

पाटन स्वास्थ्य विज्ञान प्रतिष्ठान सेवाआयोग
प्राज्ञिक सेवा, हाड जोर्नी रोग समूह, **Oncology** उपसमूह, सहायक-प्राध्यापक पद, नवौं (९ ख) तहको
खुला र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम

Paper II: Technical Subject

Section (A) - 45 Marks

1. **General principles of tumor**
 - 1.1. Introduction
 - 1.2. Pathophysiology of sarcoma
 - 1.3. Sarcoma versus carcinoma
 - 1.4. Clinical features
 - 1.5. Diagnostic modality
 - 1.6. Principle of treatment
2. **Cellular and molecular biology**
 - 2.1 Cell differentiation and cell cycle
 - 2.2 General theory of carcinogenesis
 - 2.3 Suppressor Genes
 - 2.4 Growth factors
 - 2.5 Metastasis
3. **General approach to musculoskeletal neoplasm**
 - 3.1 Introduction
 - 3.2 Pathophysiology of sarcoma
 - 3.3 Presentation
 - 3.4 Diagnosis and investigation
 - 3.5 Principle of treatment
4. **Diagnostic strategies and imaging**
 - 4.1. Clinical history and examination
 - 4.2. Hematological and biochemical investigation
 - 4.3. Biopsy and immunohistochemistry
 - 4.4. Histopathology
 - 4.5. Imaging
 - 4.5.1.1. X-ray
 - 4.5.1.2. Ultrasonography
 - 4.5.1.3. MRI
 - 4.5.1.4. Bone scan
 - 4.5.1.5. PET scan
 - 4.5.1.6. CT scan
5. **Staging System**
 - 5.1. Enneking (MSTS- musculoskeletal tumor society)
 - 5.2. FNLCC staging for soft tissue sarcoma(French)
 - 5.3. AJCC(American joint committee of cancer)
6. **General Principles of medical and radiation treatment**
 - 6.1. Principles
 - 6.2. Mechanism of action
 - 6.3. Role musculoskeletal oncology
 - 6.4. Common complications and management

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7. **Biopsy**
 - 7.1. Types of biopsy
 - 7.2. Principle of biopsy
 - 7.3. Technique of biopsy
8. **Surgical margin**
 - 8.1. Enneking surgical margin
 - 8.2. RO, R1 and R2
 - 8.3. Kawaguchi surgical margin for soft tissue sarcoma
 - 8.4. Wide Local resection
9. **Counselling of cancer patients**
 - 9.1. SPIKE protocol
 - 9.2. Other protocols
 - 9.3. Psychosocial issues

Section (B) - 45 Marks

10. **Principle of tumor surgery and limb salvage**
 - 10.1. Amputation Vs Limb Salvage
 - 10.2. Survival affected by treatment choice
 - 10.3. Function of limb compared to prosthesis.
 - 10.4. Sarcomas around knee
 - 10.5. Psychosocial Consequences
 - 10.6. Criteria for Limb Salvage
 - 10.7. Indications
 - 10.8. Relative Contraindications
 - 10.9. Resection and Reconstruction
 - 10.10. Three Strike Rule
 - 10.11. Rotationplasty
11. **Presentation and evaluation of benign bone tumor**
 - 11.1. General Demography
 - 11.2. Clinical presentation
 - 11.3. Differential diagnosis
 - 11.4. Radiographic examination
 - 11.5. Bone scan/CT/MRI features
 - 11.6. Pathological fractures
 - 11.7. Staging of benign bone tumor
 - 11.8. Management
12. **Benign osteogenic tumor of bone**
 - 12.1. Osteoid osteoma
 - 12.2. Osteoblastoma
13. **Benign cystic lesion of bone**
 - 13.1. Unicamera Bone Cyst

- 13.2. Aneurysmal Bone Cyst
14. **Benign cartilage tumors**
 - 14.1. Osteochondroma
 - 14.2. Enchondroma
 - 14.3. Periosteal chondroma
 - 14.4. Multiple chondroma associated condition
 - 14.5. Chondroblastoma
 - 14.6. Chondromyxoid fibroma
15. **Benign fibrous and histiocytic lesions**
 - 15.1. Desmoplastic fibroma of bone
 - 15.2. Non-ossifying fibroma of bone
 - 15.3. Langerhanscell histiocytosis
 - 15.4. Osteofibrous dysplasia
 - 15.5. Fibrous dysplasia
 - 15.6. Hemangioma
16. **Giant cell tumor of bone**
 - 16.1. Introduction
 - 16.2. Staging
 - 16.3. Treatment
 - 16.4. Recent advances and medical management
 - 16.5. Surgical management
17. **Common benign soft tissue sarcoma**
 - 17.1. Lipomatous tumour
 - 17.2. Fibrous tumour
 - 17.3. Synovial tumour
 - 17.4. Neurofibroma
 - 17.5. Schwannoma
18. **Common malignant soft tissue sarcoma**
 - 18.1. Liposarcoma
 - 18.2. Fibrosarcoma
 - 18.3. Synovial sarcoma
 - 18.4. Rhabdomyosarcoma
19. **Presentation and evaluation of malignant bone tumor**
 - 19.1. General demography
 - 19.2. Clinical presentation
 - 19.3. Differential diagnosis
 - 19.4. Radiographic examination
 - 19.5. Bone scan/CT scan/MRI scan features
 - 19.6. Pathology features
 - 19.7. Staging of malignant bone tumor bone tumor
 - 19.8. Management

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20. **Common malignant bone tumor**
 - 20.1. Osteosarcoma
 - 20.2. Ewing's sarcoma
 - 20.3. Chondrosarcoma
 - 20.4. Multiple myeloma
 - 20.5. Primary lymphoma of bone
 - 20.6. Chordoma
 - 20.7. Some rare forms

21. **Metastatic bone Disease**
 - 21.1. Introduction
 - 21.2. Pathophysiology
 - 21.3. Presentation
 - 21.4. Principle of treatment
 - 21.5. Surgical aspect
 - 21.6. Palliative care