THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MS 0524] **MAY 2024** **Sub. Code: 4005**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – BASIC SCIENCES AS APPLIED TO ORTHOPAEDICS

Q.P. Code: 224005

Time: Three Hours **Maximum: 100 Marks**

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Intrinsic Muscles of Hand.
2. Course of Femoral Nerve.
3. Blood supply of Spinal Cord.
4. Screw Home Movement.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Calcitonin.
2. Nerve Conduction Studies.
3. Reflex Arc.
4. Circadian Rhythm.

III. BIO CHEMISTRY: **(3 x 5 = 15)**

1. Serum Electrophoresis.
2. Types of Collagen.
3. Uric acid synthesis and metabolism.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Infliximab.
2. Post Exposure Prophylaxis for HIV after Accidental Needle prick injury.
3. Neo adjuvant Chemotherapy of Osteosarcoma.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Histopathology of Chondrosarcoma.
2. Pathology of Paget’s disease.
3. Tumour markers.

VI. MICROBIOLOGY: **(3 x 5 = 15)**

1. Gene Expert Analysis.
2. Brucella Osteomyelitis.
3. Principles of Autoclave.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MS 1224] **OCTOBER 2024** **Sub. Code: 4005**

(OCTOBER 2024 EXAM SESSION)

M.S. DEGREE EXAMINATION

ORTHOPAEDICS

PAPER I – BASIC SCIENCES AS APPLIED TO ORTHOPAEDICS

Q.P. Code: 224005

Time: Three Hours **Maximum: 100 Marks**

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Stabilizers of the shoulder joint.
2. A_2 Pulleys of hand.
3. Quadratus Lumborum functions.
4. Tarsal Tunnel syndrome.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Gait Phases.
2. Neurogenic bladder.
3. Physiology of muscle contraction.
4. Bone morphogenetic proteins.

III. BIO CHEMISTRY: **(3 x 5 = 15)**

1. Purine metabolism.
2. Mucopolysaccharides.
3. Biochemical markers of Bone turnover.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Denosumab.
2. Hydroxyapatite crystals.
3. Rivaroxaban.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Pathophysiology of Nerve injury.
2. Myofascial nodules.
3. Giant cell variants.

VI. MICROBIOLOGY: **(3 x 5 = 15)**

1. Prevention of SSI.
2. Recent advances in diagnosis of tuberculosis.
3. MRSA.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MS 0525] **MAY 2025** **Sub. Code: 4005**

M.S. DEGREE EXAMINATION

ORTHOPAEDICS

PAPER I – BASIC SCIENCES AS APPLIED TO ORTHOPAEDICS

Q.P. Code: 224005

Time: Three Hours **Maximum: 100 Marks**

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Talus.
2. Iliopsoas.
3. Scarpa's Triangle.
4. Popliteal fossa.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Neuropraxia.
2. Autonomic bladder.
3. Physiology of Vitamin D3.
4. Complex regional pain syndrome.

III. BIO-CHEMISTRY: **(3 x 5 = 15)**

1. Alkaline phosphatase.
2. Ochronosis.
3. Synovial fluid analysis.

IV. PHARMACOLOGY: **(3 x 5 = 15)**1.

1. Methotrexate.
2. Zoledronic acid.
3. Low Molecular weight heparin.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Fine Needle Aspiration Cytology (FNAC).
2. Muscle Biopsy.
3. Fat embolism.

VI. MICROBIOLOGY: **(3 x 5 = 15)**

1. Clostridium Tetani.
2. HIV.
3. Biofilm-glycocalyx.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MS 1025] **OCTOBER 2025** **Sub. Code: 4005**

M.S. DEGREE EXAMINATION

ORTHOPAEDICS

PAPER I – BASIC SCIENCES AS APPLIED TO ORTHOPAEDICS

Q.P. Code: 224005

Time: Three Hours **Maximum: 100 Marks**

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Arches of the foot.
2. Corona mortis.
3. Brachial Plexus.
4. Carpel tunnel.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Physiology of shock.
2. Strength duration curve.
3. Parathyroid Hormone.
4. Fracture healing.

III. BIO CHEMISTRY: **(3 x 5 = 15)**

1. Hormones regulating calcium metabolism.
2. C-reactive protein.
3. Creatine phosphokinase – CPK.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Baclofen its action, uses and its adverse reaction.
2. Teriparatide.
3. Post-operative pain management in orthopaedic surgeries.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Brown tumour.
2. Tuberculous Osteomyelitis.
3. Heterotophic ossification.

VI. MICROBIOLOGY: **(3 x 5 = 15)**

1. Laminar Air Flow.
2. Polymerase chain reaction.
3. Colour coding of biomedical waste.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MS 0526] **MAY 2026** **Sub. Code: 4005**

M.S. DEGREE EXAMINATION

ORTHOPAEDICS

PAPER I – BASIC SCIENCES AS APPLIED TO ORTHOPAEDICS

Q.P. Code: 224005

Time: Three Hours **Maximum: 100 Marks**

Write notes on:

I. ANATOMY: **(4 x 5 = 20)**

1. Extensor mechanism of knee.
2. Blood supply of Scaphoid and its applied anatomy.
3. Extensor mechanism of fingers.
4. Supraspinatus muscle.

II. PHYSIOLOGY: **(4 x 5 = 20)**

1. Coagulation cascade.
2. Reticulo endothelial system.
3. Physiology of Osteoporosis.
4. Electromyography.

III. BIO CHEMISTRY: **(3 x 5 = 15)**

1. Bence-Jones proteins.
2. Factor VIII and its clinical significance.
3. Laboratory tests used in sepsis.

IV. PHARMACOLOGY: **(3 x 5 = 15)**

1. Chondro protective agents.
2. Chemotherapy for skeletal TB.
3. Alendronate vs Teriparatide.

V. PATHOLOGY: **(3 x 5 = 15)**

1. Myositis ossificans.
2. Frozen section.
3. Osteosarcoma.

VI. MICROBIOLOGY: **(3 x 5 = 15)**

1. Periprosthetic infections in orthopaedics.
2. Sterilization of orthopaedic implants and instruments.
3. Mycobacterium Tuberculosis.

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