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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MS (ORTHOPAEDICS) DEGREE EXAMINATION – JANUARY 2025**  
**(REGULAR)**  
**PAPER I**

Tuesday, January 14, 2025

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1. Describe the gait cycle. Explain about Trendelenburg gait. Write a brief note on gait lab  
(8+4+3 = 15 marks)
2. Define osteoporosis. What are the causes of osteoporosis? How do you evaluate a patient with osteoporosis and describe the various treatment options available?  
(2+3+10 = 15 marks)
3. **Write a short Essay on:**
  - 3A. Biomechanics of Knee.
  - 3B. Calcium Metabolism.
  - 3C. Articular cartilage
  - 3D. Distraction histogenesis
  - 3E. Pin tract infection classification and management.
  - 3F. Discuss the etiopathology, diagnosis, prophylaxis and treatment of deep vein thrombosis.
  - 3G. Describe "JAIPUR FOOT". Discuss the difference with 'SACH FOOT' & MADRAS FOOT".
  - 3H. Describe free vascularized bone transplant. Discuss the principles of the technique and their applications
  - 3I. Stages of lumbar intervertebral disc prolapse
  - 3J. Histopathological types of osteosarcoma & their prognosis

(7 marks × 10 = 70 marks)



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**PAPER II**

Wednesday, January 15, 2025

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

 **Answer ALL the questions.**

 **Long Essays:**

1. Describe the blood supply of femoral head. Enlist various causes for non-union fracture neck of femur. Classify it based on Sandhu's classification? List the various muscle pedicle grafts described for treatment of this condition.

(4+3+4+4 = 15 marks)

2. What is reconstructive ladder for open fractures? What is negative wound therapy? What is fix & close protocol in open fractures?

(5+5+5 = 15 marks)

3. **Write short Essay on:**

- 3A. Supination external rotation injuries in ankle
- 3B. Fat embolism syndrome.
- 3C. Classifications of tibia plateau fractures.
- 3D. Radiological parameters in identifying acetabular fractures.
- 3E. Side swipe injuries of elbow.
- 3F. Massive transfusion protocol.
- 3G. Residual Limb.
- 3H. DCP Versus LCP.
- 3I. Rehabilitation for quadriplegics.
- 3J. Thoracolumbar burst fractures.

(7 marks × 10 = 70 marks)



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**PAPER III**

Thursday, January 16, 2025

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

**Answer All Questions:**

**Long Essays:**

1. Write a note on stabilizers of shoulder joint. Describe the various clinical tests for evaluating rotator cuff pathologies. Mention different portals used in shoulder arthroscopy.  
(4+8+3 = 15 marks).
2. What is spondylolisthesis? Mention the classification, radiological features and management of isthmic spondylolisthesis?  
(3+4+4+4 = 15 marks)
3. **Write short essay on:**
  - 3A. Renal osteodystrophy  
(7 marks)
  - 3B. Surgical management for radial nerve palsy  
(7 marks)
  - 3C. Gross Motor Function Classification System of Cerebral Palsy.  
(7 marks)
  - 3D. Intrinsic minus hand.  
(7 marks)
  - 3E. Describe any five radiological features of developmental dysplasia of hip (DDH)? Role of arthrogram in DDH.  
(5+2 = 7 marks)
  - 3F. Write a note on arches of foot? Role of arthroereisis in pes planus.  
(3+4 = 7 marks)
  - 3G. Mention different types of periosteal reaction in bone tumours. List giant cell variants.  
(4+3 = 7 marks)
  - 3H. What are the clinical features of bone cement implantation syndrome? What are the precautions to prevent this condition?  
(3+4 = 7 marks)
  - 3I. Chondromalacia Patellae  
(7 marks)
  - 3J. Unicompartmental Knee Arthroplasty  
(7 marks)



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**PAPER IV**

Friday, January 17, 2025

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

 **Answer ALL the questions.**

 **Long Essays:**

1. Discuss femuro-acetabular impingement. What are the indications for hip arthroscopy? Write a note on portals in hip arthroscopy.

(7+4+4 = 15 marks)

2. Discuss the evaluation and management of cartilage defects in the knee joint.

(15 marks)

3. **Write short essay on:**

- 3A. Balloon kyphoplasty
- 3B. Surface treatment and coating of arthroplasty implants
- 3C. Tenosynovial giant cell tumours
- 3D. Robotic assisted TKA
- 3E. Autologous chondrocyte transplantation
- 3F. Denosumab
- 3G. THR in dysplastic hips
- 3H. Chronic ankle instability
- 3I. Hemi hamate arthroplasty
- 3J. Limb salvage techniques in malignant bone tumours

(7 marks × 10 = 70 marks)

