[KW 212] **MARCH 2010** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

Paper I - (For candidates admitted from 2004-2005 to 2007-2008) and
Part I – (for candidates admitted from 2008-09 onwards)

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : 3 hours **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on

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

1. Arches of the foot.
2. Supraspinatus muscle.
3. Ilio-tibial band.
4. Brachial plexus.

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

1. Epiphyseal growth.
2. Wallerian degeneration.
3. Bone remodeling.
4. Cartilage regeneration.

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. Calcitonin.
2. Synovial fluid.
3. Fluorine.

IV. PATHOLOGY **(3 x 5 = 15)**

1. Bone biopsy.
2. Myositis ossificans.
3. Anaplasia.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Antibiotic resistance.
2. Rheumatoid factor.
3. Human immunodeficiency virus.

V1. PHARMACOLOGY **(3 x 5 = 15)**

1. Chemotherapy in Ewing’s sarcoma.
2. Intra-articular steroids.
3. Immuno-modulator drugs.

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[KX 212] **SEPTEMBER 2010** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

Paper I - (For candidates admitted from 2004-2005 to 2007-2008) and
Part I – (for candidates admitted from 2008-09 onwards)

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : 3 hours **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on

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

1. Tensor fascia lata.
2. Ligaments of the knee.
3. Talus.
4. Femoral triangle.

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

1. Nerve conduction.
2. Endochondral ossification.
3. Stem cell.
4. Parathyroid hormone.

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. Vitamin D.
2. Serum electrophoresis.
3. Alkaline phosphatase.

IV. PATHOLOGY **(3 x 5 = 15)**

1. Heterotopic ossification.
2. Marjolin’s ulcer.
3. Rheumatoid nodules.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. ELISA.
2. Clostridium Welchii.
3. Actinomycosis.

V1. PHARMACOLOGY **(3 x 5 = 15)**

1. Aspirin.
2. Allopurinol.
3. Raloxifene.

****

[KY 212] **MAY 2011** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : 3 hours **Maximum : 100 marks**
(180 Min)

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
I. ANATOMY			
1. Surgical anatomy of hip.	3	9	5
2. Ligaments of knee.	3	9	5
3. Lunate.	3	9	5
4. Scarpa's triangle.	3	9	5
II. PHYSIOLOGY			
1. Membranous calcification.	3	9	5
2. Thyroid hormone.	3	9	5
3. Nerve potential.	3	9	5
4. Growth hormone.	3	9	5
III. BIOCHEMISTRY			
1. Haemagglutination - Test.	3	9	5
2. PSA.	3	9	5
3. CRP.	3	9	5
IV. PATHOLOGY			
1. Sickle cell trait.	3	9	5
2. Tuberculous Osteomylitis.	3	9	5
3. Syphilitic ulcer.	3	9	5
V. MICROBIOLOGY			
1. Spot Test.	3	9	5
2. ß Heaemolytic streptococci.	3	9	5
3. Interleukin.	3	9	5
VI. PHARMACOLOGY			
1. Interferons.	3	9	5
2. Low molecular weight Heparin.	3	9	5
3. Tamoxifen.	3	9	5

****

[KZ 212] **OCTOBER 2011** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : 3 hours (180 Min) **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
I. ANATOMY			
1. Blood supply of the spinal cord.	3	9	5
2. Sciatic nerve.	3	9	5
3. Synovial plicae.	3	9	5
4. Psoas major.	3	9	5
II. PHYSIOLOGY			
1. Disc degeneration.	3	9	5
2. Fracture healing.	3	9	5
3. Coagulation cascade.	3	9	5
4. Post traumatic spinal shock.	3	9	5
III. BIOCHEMISTRY			
1. Uric acid.	3	9	5
2. Vitamin D.	3	9	5
3. Bence-Jones proteins.	3	9	5
IV. PATHOLOGY			
1. Tubercle.	3	9	5
2. Rheumatoid nodules.	3	9	5
3. Pathology of spinal infections.	3	9	5
V. MICROBIOLOGY			
1. Mycetoma.	3	9	5
2. MRSA.	3	9	5
3. Bone bank.	3	9	5
VI. PHARMACOLOGY			
1. Zolendronic acid.	3	9	5
2. Diclofenac sodium.	3	9	5
3. Isoniazid.	3	9	5

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[LA 212] **APRIL 2012** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : 3 hours (180 Min) **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
I. ANATOMY			
1. Rotator cuff.	3	9	5
2. Carpal tunnel.	3	9	5
3. Extensor mechanism of Knee.	3	9	5
4. Arches of foot.	3	9	5
II. PHYSIOLOGY			
1. Strength duration curve.	3	9	5
2. Reticulo endothelial system.	3	9	5
3. Synovial joint lubrication.	3	9	5
4. Osteoclast.	3	9	5
III. BIOCHEMISTRY			
1. Uric acid.	3	9	5
2. Bio chemical markers of bone formation.	3	9	5
3. Vitamin-D.	3	9	5
IV. PATHOLOGY			
1. Pathology of osteo arthritis.	3	9	5
2. Paget’s disease.	3	9	5
3. Avascular necrosis of bone.	3	9	5
V. MICROBIOLOGY			
1. Clostridium tetani.	3	9	5
2. Post implant infection in orthopaedics.	3	9	5
3. Hydatid disease of bone.	3	9	5
VI. PHARMACOLOGY			
1. Calcitonin.	3	9	5
2. Cis-platin.	3	9	5
3. Methyl prednisolone.	3	9	5

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[LB 212] **OCTOBER 2012** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : 3 hours (180 Min) **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
I. ANATOMY			
1. Blood supply of femoral head in adults.	3	9	5
2. Petit's triangle and its importance.	3	9	5
3. Typical lumbar vertebra and its significance.	3	9	5
4. Ligament of Bigelow and its importance.	3	9	5
II. PHYSIOLOGY			
1. Regulation of Calcitonin.	3	9	5
2. Physiology of Shock.	3	9	5
3. Complex regional pain syndrome.	3	9	5
4. Physiology of Osteoporosis.	3	9	5
III. BIOCHEMISTRY			
1. Factor VIII and its significance.	3	9	5
2. BMP.	3	9	5
3. Bio chemical aspects of Renal Osteodystrophy.	3	9	5
IV. PATHOLOGY			
1. Pathogenesis of Chronic osteomyelitis.	3	9	5
2. Pathology of Septic arthritis.	3	9	5
3. Myositis ossificians and its importance.	3	9	5
V. MICROBIOLOGY			
1. Laboratory Diagnosis of Gas gangrene.	3	9	5
2. Applications of BACTEC System.	3	9	5
3. Segregation of hospital waste.	3	9	5
VI. PHARMACOLOGY			
1. Bisphosphonates - action and uses.	3	9	5
2. Baclofen - action and adverse reactions.	3	9	5
3. Indomethacin - action and applications.	3	9	5

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[LC 212] **APRIL 2013** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : Three hours **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on

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

1. Longus colli.
2. Anterior cruciate ligament.
3. Scaphoid.
4. Posterior cord of brachial plexus.

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

1. Gate theory of pain.
2. Enchondral ossification.
3. Clonus.
4. Autonomic bladder.

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

1. Vitamin K.
2. Electrophoresis.
3. Paget's disease.

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

1. Rifampicin.
2. Teriparatide.
3. Tramadol.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. PCR.
2. Tetanus.
3. MDR tuberculosis.

VI. PATHOLOGY **(3 x 5 = 15)**

1. Nora's lesion.
2. F.N.A.C - Fine Needle Aspiration Cytology.
3. Plasma cell.

****

[LD 212] **OCTOBER 2013** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : Three hours **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on

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

1. Axillary artery.
2. Ankle joint.
3. Vertebral canal.
4. Surgical anatomy of posterior approach to hip joint.

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

1. Physiology of Vitamin D.
2. Muscle spindle and physiology of knee reflex (Deep tendon reflex).
3. Physiology of bone morphogenic proteins.
4. Sports physiology.

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

1. Collagen.
2. Biochemical markers of bone tumours.
3. Purine metabolism.

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

1. Thromboprophylactic drugs.
2. Chemotherapy in osteosarcoma .
3. Post-operative pain management in orthopaedic surgery.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Periprosthetic infections in orthopaedics.
2. Gonococcal arthritis.
3. Sterilization of orthopaedic implants and instruments.

VI. PATHOLOGY **(3 x 5 = 15)**

1. Pathology of acute inflammation.
2. Psoriatic arthropathy.
3. Spinal muscular atrophy (Infantile motor neuron disease).

****

[LG 212] **APRIL 2015** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time : Three hours **Maximum : 100 marks**

Answer ALL questions in the same order.
Draw suitable diagram wherever necessary

Write notes on

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

1. Sciatic Nerve.
2. Ligaments of knee joint.
3. Carpal tunnel.
4. Hamstring muscles.

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

1. Superficial reflex.
2. Horner's syndrome.
3. Physiology of wound healing.
4. Nerve conduction study.

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

1. Vitamin K.
2. Serum protein electrophoresis.
3. Interleukin.

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

1. Chondroprotective agents.
2. Cortico steroids.
3. Febuxostat.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Gas gangrene.
2. Nosocomial infection.
3. Diagnosis of HIV.

VI. PATHOLOGY **(3 x 5 = 15)**

1. Chondrosarcoma.
2. Frozen section.
3. Histiocytosis.

****

[LH 212] **OCTOBER 2015** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code : 222219

Time: Three Hours **Maximum: 100 marks**

Answer ALL questions

Write notes on:

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

1. Posterior interrosseus nerve.
2. Surgical anatomy of knee joint.
3. Blood supply of talus.
4. Distraction osteogenesis.

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

1. Bone mineral density.
2. Neuropraxia.
3. Coagulation pathway.
4. Birth asphxyia.

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

1. Liver function tests.
2. ASO Titre.
3. Mantoux test.

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

1. Cefixime.
2. Chemotherapy of osteosarcoma.
3. Management of anaphylactic shock.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Flash autoclaving.
2. Pseudomonas infection.
3. Tests to diagnose HIV infection.

VI. PATHOLOGY **(3 x 5 = 15)**

1. Fracture healing.
2. Calcification Vs Ossification.
3. Pathophysiology of Paget’s disease.

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(LI 212) APRIL 2016 **Sub. Code:2219**

M.S. DEGREE EXAMINATION
BRANCH II – ORTHOPAEDIC SURGERY
PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P.Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. Erb's point.
2. Ilio tibial tract.
3. Atlanto axial joint.
4. Foot drop.

II. Physiology **(4 x 5 = 20)**

1. Posterior column of spinal cord.
2. Neurogenic bladder.
3. Tendon healing.
4. Electro myography.

III. Biochemistry **(3 x 5 = 15)**

1. Glucosamine sulphate.
2. Alkaptanuria.
3. Hydroxyapatite.

IV. Pharmacology **(3 x 5 = 15)**

1. Bisphosphonates.
2. Monoclonal antibody.
3. Visco supplementation.

V. Microbiology **(3 x 5 = 15)**

1. Retrovirus.
2. Polymerase chain reaction.
3. Madura mycosis.

VI. Pathology **(3 x 5 = 15)**

1. Chondrosarcoma.
2. Immuno histo chemistry.
3. Granuloma.

****

(LJ 212) OCTOBER 2016 **Sub. Code:2219**

M.S. DEGREE EXAMINATION
BRANCH II – ORTHOPAEDIC SURGERY
PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P.Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. Radial nerve.
2. Anterior cruciate ligament.
3. Blood supply of femoral head.
4. Cross section of the wrist.

II. Physiology **(4 x 5 = 20)**

1. Wallerian degeneration.
2. Paralytic bladder.
3. Parathyroid and calcium metabolism.
4. Shock.

III. Biochemistry **(3 x 5 = 15)**

1. Uric acid metabolism.
2. Biochemical markers of bone tumours.
3. C-reactive protein.

IV. Pharmacology **(3 x 5 = 15)**

1. Pain management in Arthroplasty.
2. Lignocaine toxicity.
3. Biological therapy in Rheumatoid arthritis.

V. Microbiology **(3 x 5 = 15)**

1. Colour coding of biomedical waste.
2. MRSA.
3. Evaluation of seronegative arthropathies.

VI. Pathology **(3 x 5 = 15)**

1. Types of hyperparathyroidism.
2. Giant cell variants.
3. Pagets disease.

****

(LK 212) MAY 2017 **Sub. Code:2219**

M.S. DEGREE EXAMINATION
BRANCH II – ORTHOPAEDIC SURGERY
PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P.Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. Struther's ligament.
2. Anterolateral Surgical approach to hip joint.
3. Blood supply of scaphiod.
4. Carpal tunnel.

II. Physiology **(4 x 5 = 20)**

1. Electromyography.
2. Structure of a bone.
3. Bulbocavernal reflex.
4. PET CT SCAN in orthopaedics.

III. Biochemistry **(3 x 5 = 15)**

1. Acute phase reactants.
2. CPK.
3. Synovial fluid analysis.

IV. Pharmacology **(3 x 5 = 15)**

1. Immuno suppressive drugs.
2. Synthetic bone substitutes.
3. Biphosphonates.

V. Microbiology **(3 x 5 = 15)**

1. Sterilisation of metallic and nonmetallic implants.
2. Tetanus prophylaxis and prevention.
3. Pseudomonas infection.

VI. Pathology **(3 x 5 = 15)**

1. Fat embolism.
2. Mucopolysachradosis.
3. Marie Strumpell disease.

****

(LL 212) OCTOBER 2017 **Sub. Code:2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P.Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. Femoral anteversion.
2. Carpel tunnel.
3. Perforators of thigh.
4. Enchondral ossification.

II. Physiology **(4 x 5 = 20)**

1. Synovial fluid.
2. Coagulation pathways.
3. Neuromuscular transmission.
4. Strength-duration curve.

III. Biochemistry **(3 x 5 = 15)**

1. Bone resortion markers.
2. Anabolic hormones of the bone.
3. Calcitonin.

IV. Pharmacology **(3 x 5 = 15)**

1. Low molecular weight heparin.
2. Platelet rich plasma.
3. Alendronate vs Teriparatide.

V. Microbiology **(3 x 5 = 15)**

1. Universal precaution.
2. Hepatitis B.
3. Gas gangrene.

VI. Pathology **(3 x 5 = 15)**

1. Fat embolism.
2. Neonatal osteomyelitis.
3. Psoas abscess.

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(LM 212) MAY 2018 **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P.Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. Rotator cuff muscles.
2. Proximal end of femur.
3. Meniscus.
4. Common peroneal nerve.

II. Physiology **(4 x 5 = 20)**

1. Wolff's law.
2. Bone growth factors.
3. Tourniquet.
4. Gait phases and trendelenburg gait.

III. Biochemistry **(3 x 5 = 15)**

1. Total parentral nutrition.
2. Serum Alkaline Phosphotase.
3. Collagen.

IV. Pharmacology **(3 x 5 = 15)**

1. Anti Tubercular drugs.
2. Methotrexate.
3. Opioid analgesia.

V. Microbiology **(3 x 5 = 15)**

1. Clostridium tetani.
2. Reverse Transcriptase Polymerase Chain Reaction.
3. Cytokines.

VI. Pathology **(3 x 5 = 15)**

1. Nosocomial infection.
2. Tubercle.
3. Heterotrophic ossification.

****

(LN 212) OCTOBER 2018 **Sub. Code: 2219**

M.S. DEGREE EXAMINATION
BRANCH II – ORTHOPAEDIC SURGERY
PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. Nutrient artery.
2. Surgical anatomy of shoulder joint.
3. Arches of the foot.
4. Distraction osteogenesis.

II. Physiology **(4 x 5 = 20)**

1. Calcium metabolism.
2. Nerve conduction study.
3. Haemophilia.
4. Peripheral circulation.

III. Biochemistry **(3 x 5 = 15)**

1. Electrophoresis.
2. GTT.
3. Hyperlipidaemia.

IV. Pharmacology **(3 x 5 = 15)**

1. Calcitonin.
2. Chemotherapy of TB infection.
3. Steroids in orthopaedics.

V. Microbiology **(3 x 5 = 15)**

1. Iatrogenic infection.
2. Drug resistance.
3. Immunoglobulins.

VI. Pathology **(3 x 5 = 15)**

1. Tumor markers.
2. SLE.
3. Frozen section cytology.

****

(LO 212) MAY 2019 **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. What is Corona mortis?
2. No man's land Zone 2.
3. Ligaments supporting medial longitudinal arch of foot.
4. Blood supply of Scaphoid.

II. Physiology **(4 x 5 = 20)**

1. Metabolic function of Kidney.
2. PTH Parathyroid Hormone.
3. Gout.
4. Vitamin C deficiency.

III. Biochemistry **(3 x 5 = 15)**

1. CRP (C- Reactive protein)
2. ALKAPTONURIA.
3. GLUCAGON.

IV. Pharmacology **(3 x 5 = 15)**

1. 4^{th} generation Cephalosporins.
2. Interferons.
3. Metronidazole.

V. Microbiology **(3 x 5 = 15)**

1. Autoclave sterilization.
2. Myobacterium Tuberculosis.
3. T. Lymphocytes.

VI. Pathology **(3 x 5 = 15)**

1. Bence-Jones Protein.
2. Bone marrow aspiration.
3. Anti CCP antibody.

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(LP 212) OCTOBER 2019 **Sub. Code: 2219**

M.S. DEGREE EXAMINATION
BRANCH II – ORTHOPAEDIC SURGERY
PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

I. Anatomy **(4 x 5 = 20)**

1. Poterior interosseous nerve.
2. Short external rotators of Hip.
3. Blood supply of Talus.
4. Posterior cruciate ligament.

II. Physiology **(4 x 5 = 20)**

1. Superficial and Deep reflexes.
2. Lactic acidosis in trauma.
3. Vit-D and calcium metabolism.
4. Bone morphogenic proteins.

III. Biochemistry **(3 x 5 = 15)**

1. Synovial fluid analysis.
2. Serum electrophoresis.
3. Diseases of defective collagen synthesis.

IV. Pharmacology **(3 x 5 = 15)**

1. Bisphosphonates in Orthopaedics.
2. Chemotherapy in Osteosarcoma.
3. DVT- Prophylaxis and management.

V. Microbiology **(3 x 5 = 15)**

1. Recent advances in tuberculosis diagnosis.
2. Gas gangrene.
3. Colour coding of biomedical waste.

VI. Pathology **(3 x 5 = 15)**

1. Virchow's triad.
2. Cold abscess.
3. Fluorosis.

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[LQ 212] AUGUST 2020 **Sub. Code: 2219**

(MAY 2020 SESSION)

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Tensor fascia lata
2. Scarpa's triangle
3. Blood supply of spinal cord
4. Carpal tunnel

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

1. Strength duration curve
2. Physiology of shock
3. Autonomic bladder
4. Bone mineral density

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. ASO titre
2. Hydroxyapatite
3. Uric acid metabolism

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

1. Biological therapy in rheumatoid arthritis
2. Platelet rich plasma
3. Anti tubercular drugs

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Clostridium tetani
2. Immunoglobulins
3. Sterilisation of metallic and nonmetallic implants

VI. PATHOLOGY **(3 x 5 = 15)**

1. Fat embolism
2. Bone biopsy
3. Paget's disease

*****

[LS 212] NOVEMBER 2020 **Sub. Code: 2219**

(OCTOBER 2020 SESSION)

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Scaphoid
2. Petit's triangle
3. Blood supply of femoral head in adults
4. Rotator cuff

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

1. Gate theory of pain
2. Physiology of wound healing
3. Neuropraxia
4. Neurogenic bladder

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. CPK
2. Glucosamine sulphate
3. Calcitonin

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

1. Viscosupplementation
2. Pain management in Arthroplasty
3. Synthetic bone substitutes

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Pseudomonas infection
2. Universal precaution
3. HIV

VI. PATHOLOGY **(3 x 5 = 15)**

1. Psoas abscess
2. Heterotopic Ossification
3. Chondrosarcoma

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[MS 0721] JULY 2021 **Sub. Code: 2219**

(MAY 2021 SESSION)

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Transverse Acetabular Ligament.
2. Blood supply of Talus.
3. Brachial plexus.
4. Small muscles of hand.

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

1. Wolffs Law.
2. Coagulation Cascade.
3. Epiphyseal Growth.
4. Nerve conduction study.

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. Skeletal muscle structure.
2. ATP.
3. Hormones that regulate Ca Metabolism.

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

1. Teriparatide.
2. Febuxostat.
3. 5 – Fluro Uracil.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Clostridium Welchi.
2. Acid Fast Bacilli.
3. Louis Pasteur.

VI. PATHOLOGY **(3 x 5 = 15)**

1. Lyme arthritis.
2. Brown Tumour.
3. Auto immunity.

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

[MS 1121] NOVEMBER 2021 **Sub. Code: 2219**

(OCTOBER 2021 SESSION)

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Guyon's Canal.
2. Triangular Fibro Cartilaginous Complex.
3. Pulley's of hand.
4. Quadrangular Space.

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

1. Neuro Muscular junction.
2. Electromyogram.
3. Stem cell.
4. Creeping substitution.

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. I, 25 $(OH)_2 D_3$.
2. Serum Electrophoresis.
3. Z line in Skeletal Muscle.

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

1. Zolindronic Acid.
2. Clindamycin.
3. Methotrexate.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. MRSA.
2. Sterilisation by Radiation.
3. Laminar Air Flow.

VI. PATHOLOGY **(3 x 5 = 15)**

1. Bone cyst.
2. Air embolism.
3. Renal Osterodystrophy.

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

[MS 0522] **MAY 2022** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Blood Supply of Talus.
2. Posterior Interosseous Nerve.
3. Intervertebral Discs.
4. Ligaments of the Knee Joint.

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

1. Electromyogram (EMG).
2. Stem Cell.
3. Physiology of Osteoporosis.
4. Superficial and Deep reflexes.

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. Calcium Homeostasis.
2. Serum Alkaline Phosphatase.
3. Mucopolysaccharidoses.

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

1. Teriparatide.
2. Baclofen.
3. Chemotherapy in Osteosarcoma.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Role of biofilm in implant infection.
2. Madura mycosis.
3. Interferons.

VI. PATHOLOGY **(3 x 5 = 15)**

1. Giant cell variants.
2. Tumour markers.
3. Rheumatoid nodules.

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

[MS 1022] **OCTOBER 2022** **Sub. Code: 2219**

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Brachial Plexus.
2. Arches of Foot.
3. Draw the Cross-Section of Spinal Cord and Mention the functions of the Ascending and Descending Tracts.
4. Periosteum.

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

1. Structure and Functions of Bone Cells.
2. Neuromuscular Junction.
3. Coagulation Pathway.
4. Synovial Fluid.

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. Collagen.
2. Fluorine.
3. Serum Electrophoresis.

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

1. Low-molecular-weight heparins (LMWHs).
2. Bisphosphonates.
3. Rifampicin.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Antibiotic resistance.
2. Clostridium Welchii.
3. Reverse Transcriptase Polymerase Chain Reaction.

VI. PATHOLOGY **(3 x 5 = 15)**

1. F.N.A.C - Fine Needle Aspiration Cytology.
2. Tubercle.
3. Myositis ossificans.

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

[MS 0723] **JULY 2023** **Sub. Code: 2219**

(MAY 2023 EXAM SESSION)

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Shoulder stability.
2. Physis.
3. Anatomy of palmar fascia.
4. Antigravity Muscles.

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

1. Physiology of bone mineralization.
2. Normal myelo proliferation and myelo proliferation disorder.
3. Physiology and mechanism of neuropathic ankle joint.
4. Biological reaction in wear debris and host cell after joint replacement.

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. T cell based assay for extra pulmonary TB.
2. Hypercalcemia.
3. Serum Creatine kinase.

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

1. Antibiotics in septic arthritis.
2. Zoledronic acid.
3. Tolperisone.

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

1. Tumour Necrosis.
2. Post traumatic osteolysis.
3. Autosomal recessive muscular dystrophies.

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

1. Sterilization of endoscopic instruments.
2. MRSA.
3. Pathogenesis of osteomyelitis in children.

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

[MS 1223] **DECEMBER 2023** **Sub. Code: 2219**

(OCTOBER 2023 EXAM SESSION)

M.S. DEGREE EXAMINATION

BRANCH II – ORTHOPAEDIC SURGERY

PAPER I – APPLIED BASIC SCIENCES IN ORTHOPAEDIC SURGERY

Q.P. Code: 222219

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

Write notes on:

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

1. Blood supply to the head of femur in an adult with a diagram.
2. Write about Martin Gruber Anastomosis.
3. Bundles of the anterior cruciate ligament.
4. Extensor compartments of the wrist.

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

1. Function of Sarcoplasmic Reticulum.
2. Neuromuscular Junction.
3. Nutrition of cartilage.
4. What is Gate Control Theory of pain?

III. BIOCHEMISTRY **(3 x 5 = 15)**

1. Cori Cycle.
2. $1,25(OH)_2D_3$.
3. ATP.

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

1. Biologics in Rheumatoid Arthritis treatment.
2. Triamcinolone.
3. Chemotherapy of Myeloma.

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

1. Pseudo Gout.
2. Tumour Markers.
3. Malignant Osteoid.

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

1. Clostridium Perfringens.
2. Anaerobic Culture Media.
3. Epigenetic Mechanisms of Developing Drug Resistance.

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