

11. Biomaterials

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

12. Fracture and Fracture-Dislocations

- 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
- Ilizarov technique
- 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

13. Traumatic Disorders of Joints (Sports Injuries)

- Ankle injuries
- Knee injuries
- Shoulder and elbow injuries
- Wrist and hand injuries

14. Arthrodesis

- Arthrodesis of lower extremity and hip
- Arthrodesis of upper extremity
- Arthrodesis of spine

15. Minimally Invasive Surgery (MIS)

Arthroscopy

- General principles of Arthroscopy, Arthroscopy of knee and ankle, Arthroscopy of shoulder and elbow

16. Rehabilitation - Prosthetics and Orthotics

17. Spine

- a) Spinaltrauma: diagnosis and management including various types of fixations
 - i. Rehabilitation of paraplegics/quadruplegics
 - ii. Management of a paralyzed bladder
 - iii. Prevention of bed sores and management of established bed sores
- b) Degenerative disorders of the spine
 - i. Prolapsed Inter Vertebral Disc (PIVD)
 - ii. Lumbar Canal Stenosis (LCS)
 - iii. Spondylolysis/Spondylolisthesis
 - iv. Lumbar Spondylosis
 - v. Ankylosing Spondylitis
 - vi. Spinal fusion: various types and their indications.

18. 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



PEOPLE'S University
UNIVERSITY

PEOPLE'S UNIVERSITY

(Established by MP Act No. 18 of 2011 & approved u/s 2 (f) of UGC Act 1956)

NAAC accredited

ISO 9001:2015 certified
