

Mahatma Gandhi University
of
Medical Sciences & Technology, Jaipur

Syllabus
B.Sc. Orthopaedic Plaster Technology
(3 Years Degree Course)

Notice

1. Amendments made by the University in Rules/ Regulations of the courses shall automatically apply.
2. The University reserves the right to make changes in the syllabus/ books/ guidelines, fee-structure or any other information at any time without prior notice. The decision of the University shall be binding on all.
3. The jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

SYLLABUS
B.Sc. Orthopaedic Plaster Technology (CODE)
(3 Years Degree Course)

Rules & Regulations

1. TITLE OF THE COURSE

The title of the course shall be "B.Sc. Orthopaedic Plaster Technology".

2. DURATION OF COURSE/TRAINING

The course shall be of three years duration from the date of commencement of academic session

3. MEDIUM OF INSTRUCTION

English shall be the medium of instruction.

1. ELIGIBILITY FOR ADMISSION:

- For admission a candidate should have passed the 10+2 (Senior Secondary) Examination or its equivalent Examination Science stream i.e. Physics, Chemistry and Biology OR Physics, Chemistry and Mathematics Subjects with 45% marks in the aggregate for General Category and 40% for SC/ST/OBC/MBC candidates or as per Govt. Guidelines from a recognized Board.
- Candidate should have completed the minimum age of 17 years as on 31st December of the year of admission.

1. CRITERIA FOR ADMISSION

Selection shall be done by an Admission Board of the University strictly on merit. It will consist of two-step process –Written Entrance Examination followed by Counseling/Personal Interview (PI).

1. RESERVATION POLICY

Reservation shall be applicable as per policy of the State Government.

2. ENROLMENT

Every candidate who is admitted to the Course in Mahatma Gandhi Medical College shall be required to get himself/herself enrolled with the Mahatma Gandhi University of Medical Sciences & Technology after paying the prescribed eligibility and enrollment fees.

A candidate shall deposit enrollment fees along with tuition fees at the time of his/her admission to the course. Such a candidate who fails to submit, through the college Principal, duly filled enrollment form along with original documents including migration certificate required for enrollment within two months of his/her admission or up to November 30 of the year of admission whichever is later, he/she will have to pay late fee prescribed by the University.

3. MIGRATION RULES

- No student, once admitted to the course and enrolled by the University, will be permitted to migrate to any other Course/ University.
- No student will be admitted to the Course on migration from any other Course/ University.

1. ATTENDANCE

Minimum 75% attendance in each year, both for theory and practical classes separately. Student with deficient attendance will not be permitted to appear in University examination.

1. CONDUCTION OF THE UNIVERSITY EXAMINATION:

University examination shall be conducted twice in a year; that is Main and Supplementary Examination. Supplementary examination shall be conducted after 2-4 months of the main examination.

1. SCHEME OF EXAMINATION

i. Theory

- (a) Each Theory paper examination shall be of 3 hours duration and of maximum marks **70**.
- (b) Internal assessment shall be of **30** marks for each Theory Paper.

B.Sc. Orthopaedic Plaster Technology Part-I

Theory Papers	Theory		
	Theory	Theory Internal	Practical
Paper-I () Human Anatomy and Physiology	70	30	300
Paper-II () Pathology of Muscle and Bones	70	30	
Paper-III () Physics of Orthopedic instruments and It's Maintenance	70	30	

B.Sc. Orthopaedic Plaster Technology Part-II

Theory Papers	Theory		
	Theory	Theory Internal	Practical
Paper-I () First Aid, Applied sciences and Pharmacology	70	30	300
Paper-II () Basic Orthopaedics	70	30	
Paper-III () Traumatology	70	30	

B.Sc. Orthopaedic Plaster Technology Part-III

Theory Papers	Theory		
	Theory	Theory Internal	Practical
Paper-I () Orthopedic Implants and Plaster Technology	70	30	300
Paper-II () Operation Room Techniques and it's Management	70	30	

Paper-III () Biomechanics, Physiotherapy and Professionalism	70	30	
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- (c) For the First and Second year examinations – these respective above theory papers shall be set by the Internal Examiners covering their respective areas of syllabus. For each question paper there shall be a separate Internal Examiner. The answer books shall be evaluated by the concerned Internal Examiners (Papers Setters).
- (d) In Third (Final) Year examination, one of the papers shall be set and evaluated by an External Examiner. In other words, one of the Internal has to be substituted by the External Examiner. The External Examiner (Paper Setter) shall evaluate his/her paper.
- (e) The Paper Setter shall set the questions within the prescribed course of study of the concerned paper. There will be a set pattern of question papers duly approved by Academic Council. Model question paper is annexed herewith.
- (f) It is to be noted that the Internal and External Examiners of all the three years (First, Second and Third year) shall be appointed by the President of the University. This exercise shall be conducted through the office of the Controller of the Examinations of the University. The External Examiner of Third year shall also be appointed by the President out of the panel of names submitted by the Concerned Coordinator of the course through the Dean to the Controller of Examinations for appointment of Examiners by the President of the University.
- (g) Passing Marks: A candidate will have to obtain at least 50% marks in each Theory paper including internal assessment to pass. This shall include the marks obtained in Theory paper of 70 marks and internal assessment for that paper of 30 marks.

i. Practical and Viva-Voce Examination

- (a) Each year there shall be practical and viva-voce examination of 100 marks. It shall be conducted after the Theory examination is over. A candidate will have to obtain atleast 50% marks in practical and viva-voce examination inclusive of internal assessment to pass.
- (b) The pattern of practical examination shall be as follows –

B.Sc. Orthopaedic Plaster Technology

B. Sc. Course	Practical		Practical Examiners
	Total Marks	Pass Marks	
Part-I	100	50	3 Internal Examiner(s) (+Expert(s) if needed)
Part-II	100	50	4 Internal Examiner(s) (3 Internals + 1 Externals)
Part-III	100	50	4 Internal Examiner(s) (3 Internals + 1 Externals)

i. Result

1. A candidate will have to obtain at least 50% marks separately in each Theory paper including internal assessment and a minimum of 50% marks

in the practical examination inclusive of internal assessment for him to be declared pass.

2. A Candidate who has failed in theory paper/s will reappear in respective theory papers/s in supplementary examination.
3. Candidate who has failed in Practical examination only will reappear only in practical examination in Supplementary examination.

i. Supplementary Examination

- (a) Eligibility for the failed candidates to appear at the supplementary examination shall be as below –
 - i. Failed in Theory Paper(s) and failed in Practical – shall reappear in the respective failed Theory paper(s) and Practical examination.
 - ii. Failed in Theory paper/papers and passed in Practical examination – shall reappear only in the concerned failed Theory paper(s).
 - iii. Passed Theory papers but failed in Practical – shall reappear only in the Practical Examination.
- (b) There shall be a supplementary examination within two months of the declaration of the result of the main examination. Internal assessment marks obtained in main examination in the concerned failed paper/papers/ practical shall be carried forward for working out the result of supplementary Theory paper(s) and or practical examination. Such candidate who has secured less than 50% marks in the internal assessment will be allowed to improve his internal assessment marks in the repeat supplementary internal assessment examination.
- (c) Marks secured by the candidate in passed main examination/supplementary examination Theory paper(s) and/or practicals, as the case may be, will be carried forward for working out his result.

(d) Result:

- i. A candidate obtaining at least 50% marks in the supplementary Theory paper(s) and 50% marks in the supplementary practical examination, as the case may be, shall be declared successful.
- i. A candidate who has failed in supplementary theory paper(s) examination shall have to reappear only in the failed theory paper(s) at the subsequent examination.
- i. A candidate who has failed in supplementary practical examination shall have to reappear both in theory (all papers) and practical at the next main examination.

i. Promotion to Second/Third Year

1. A candidate appeared in the University examination and failed in theory paper(s) /Practical examination shall be promoted to next year
1. A candidate will be allowed to appear for the Final (3rd) year examination only when the backlog of all papers (theory and practical) of first year and second year exams is cleared
1. The student is required to complete the course within 6 years from the joining of the course

- i. Result - Division:** Successful candidates will be categorized as under –

1.	Those, securing 50% and above but less than 60% in the aggregate marks of First, Second & Third year taken together	-	Pass
2	Those, securing 60% and above but less than 75% in the aggregate marks of First, Second & Third year taken together	-	Pass with I Division
3	Those, securing 75% and above in the aggregate marks of First, Second & Third year taken together	-	Pass with Honours

1. GRACE MARKS

1. A student who appears in the whole examination in first attempt and obtains the required minimum pass marks in the total aggregate of an examination but fails to obtain the minimum pass marks in one subject (in theory and / or practical as the case may be) will be awarded the grace marks up to a maximum of 05 marks according to the following scale, provided the candidate passes the examination by award of such grace marks:

Marks obtained by the candidate above the required minimum aggregate pass marks		Grace marks can be given up to
Up to 6 marks	-	02
Up to 12 marks	-	03
Up to 18 marks	-	04
19 marks and above	-	05

1. No grace marks would be awarded to a candidate who appears in part/ supplementary/remand examination. Non appearance of a candidate in any part of the examination on account of any reason will make him ineligible for grace marks.
2. A candidate who passes the examination after the award of grace marks in a paper/practical or the aggregate will be shown in the marks sheet to have passed the examination by grace. Grace marks will not be added to the marks obtained by a candidate from the examiners.
3. If a candidate passes the examination but misses First or Second Division by one mark as applicable to the Faculty, he will be given one mark in the paper in which he gets the least marks and also in the aggregate of the subject as well as the complete examination to upgrade his division and make him entitled for the first or second division, as the case may be. Indication of this up-gradation will be given in the tabulation register as well as in the marks sheet of the candidate.
4. Non appearance of a candidate in any part of the examination will make him ineligible for grace marks.
5. A candidate who is awarded grace marks in any subject to pass the examination will not be entitled for distinction in any subject.
6. The place of the candidate who is awarded given grace marks to pass the examination or given one mark for up-gradation of his division in the examination merit list will, however, be determined by the aggregate marks he secures from the examiners.

1. REVALUATION / SCRUTINY

Revaluation of answer book(s) of the B.Sc. Courses is permissible in not more than 25% of the theory papers within 15 days from the date of declaration of examination result on submission of his/her application on the prescribed form alongwith the req-

uisite fees. Such answer book(s) shall be re-evaluated as per University rules. Revaluation of answer book(s) shall not be permitted for second attempt in any paper.

Scrutiny (re-totaling) of answer book(s) of the B.Sc. Courses is permissible within 15 days from the date of declaration of examination result on submission of his/her application on the prescribed form alongwith the requisite fees as per University Rules.

Permission for revaluation / scrutiny

1. In 1st Attempt – Revaluation shall be permitted in 25% of the appeared papers. Scrutiny shall be permitted for all the papers.
2. In 2nd Attempt – Only scrutiny shall be permitted in all the papers. Revaluation shall not be permitted.
3. Revaluation shall also be permitted in 25% of such papers in which a candidate appears for the 1st time irrespective of his attempt in the whole examination.
1. Candidates passing all the subjects of one examination at different times shall be issued their mark-sheets showing actual attempts taken by them in passing the particular examination.
2. For determining the attempt, following criteria shall be followed –

S. No.	Situation	Attempt in next examination
1.	Candidate is detained in all subjects	His attempt in all the subjects in the next examination will be treated as
2.	Candidate permitted in all subjects But did not appear in all permitted subjects	His attempt in the next examination will be treated as
3.	Candidate is detained in one / few subjects Permitted for the rest of the subjects Appeared in permitted subjects	His attempt in the detained subject(s) in the next examination will be treated as
4.	Candidate is detained in one / few subjects Permitted in the rest of the subjects Did not appear in the permitted subjects	His attempt in the next examination In detained subject(s) will be treated as In permitted subject(s) will be treated as
5.	Candidate permitted in all subjects But did not appear in few subjects	His attempt in the permitted subjects in the next examination will be treated as

Curriculum Outline

Distribution of Teaching hours

Part-I : B.Sc. Orthopaedic Plaster Technology

Course Title	Hours
Introduction, The cell, tissue, Epithelium, Connective, Nervous Tissue, Fibrous tissue	100
Osteology, Development of bone, Structure of Skeleton, Muscles, Circulatory System	150
Orthopaedic Conditions in childhood	100
Minor and Adult disorders of Joint and bones	150
Metabolic Conditions and Infections and Other common features	100
General Principles of Operative Procedures	100
Diathermy, Suction, OT Table, Lighting System, Fumigation	50
Orthopedic Instruments, Autoclave, Handling and care, C-Arm	50
Total Theory Hours	800
Practical	400
Total Hours :	1200

Part-II : B.Sc. Orthopaedic Plaster Technology

Course Title	Hours
First Aid, Bandaging and techniques, Splints, Emergency Care	150
Pharmacology	100
Orthopedic diseases, Infections, DDH, CTEV	200
Osteoporosis, Osteoarthritis	50
Trauma, Fracture Healing	100
Reduction techniques, traction, Types of Fractures	100
Role of Plaster Technician, Assessment of poly trauma patient, Radiology	100
Total Theory Hours	800
Practical	400
Total Hours :	1200

Part-III : B.Sc. Orthopaedic Plaster Technology

Course Title	Hours
POP, Slabs and Casts, Methodology	100
Types of Plaster and Plaster room Techniques, Dressing table, Material, Solutions	150
Fracture Fixation and Joint replacements	100
Scrubbing and Dressing, Tourniquet, Painting and Draping, Fumigation, Autoclaving	150
Preparation for Anaesthesia, Checkout, Sterilization, Sutures, Bio Waste management	100
BioMechanics	50
Physiotherapy and rehabilitation	100
Professionalism	50
Total Theory Hours	800
Practical	400
Total Hours :	1200

SYLLABUS

B.Sc.- Orthopaedic Plaster Technology (3 Years Degree Course)

Learning Objectives:

At the completion of this course, the student should be –

1. To function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.
4. Communication skills:
5. Teamwork:
6. Counseling of relatives:
7. Leadership:
8. Advocacy:
9. Ethics:

Expectation from the future graduate in the providing patient care

1. Exhibits participation in honest, accurate health related information sharing in a sensitive and suitable manner
2. Recognizes that being a good communicator is essential to practice effectively
3. Exhibits effective and sensitive listening skills
4. Exhibits participation in discussion of emotional issues
5. Exhibits leadership in handling complex and advanced communication
6. Recognizes the importance of patient confidentiality and the conflict between confidentiality and disclosure
7. Able to counsel patients on their condition and needs
8. **Teamwork:** Seek cooperation. Coordination and communication among treating specialties and paramedical staff
9. **Counseling of relatives:** regarding patients condition, seriousness, bereavement and counseling for organ donation in case of brain stem death

Part-I

Theory Paper :

Paper-I - Human Anatomy and Physiology

Paper-II - Pathology of Muscle and Bones

Paper-III - Physics of Orthopedic instruments and It's Maintenance

Part-I : Paper-I - Human Anatomy and Physiology

1. **Introduction to the body as a whole:**
2. **The cells, tissues of the body, Structure, Multiplication**
Cell Membrane, Contacts between cells, Cell Organelles, Projections from cell surface, The Nucleus, Chromosomes, Cell division, Sex Chromatin
3. **Tissue : Types, structure, characteristics, functions**
4. **Epithelium :**
Simple, Compound, Classification of epithelia, Squamous, Cuboidal and Columnar, Basement Membranes
5. **Connective : Areolar, adipose, fibrous, elastic, cartilage, blood and bone:**
Intercellular Ground Substance, Fibres, Cells, Summary of Functions
6. **Muscle : Striated (Voluntary), Smooth (Involuntary, Cardiac)**
7. **Nervous tissue, Fibrous tissue:**
Neuron Structures, Peripheral Nerves, Degeneration and Regeneration of neurons, Sensory Receptors, Neuromuscular Junctions, Ganglia, Neuroglia
8. **Cell regeneration**
9. **Membranes : Mucous, Serous, Synovial**
10. **Osteology (including whole skeleton, bones, joints)**
Basic Structure, Further Details, The periosteum
11. **Development of bones (Osteogenesis) : Cells inv.,**
Bone Formation, How Bones Grow
12. **Types of Bones, Structures of skeleton- names of bones, surface anatomy of bones and joints of upper and lower limbs.**
13. **Vertebral column. Regions, normal curves.**
14. **Muscles- Main group of muscles moving the limbs.**
15. **Nervous System-**
Spinal cord in brief Surface Anatomy of nerves relevant to casting work.
16. **Circulatory System-**
Main blood vessels of the limbs:
How to palpate pulse and evaluate circulation.

Part-I : Paper-II - Pathology of Muscle and Bones

1. **Backache and Neck ache:**

2. **Orthopaedic conditions in childhood:**

Fractures in Children, CTEV, DDH, Congenital, Genetic, Syndromic and Miscellaneous Disorders, Poliomyelitis, Cerebral Palsy, Anomalies of the Pediatric Upper and Lower Limb, Perthes Disease

3. **Minor and adult disorders of Joint and bones, metabolic condition**

Osteoporosis, Rickets, Osteomalacia, Scurvy and Orthopedics, Hyperparathyroidism, Paget's Disease, Fluorosis, Inflammatory Arthritis, Seronegative spondyloarthropathies, Crystal Deposition Arthropathies, Degenerative Arthritis, Common features

Part- I : Paper-III : Physics of Orthopedic instruments and It's Maintenance

1. **General principles of Operative procedures and orthopedic appliances**

2. **Surgical diathermy.**

3. **Suction machine, Various lightening system, Fumigation, Orthopedic instruments.**
Uses, Functioning, maintenance, implications in orthopedics

4. **OT Tables and attachments, Autoclave instrument**

5. **Handling and care**

6. **C-Arm image intensifier (Conventional & Digital):**

Reference Books:

TITLE	AUTHOR
1 Anatomy and Physiology	Rose and Wilson
2 Anatomy and Physiology	Evelyn Pearce
3 Essential Orthopaedics	Maheshwari
4 Functional fracture	Bracing Sarmiento
5 First Aid and Emergency Management	Mandeep S Dillon
6 Traction and Orthopedic Appliances	John D.M. Stewart
7 Closed Treatment of Common fractures	Sir John Charnley
8 Bedside clinics in Orthopedics	Upendra Kumar
9 Essentials of Fracture Fixation	A.J. Thakur
10 Operation Theatre Techniques	Rashmi S. Patil

Practical :

1. Identify the given bone, its side, important features & keep it in anatomical position
2. Demonstrate important muscle attachment on the given bone
3. Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm
4. Describe the different types of muscle fibres and their structure
5. properties of synapse, reflex, receptors
6. Identify orthopedic instruments and describe it's various applications.
7. Usage and Functioning of the OT table, basic operative instruments, OT Table and it's various attachments
8. Surgical diathermy, Sterilization and Autoclave.

Part-II - Theory Papers :

Paper - I : First Aid, Applied sciences and Pharmacology

Paper - II : Basic Orthopaedics

Paper - III : Traumatology

Part-II : Paper - I : First Aid, Applied sciences and Pharmacology

- **First Aid, Applied sciences:**

- 1. Definition of first aid, aims and objectives, responsibilities and general principles for first aiders.**
- 2. Bandage, material used in bandaging, techniques of application of a roller bandage, techniques of application of a triangular bandage.**
- 3. Different types of knots and slings.**
- 4. First aid kit, articles and purposes**
- 5. Application of splints, plaster of paris, traction and strapping**
- 6. Emergency care in**

- Wound

- Haemorrhage

- Shock

- 7. Transportation of injured patient**

Pharmacology

- 1. Introduction**
- 2. Brief history of the evolution of modern drug therapy**
- 3. Law regulating drugs-national, international**
- 4. Pharmacopias**
- 5. Plants, animals, minerals and synthetics Solution and suspensions**
- 6. Dosage, forms-pills, capsules, tablets, etc.**
- 7. Sources of drugs**
- 8. Pharmaceutical Preparations**
- 9. Weights and Measures**
- 10. Prescribing of drugs**
- 11. Administration of drug**
- 12. Action of drug-local, systemic**
- 13. Toxic symptoms and antidotes**
- 14. Factors influencing action of drugs**

15. **Grouping of drugs**

16. **Care of drugs**

Part-II : Paper-II : Basic Orthopaedics

1. **Orthopaedic diseases**

AVN, Soft Tissue disorders, Skeletal dysplasia

2. **Infections- osteomyelitis, T.B.**

Osteomyelitis, Septic arthritis, Madura Foot, Leprosy, Hand Infections, Tuberculosis of Various Joints and Spine

3. **Congenital Talipes Equino Varus (CTEV)**

4. **Developmental dysplasia of hip (DDH)**

5. **Osteoporosis**

6. **Osteoarthritis**

Part-II : Paper- III : Traumatology

1. Trauma, Fractures- Types, Healing & Complications.
2. Factors affecting fractures healing.
3. Idealcasting technique.
4. Functional portion of joints.
5. Care of patients with plaster
6. Regional Trauma- Names of common fracture, common deformities.
7. Reduction techniques
8. How to apply traction and counter-traction.
9. Types of fractures- definition of fracture, Open & Close Fractures. Pattern of fracture Stable-Unstable.
10. Thomas splint, pelvic traction.
11. Buddy strapping.
12. Common orthopaedics splints, AFO, wrist dup sp]int, humerus brace, tibia] gutter.
13. Cuff & Collar, Ann sling.
14. Robert Jones Bandage.
15. Role of plaster technician in poly trauma
16. Assessment of trauma patient
17. Common fractures of Upper and Lower extremities, skull, spine
18. Radiology - basic interpretation skills

Practical :

1. Bandaging material and Methods
2. First aid kit description
3. IV Cannula, Needles, Syringes - their proper use and disposal
4. Wound Care
5. Sterile dressing techniques
6. Different Modes of administration of Drugs
7. Basic Interpretation of Radiographs

Reference Books:**TITLE****AUTHOR**

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2 Anatomy and Physiology	Evelyn Pearce
3 Essential Orthopaedics	Maheshwari
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10 Operation Theatre Techniques	Rashmi S. Patil

Part-III - Theory Papers :

Paper- I : Orthopedic Implants and Plaster Technology

Paper- II : Operation room techniques and it's Management

Paper- III : Biomechanics, Physiotherapy and Professionalism

Part-III : Paper- I : Orthopedic Implants and Plaster Technology

1. History of plaster of paris
2. Properties of plaster of paris
3. Preparation of plaster of paris bandages,
4. Different types of slabs and casts,
5. Correct method of applying slabs and casts
6. Special plaster - FCB, PTB etc.
7. Plaster removal
8. Plaster cutter and associated instruments
9. Casting and splinting
10. Braces and traction
11. Types of plaster its advancement
12. Dressing and dressing room techniques
13. Introduction : general environment and cleanliness
14. Dressing table and trolley, drums : preparation contents and maintenance
15. Dressing material : types, preparation, use and sterilization.
16. Different types of solutions used for dressing viz. hydrogen peroxide, providing iodine etc.
17. Medicated dressings viz sofratulley, collagen etc.
18. Basic principles of bandaging
19. Principles involved in the design, fabrication and use of orthopedic implants.
20. Orthopedic implant mechanics and materials
21. Biocompatibility, strength, lubrication and interfacing.
22. Hip joint replacement
23. Knee joint replacement
24. Ankle joint replacement
25. Fractures, fracture healing and non-surgical fixation
26. Surgical fracture fixation.

Part-III : Paper-II : Operation room techniques and it's Management

1. Reception of patients in OT premises
2. Scrubbing, dressing
3. Tourniquet and its' application
4. Growing, painting and draping
5. OT Fumigation and UV Lights
6. Autoclaving
7. Preparation for anesthesia
8. Check out procedure
9. Sterilization : Definition, classification of sterilization, importance of sterilization, sterilizing agents, physical methods
10. Sutures

Absorbable - Surgical catgut, collagen sutures, synthetic absorbable sutures etc.

Nonabsorbable - silks, cotton, polyamide, polypropylene, stainless steel etc.

1. Biowaste management and Disposal.

Part-III : Paper-III : Biomechanics, Physiotherapy and Professionalism

1. Biomechanics : mechanics of the human musculoskeletal system.
2. Biomechanics of skeletal : basic properties and mechanics of bone, articular cartilage, tendons and ligaments, biomechanics of lower limb, major joints of the lower limb, including the bio-mechanics of walking.
3. Upper limb and spine : detailed examination of the forces acting on the spine during lifting.
4. Physiotherapy of spine, upper limb (shoulder joint, elbow joint, wrist joint), lower limb (knee joint, ankle joint, phalanges etc.)
5. Rehabilitation of patient after recovery from trauma / injury / Operative procedure.
6. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

Practical :

1. Preparation of POP bandages
2. Preparation of various Plaster Slabs
3. Casting and Splinting techniques
4. Application of Padding
5. Special Plasters (PTB, Hip Spica, etc)
6. Plaster Removal (Hand Saw, Machine Saw)
7. Plaster cutter and associated instruments
8. Dressing room techniques
9. Suturing material and various suturing techniques
10. Painting, Draping in the OT
11. Basic physiotherapy of Upper and Lower limbs

Reference Books:**TITLE****AUTHOR**

1 Anatomy and Physiology	Rose and Wilson
2 Anatomy and Physiology	Evelyn Pearce
3 Essential Orthopaedics	Maheshwari
4 Functional fracture	Bracing Sarmiento
5 First Aid and Emergency Management	Mandeep S Dillon
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MODEL PAPER

B.Sc.OPT-I
Code

Hum. Ana. & Phy.-I

B.Sc. Orthopaedic Plaster Technology

Part-I (Main) Examination Month Year

Paper - I

Human Anatomy and Physiology

Time: Three Hours

Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|--------------------------------|-------------|
| Q.1 | Essay Type Questions : | 2 x 15 = 30 |
| | a) Blood Supply of Bone | |
| | b) Types of Epithelium | |
| Q.2 | Long Answer Type | 2 x 10 = 20 |
| | a) Striated Muscles | |
| | b) Types of Bones | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) Neuron Structure | |
| | b) Periosteum | |
| | c) Osteogenesis | |
| | d) Blood Vessels of Lower Limb | |
| | e) Vertebral Column | |
| | f) Cell Membranes | |

MODEL PAPER

B.Sc.OPT-I
Code

Patho. of Mus. & Bon.-II

B.Sc. Orthopaedic Plaster Technology

Part-I (Main) Examination Month Year

Paper - II

Pathology of Muscle and Bones

Time: Three Hours

Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|---------------------------------------|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) Fractures in Children | |
| | b) CTEV | |
| Q.2 | Long Answer Type | 2 x 10 = 20 |
| | a) DDH | |
| | b) Cerebral Palsy | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) Osteoporosis | |
| | b) Scurvy | |
| | c) Paget's Disease | |
| | d) Osteoarthritis | |
| | e) Rickets | |
| | f) Seronegative spondyloarthropathies | |

MODEL PAPER

B.Sc.OPT.-I
Code

Phy. of Orth. Inst. & Its Maint.-III

B.Sc. Orthopaedic Plaster Technology

Part-I (Main) Examination Month Year

Paper - III

Physics of Orthopedic Instruments and It's Maintenance

Time: Three Hours

Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|--|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) General Principals of Opearative Procedures | |
| | b) Essay Type Question :- Surgical Diathermy | |
| Q.2 | Long Answer Type :- | 2 x 10 = 20 |
| | a) Suction Machine | |
| | b) Fumigation | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) OT Tables | |
| | b) Handling OT Instruments | |
| | c) C-Arm in OT | |
| | d) Autoclave | |
| | e) Sterility in OT | |
| | f) Care of Orthopedics Instruments | |

MODEL PAPER

B.Sc.OPT.-II
Code

First Aid, Appl. Sci. & Pharm.-I

B.Sc. Orthopaedic Plaster Technology

Part-II (Main) Examination Month Year

Paper - I

First Aid, Applied sciences and Pharmacology

Time: Three Hours

Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|---------------------------------------|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) General Principal of First Aid | |
| | b) Technique of Roller Bandages | |
| Q.2 | Long Answer Type | 2 x 10 = 20 |
| | a) Different Types of Knot | |
| | b) First Aid Kit | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) MX of Wound | |
| | b) MX of Shock | |
| | c) Transportation of Injured Patients | |
| | d) Sources of Durgs | |
| | e) Pharmaceutical Preparations | |
| | f) Administration of Drugs | |

MODEL PAPER

B.Sc.OPT.-II
Code

Basic Ortho.-II

B.Sc. Orthopaedic Plaster Technology

Part-II (Main) Examination Month Year

Paper - II Basic Orthopaedics

Time: Three Hours
Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|---|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) AVN | |
| | b) Skeletal Dysplasia | |
| Q.2 | Long Answer Type | 2 x 10 = 20 |
| | a) CTEV | |
| | b) Osteoporosis | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) Osteoarthritis | |
| | b) Types of Factors | |
| | c) Factors affecting Fractures Healings | |
| | d) Care of Patient with Plaster | |
| | e) Buddy Strapping | |
| | f) RJ Bandages | |

MODEL PAPER

B.Sc.OPT-II
Code

Traum.-III

B.Sc. Orthopaedic Plaster Technology

Part-II (Main) Examination Month Year

Paper - III Traumatology

Time: Three Hours
Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|---------------------------------------|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) Types of Fractures | |
| | b) Factors affecting Fracture Healing | |
| Q.2 | Long Answer Type | 2 x 10 = 20 |
| | a) Casting Techniques | |
| | b) Functional Portions of Joints | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) Colles Fractures | |
| | b) Reduction Techniques | |
| | c) Trachain Techniques | |
| | d) Thomas Splint | |
| | e) Cuff & Collar sling | |
| | f) RJ Bandages | |

MODEL PAPER

B.Sc.OPT.-III
Code

Ortho. Impl. & Plast. Tech.-I

B.Sc. Orthopaedic Plaster Technology

Part-III (Main) Examination Month Year

Paper - I

Orthopedic Implants and Plaster Technology

Time: Three Hours

Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|---|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) Plaster of Paris - History | |
| | b) Preparation of Plaster of Paris Bandages | |
| Q.2 | Long Answer Type | 2 x 10 = 20 |
| | a) Different Types Slabs | |
| | b) PTB Lant | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) Casting | |
| | b) Braces | |
| | c) Types of Dressing Materials | |
| | d) Basic Principals of Bandaging | |
| | e) Total Knew Replacement | |
| | f) Plaster Removable | |

MODEL PAPER

B.Sc.OPT.-III
Code

Oper. room Tech. & Its Mang.-II

B.Sc. Orthopaedic Plaster Technology

Part-III (Main) Examination Month Year

Paper - II

Operation Room Techniques and it's Management

Time: Three Hours

Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|-------------------------------|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) OT Fumigation | |
| | b) Scrubbing Techniques | |
| Q.3 | Long Answer Type | 2 x 10 = 20 |
| | a) Auto Claving | |
| | b) Types of Sutures | |
| Q.4 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) Check out Procedure | |
| | b) Delegation Sterilizations | |
| | c) Biowaste Management | |
| | d) Preparation for Anesthesia | |
| | e) Silk Uses | |
| | f) Painting Draping | |

MODEL PAPER

B.Sc.OPT.-III
Code

Biom. Phy. & Profe.-III

B.Sc. Orthopaedic Plaster Technology

Part-III (Main) Examination Month Year

Paper - III

Biomechanics, Physiotherapy and Professionalism

Time: Three Hours

Maximum Marks: 70

Students shall be allowed to take only one supplementary copy along with one main answer book. All the parts of one question should be answered at one place. Different parts of one question should not be answered at different places in the answer book
Draw diagrams wherever necessary

Attempt all questions

- | | | |
|-----|--------------------------------------|-------------|
| Q.1 | Essay Type Questions | 2 x 15 = 30 |
| | a) Examination of Spine | |
| | b) Rehabilitation of Trauma Patients | |
| Q.2 | Long Answer Type | 2 x 10 = 20 |
| | a) Physiotherapy of Shoulder Joint | |
| | b) Biomechanics of Bone | |
| Q.3 | Short Notes (any 4 out of 6) | 4 x 5 = 20 |
| | a) Loge Roll | |
| | b) Ethics in patient treatment | |
| | c) Movement in Wrist Joint | |
| | d) Braise Application in Knee Joint | |
| | e) Examination of Knee Joint | |
| | f) Romi Knee Braise | |