

**Mahatma Gandhi University**  
of  
**Medical Sciences & Technology, Jaipur**

# **Syllabus**

**M.Sc. Emergency and Trauma  
Care Technology  
(2 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.

**M.Sc. Emergency and Trauma Care Technology (            )**

(2 Years Degree Course )

## **Rules & Regulations**

### **1. TITLE OF THE COURSE**

The title of the course shall be “**M.Sc. Emergency and Trauma Care Technology.**”

### **2. DURATION OF COURSE/TRAINING**

The course shall be of two years duration

### **3. MEDIUM OF INSTRUCTION**

English shall be the medium of instruction

### **4. ELIGIBILITY FOR ADMISSION:**

Candidate should have passed the Bachelor's Degree in Emergency Medicine, Respiratory Therapy, Physician Assistant, Anesthesia Technology.

### **5. 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).

### **6. RESERVATION POLICY**

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

### **7. ENROLMENT**

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

A candidate shall deposit enrolment 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 enrolment form along with original documents including migration certificate required for enrolment 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

### **8. 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.

### **9. 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.

## 10. TRAINING:

1. The period of training for M.Sc. shall be of two years from the date of admission.
2. Part – I and Part – II of the course shall be of one-year duration each.
3. The candidate will undertake the post graduate training as a full time post graduate in the department concerned.
4. The students will be required to complete the prescribed period of study and fulfill the requirement of attendance before they are allowed to appear in the University examination.

## 11. EXAMINATION AND ASSESSMENT

1. The examination of Part I shall consist of two theory papers and internal assessment and practical & viva-voce examination.
2. The examination of Part II shall consist of two theory papers & internal assessment and practical in the opted specialization.
3. A candidate shall be permitted a maximum of 4 years from the year of admission to complete the course and pass the examination failing which, the candidate will have to leave the course.
4. Only those candidates will be allowed to appear at Part II examination, who have passed Part –I examination completely.
5. Degree of M.Sc. Emergency and Trauma Care Technology will be awarded to a candidate only after his successful completion of one year compulsory internship.

## 12. 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.

## 13. SCHEME OF EXAMINATION

**The Examination in Part I shall consist of:**

<b>Paper</b>	<b>Marks</b>
<b>Theory</b>	
<b>Paper I - Basic Sciences Applied to Trauma and Emergency Care</b>	100 Marks
<b>Paper II – General Aspects of Trauma and Critical Care</b>	100 Marks
<b>Internal Assessment</b>	100 Marks
<b>Practical &amp; Viva Voce Examination</b>	100 Marks
<b>Total Marks</b>	<b>400 Marks</b>

### Notes:

1. Each theory paper shall be of 3 hours duration.
2. Each paper will be set by the External Examiner of the subject concerned and will be assessed by the internal examiner of the subject concerned.

Pattern of questions to be set and answered shall be as follows:

<b>Paper</b>	<b>No. of questions to be set</b>	<b>No. of questions to be answered</b>
Paper I	4	4
Paper II	4	4

- In order to pass the University Examination, the candidate must secure a minimum of 50% marks in each theory paper including internal assessment and 50% marks in practical and viva-voce examination separately.
- A candidate who has failed in one or more theory paper of Part-I Examination must appear in that theory paper in supplementary examination which will be conducted by university within 2 – 4 months.

**The Examination in of Part II shall consist of:**

<b>Paper</b>	<b>Marks</b>
<b>Theory</b>	
<b>Paper I - Advanced Critical Care Management</b>	<b>100 Marks</b>
<b>Paper II - Advanced Trauma Care And Management</b>	<b>100 Marks</b>
<b>Internal Assessment</b>	<b>100 Marks</b>
<b>Practical &amp; Viva Voce Examination</b>	<b>100 Marks</b>
<b>Total Marks</b>	<b>400 Marks</b>

**Notes:**

- Each theory paper shall be of 3 hours duration.
- All papers shall be set by the External Examiners.
- Paper I will be assessed by the External Examiner and Paper II will be assessed by the Internal Examiner viz. Head of the Department of subject concerned. Paper III will be assessed by Professor / Associate professor / Assistant professor

Pattern of questions to be set and answered shall be as follows:

<b>Paper</b>	<b>No. of questions to be set</b>	<b>No. of questions to be answered</b>
Paper I	4	4
Paper II	4	4

- Practical examination shall be conducted by one Internal, one External Examiner which will be appointed by the university.
- In order to pass the examination the candidate must secure a minimum of 50% marks in Theory papers including internal assessment and 50% marks in practical and viva-voce examination separately.
- In case a student passes either in Theory or in Practical only, the student shall be considered to fail in the whole examination and he will have to appear in both the Theory and Practical in the subsequent examination.

**14. APPOINTMENT OF EXAMINER AND PAPER SETTERS**

- a. All the examiners, paper setters, theory examination answer books evaluators, Internal and External Examiners for Practical examinations shall be appointed by the President of the University.
- b. Qualification of the Paper setter / Examiner: Assistant Professor and above.
- c. Paper setter can be an examiner

**15. GRACE MARKS**

No grace marks will be provided in M.Sc. Examination

**16. REVALUATION / SCRUTINY**

No Revaluation of answer books shall be permitted in M.Sc. Examination. However, the candidate can apply for scrutiny of marks as per University Rules.

## Curriculum Outline

### Distribution of Teaching hours

#### 1<sup>ST</sup> Year M.Sc. Emergency and Trauma Care Technology

Course Title	Hours
Basics Sciences Applied to Emergency and Trauma Care	100
Principles of equipments related to Emergency	60
Principles of General Pharmacology, Drugs related to different systems, Analgesics and Anaesthesia Drugs	60
Pathophysiology of Critically ill patients	80
Basic Concepts of Obstetrics & Paediatrics	40
<b>Trauma</b> – Epidemiology, Triage, Mechanism and Imaging	100
Principles of procedures in Emergency	80
Fundamentals of Critical Care and Monitoring in ER and ICU	80
Biostatistics, audits & Epidemiology	50
Teaching Methodology & Computer applications	50
<b>Total Theory Hours</b>	<b>700</b>
Practical	500
<b>Total Hours:</b>	<b>1200</b>

#### 2<sup>nd</sup> Year M.Sc. Emergency and Trauma Care Technology

Course Title	Hours
Resuscitation of Critically Ill Patients in Emergency	150
Cardiac Arrest Management and Post Cardiac Arrest Care	80
Clinical Aspect and management of critically ill patients in ER	80
ABCDE Of Trauma	100
Clinical guideline, evidence based practices & quality improvement	80
Pre-hospital Management of Trauma and Non Trauma Patient	60
Biomedical Waste Management and Procedure Prepration	50
Medico legal issues, Medical Ethics	50
Research Methodology and recent advances	50
<b>Total Theory Hours</b>	<b>700</b>
Practical	500
<b>Total Hours:</b>	<b>1200</b>

# SYLLABUS

## M.Sc. EMERGENCY AND TRAUMA CARE TECHNOLOGY

(2 Years Degree Course )

### **Learning Objectives:**

- Hands on training on Airway and Difficult Airway equipments ( laryngoscope, bougie etc.) defibrillator, monitors, different surgical instruments, nebulization machine, ventilator etc.
- Training in aseptic techniques.
- Exercise empathy and a caring attitude towards patients.
- Maintain professional integrity, honesty and high ethical standards
- Capability of handling adverse reactions and emergencies in ER.
- Demonstrate skills in maintenance of equipments and proper documentation.
- Be a motivated teacher - defined as one keen to share knowledge and skills with a colleague or a junior or any learner.

### **Expectation from the future graduate in the providing patient care**

1. Student should be able to demonstrate comprehensive knowledge of managing all types of emergencies including trauma.
2. Student should be able integrate knowledge with practice in handling and maintaining various equipments in ED.
3. The student must be well versed with infection control and Biomedical waste management
4. Student must be capable of ED management, medical record ,consent and accreditation & management policies implimentation
5. Student should be able to assist advanced patient care during Prehospital transport and ED.
6. Should be able 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 management.
7. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health care personnel and to respect the rights of the patient including the right to information, privacy and second opinion.
8. Student should have ability to work independently and take responsibility for his own work, collaborating in activities of clinical research, training ethical and evidence-based practices.

### **Assessment:**

The examination to the first/second year shall be open to a student who:

Has remained on the rolls of the course concerned for full on academic year preceding the examination and having attended not less than 75% of the full course of lectures and 75% practical separately held for the purpose in each year.



# SYLLABUS

## Preparatory

- EMS systems, Roles and Responsibilities of the Paramedic The Basics
- Illness and injury prevention
- Medical and legal issues
- Ethical Issues
- Pathophysiology
- Pharmacology
- Vascular Access and Medication Administration
- Human Development
- Patient Communication

## Airway

- Airway Management and ventilation

## Patient Assessment

- Patient History
- Physical Examination
- Patient Assessment
- Critical Thinking and Clinical Decision Making
- Communications and Documentation

## Trauma

- Trauma Systems and Mechanism of Injury
- Bleeding and shock
- Soft-Tissue Injury
- Burns
- Head and Face Injuries
- Spine Injuries
- Thoracic Injuries
- Abdomen Injuries
- Musculoskeletal Injuries
- Injuries to the Abdomen and Genitourinary Tract
- Fractures, Dislocations, and Sprains
- Multiple Injuries: Summary of Advanced Trauma Life Support
- The Multi casualty Incident

## Medical Emergencies

- Respiratory Emergencies
- Cardiovascular Emergencies
- Unconscious States
- Neurologic Emergencies
- Endocrine Emergencies
- Allergic reactions
- Gastrointestinal Emergencies
- Renal and Urologic Emergencies
- Toxicology: Substance Abuse and poisoning
- Poisons, Drugs, and Alcohol
- Hematological Emergencies
- Acute Abdomen
- Anaphylaxis
- Infections and Communicable Diseases
- Behavioral emergencies
- Emergencies in the Elderly
- Pediatric Emergencies

### **Environmental Emergencies**

- Heat Exposure
- Cold Exposure
- Radiation Exposure
- Hazardous Materials

### **Special Considerations**

- Obstetrics
- Neonatal Care
- Gynecology
- Obstetrics and Emergency Childbirth
- Neonatal Care and Transport
- Gynecologic Emergencies
- Geriatric patients
- Abuse, Neglect and Assault
- Patients with special needs
- Acute Interventions for the Chronic Care patient

### **Responding to the call**

- Communications and dispatching
- Rescue and extrication

## **Non – Emergency patients**

- Non-emergency journey
- Outpatients
- Amputees and artificial limb patients
- General principles
- Patient positioning
- Lifting aids
- Blankets

## **Examinations and Assessment**

### **Pre-Hospital Special Procedures**

- Major incidents
- Civil disturbances
- Hazardous substances
- Managing violence
- Assisting the Paramedic

## **Operations**

- Ambulance Operations
- Medical Incident Command
- Terrorism and Weapons of Mass Destruction
- Rescue Awareness and Operations
- Hazardous Materials Incidents
- Crime Scene Awareness

## **Glucose Metabolism**

- ❖ Diabetes Mellitus
  - DKA
  - Hyper osmolar coma
  - Hypoglycemic syndrome

## **Environmental Disorders**

- ❖ Submersion Incidence
  - cold water immersion
  - near drowning
- ❖ Electrical Injury
  - electrical injury
  - lightning injury

- AC/DC injury
- High voltage
- ❖ High altitude illness
  - Acute mountain sickness
  - High altitude cerebral edema
  - High - altitude pulmonary edema
- ❖ Poisonous plants
- ❖ Smoke inhalation
- ❖ Temperature related illness
- ❖ Bites and sting

### Transfusions:

- Blood transfusion
- Autotransfusion
- Complications

### Systemic infectious disorders

### Nervous system disorders

- Cerebral blood flow to include the circle of Willis.
- Observation and Assessment
- Treatment and management of disorders of the nervous system.
- Transient ischemic attack
- Sub arachnoids hemorrhage
- Meningitis.

### Respiratory system

- Nervous and chemical control of respiration including hypoxic drive and the role of CO<sub>2</sub>
- Significant of volumetric lung capacities in relation to pulmonary volumes.
- Treatment and management of conditions of the respiratory system.

### Cardiovascular system

- Mechanisms of the cardiovascular system
- Location, structure and function of the electrical conduction systems of the heart.
- Electrical conductive pathway of the hear In relation to the normal sinus ECG

- Cardiac cycle
- Normal Sinus Rhythm
- Chemical and nervous control of the cardiovascular system.
- Shock
- Arrhythmias
- Left ventricular failure
- Angina

## Pediatrics Care

- Anatomical and physiological differences between adults and children
- Pediatrics assessment and examination and recognition of the seriously ill or deteriorating child.
- Management of the sick child and parents.
- Management of cardiac arrest in neonates, Infants and Children

## General and local organization of obstetrics and gynecology services.

- Anatomical and physiological changes during pregnancy
- Assessment and examination of the pregnant woman
- Normal Labour
- Abnormalities in pregnancy and Labour
- Resuscitation in pregnancy

## Haemodialysis

- Purpose of Haemodialysis
- Removal of patients of Haemodialysis

## Respiratory Procedures

- Tracheal Intubation
- Cricothyrotomy and Translaryngeal Jet Ventilation
- Tracheostomy Care and Tracheal Suctioning
- Noninvasive Assessment and Support of Oxygenation and Ventilation
- Mechanical Ventilation
- Thoracentesis

## Cardiac Procedures

- Cardio sinus Massage/Cardio version
- Defibrillation
- Emergency Transcutaneous Cardiac Pacing
- Pericardiocentesis and Intracardiac Injections

## Vascular Techniques and Volume Support

- Pediatric Vascular Access and Blood Sampling Techniques
- Peripheral Intravenous Access
- Central Venous Catheterization and Central Venous Pressure Monitoring
- Intraosseous Infusion
- Endotracheal Drug Administration
- Pneumatic Antishock Garment

## Soft Tissue Procedures

- Principles of wound Management
- Methods of wound Closure
- Skin Grafting in the Outpatient
- Burn care Procedures

## Gastrointestinal Procedures

- Esophageal Foreign Bodies
- Nasogastric and Feeding Tube Placement
- Decontamination of the Poisoned Patient

## Musculoskeletal Procedures

- Out of Hospital Splinting
- Management of Amputations
- Splinting Techniques
- Compartment Syndrome Evaluation

## Neurologic Procedures

- Management of Increased Intracranial Pressure

## Vital Sign Measurement

## Special Procedures

- ❖ Procedures Pertaining to Hypothermia
- Hyperthermia Procedures
- ❖ Universal Precautions

Stroke Algorithm

Cardiac Algorithm

Paediatric Scoring and Fluid Management

### **Recommended Books:**

1. ABC of Major Trauma – David Skinner, Peter Driscoll Richard Earlam.
2. Ambulance Services – IHCD
3. Emergency Care in the Streets – Nancy L.Caroline, M.D.,
4. ATLS – American college of surgeons
5. ACLS- AHA
6. ICU book by Paul Marino
7. Hand book of Critical care by Irwin rippe
8. Washington Manual of Critical care
9. Oh’s Intensive care Manual
- 10.Introduction to critical care nursing by Mary Lou Sole, Published by Elseiver

### **List of Journals**

1. Emergency medical journal BMJ
2. Canadian journal of emergency medicine
3. Annals of Emergency Medicine
4. Pediatric Emergency Medicine journals
5. Journal of Accident and Emergency Medicine
6. The American journal of Emergency Medicine

### **Practical:**

1. Basic ECG
2. Instruments handling
3. Basic Ventilatory Settings
4. Basic Ventilatory Settings
5. Airway and breathing skills( Intubation, LMA, Bag Mask Ventilation, Oral Airway, Needle Thoracocentesis, Upper Airway Obstruction, Chocking Management)
6. Skills related to circulation (Peripheral Venous Access, Central Venous Excess, Intraosseous Excess)
7. Arrhythmia recognition and management (Defibrillation, Cardio Version)
8. Arrhythmia recognition and management (Defibrillation, Cardio Version)
9. Pre hospital trauma care
10. Hands on demonstration related to trauma and critical care
11. OSCEs(Objective structured clinical examination)

## **FIRST YEAR**

### **PAPER I:**

#### **BASIC SCIENCES APPLIED TO TRAUMA AND EMERGENCY CARE**

**Course Outcome 1:** Knowledge in patient assessment

2: Knowledge in trauma

3: Knowledge in medical emergencies

4: Knowledge in environmental emergencies

5: Knowledge in special consideration in emergency

**Anatomy & Physiology** related to the following

1. Respiratory system
2. Cardiovascular system
3. Nervous system
4. Gastrointestinal system
5. Urology
6. Musculoskeletal system
7. Endocrinology
8. Fluid and Electrolytes

**Biochemistry and Pharmacology**

1. General Pharmacological principles
2. Respiratory system drugs and cardiovascular drugs
3. Drugs used in Anesthesia
4. Analgesics
5. Drugs acting on the kidney, Corticosteroids, Insulin

Microbiological aspects related to Critical Care Medicine

Pathophysiology of Critical Care diseases

Research and Biostatistics

Obstetrics & Paediatrics

Anatomical and Physiological Variations

Drugs contraindicated



## **FIRST YEAR**

### **PAPER II**

#### **GENERAL ASPECTS OF TRAUMA AND CRITICAL CARE**

**Course Outcome**1: Knowledge in responding to call

2: Knowledge in non-emergency patients

3: Knowledge in moving and lifting patients

4: Knowledge in environmental disorders

5: Knowledge in transfusion

#### **CRITICAL CARE MEDICINE**

##### **1 . MONITORING**

###### **Vitals and Physical Examinations**

###### **Hemodynamic -Arterial, Central Venous, PAC**

Ventilation – Invasive and Non Invasive

Arterial Blood Gas analysis in detail

ECG, Cardiac Rhythm and Arrhythmias

Intracranial Pressure Monitoring & Basics of ECG

##### **2 . PROCEDURES**

###### **Oxygen delivery devices**

###### **Non Invasive Ventilation**

###### **Endotracheal Intubation**

###### **Percutaneous Tracheostomy**

Chest tube insertion

Paracentesis – diagnosis and therapeutic

Pericardiocentesis & Pacemaker Insertions

Bronchoscopy

Cardioversion and Defibrillation

Lumber Puncture

**3 . Nutrition in the ICU – aspects of total Parenteral Nutrition (TPN), Ryles Tube insertion**

**and feeding**

**4 . Imaging in relation to Critical Care – X- ray, Ultrasound, ECHO, CT, MRI**

5 . End of life care, Ethics, Palliative care in the ICU

6 . Patients Safety in the ICU, Bed Utilisation and staffing models.

## **TRAUMA**

Epidemiology

**Trauma in special populations**

**Mechanisms of Trauma and Anatomy of related injuries**

**Triage in trauma**

Rehabilitation and Trauma

Quality indicators in Trauma

Imaging in relation to Trauma

X-Ray Ultrasound including FAST, CT, MRI

## **SECOND YEAR**

### **PAPER I**

#### **ADVANCED CRITICAL CARE MANAGEMENT**

**Course Outcome**1: Knowledge in cardiovascular system and respiratory system emergencies

2: Knowledge in neurological emergencies

3: Knowledge in paediatric emergencies

**Cardiac arrest Management**

**Post cardiac arrest care**

**Management of respiratory Disorders**

**Mechanical Ventilation**

Weaning protocols

Emergency aspects of Myocardial infarction

Management aspects of Myocardial infarction

Venous thromboembolism

Management of Electrolytes disturbances

Acid Base disorders  
Management of Endocrine disorders  
Management of Oncological Emergencies  
Toxicology in the ICU  
Infectious diseases  
Management of Renal Disorders  
Renal Replacement Therapy  
Gastrointestinal and Hepatic Diseases  
Management of Neurological disorders  
Management of Hematological and Oncological Disorders  
Transfusion practices in the ICU  
Management of transfusion reactions  
Transplant patient care in the ICU  
**Pregnancy and Critical care – Issues and Management**  
**Paediatrics and Critical care**  
Psychologic and psychiatric aspects of emergency medical management  
Recent advances in respect to Critical care

## **SECOND YEAR**

### **PAPER II**

#### **ADVANCED TRAUMA CARE AND MANAGEMENT**

- Course Outcome**1: Knowledge in advanced trauma management.  
2: Knowledge in procedures in emergency room.  
3: Recent advances in emergency medical technology and critical care.

#### **Pre – Hospital Trauma Management**

##### **ABCDE of Trauma**

##### **Thoracotomy**

##### **Head and Neck Trauma**

Spinal Trauma

Thoracic Trauma

Abdominal Trauma

Pelvic Trauma

Extremity Trauma

Ocular Trauma

ENT Bleeds and other emergencies

Post Trauma Care

Paediatric and Trauma

Geriatrics and Trauma

Trauma in Pregnancy  
Delivery en - route to hospital and non – institutional deliveries  
Transfusion Protocols  
Disaster Management  
Burns  
Military and Humanitarian Trauma  
Surgery after Trauma including preparation of the patient  
Crush injury

### **Trauma patients in the ICU**

#### **Advanced treatment options after trauma**

#### **Medico – legal aspects of Trauma**

Recent advances in respects to trauma  
PALS (Paediatric Advanced Life Support )  
ATLC (Advanced Trauma Life Support )  
ACLS (Advanced Cardiac Life Support )  
PHTLS ( Pre – Hospital Trauma Life Support)  
Emergency Medical Response  
Disaster Management  
Wilderness Emergency Medicine.

### **Research methodology**

Introduction to research methods, Variable in research, Reliability and validity in research, conducting a literature review Formulation of research problems and writing research questions, Hypothesis, Null and research Hypothesis, Type I and type II errors in hypothesis testing

Experimental and non- experimental research designs,

Sampling methods, data collection, observation method,

Interview method, questionnaires and schedules construction

Research Frame work: Ethical issues in research, Principles and concepts in research ethics- confidentiality and privacy informed consent, Writing research proposals, Development of conceptual framework in research

## MODEL PAPER

M.Sc. (Em. & TCT) – I

### M.Sc. Emergency and Trauma Care Technology Examination

#### Part - I

#### Paper I

#### Basic Science Applied to Trauma and Emergency Care

**Time: Three Hours**

**Maximum Marks: 100**

*Students shall be allowed to take only one supplementary copy long 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 answer at different places in the answer book*

**Attempt all Questions.**

- Q.1 Anatomy of blood supply of heart & conductive system of heart & cardiac cycle.  
25
- Q.2 Describe pathophysiology of Gas exchange & preparation of instruments require for  
difficult intubation.  
25
- Q.3 Long answers Type
- a) Anatomy & physiological changes during pregnancy. 12½
- b) Anatomy & physiology of paediatric respiratory system. 12½
- Q.4 Short Notes 5x5=25
- a) TRIAGE.
- b) Biomedical waste management.
- c) Describe 5 cardiac drugs used in emergency.
- d) Drug use to treat Hyperkalaemia in ED.
- e) Analgesic used in ED.

## MODEL PAPER

M.Sc (Em. & TCT) – I

### M.Sc. Emergency and Trauma Care Technology Examination

#### Part I

#### Paper-II

#### GENERAL ASPECTS OF TRAUMA AND CRITICAL CARE

**Time: Three Hour**

**Maximum Marks: 100**

*Students shall be allowed to take only one supplementary copy long 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 answer at different places in the answer book*

**Attempt all Questions.**

- |     |  |        |
|-----|--|--------|
| Q.1 | Describe Oxygen delivery device in ED & Monitoring.              | 25     |
| Q.2 | Describe Mechanism of trauma & Anatomy related injury.           | 25     |
| Q.3 | Long answers Type  |        |
|     | a) Describe Preparation of Chest tube insertion & post ICD care. | 12½    |
|     | b) Describe part of defibrillator. and How to use it ?           | 12½    |
| Q.4 | Short Notes  | 5x5=25 |
|     | a) Ryle's tube Insertion.  |        |
|     | b) Urinary catheter insertion.                                   |        |
|     | c) How to do ABG?  |        |
|     | d) How to shift intubated patient in CT Scan?                    |        |
|     | e) Describe Imaging  |        |

## MODEL PAPER

M.Sc. (Em. & TCT) – I

### M.Sc. Emergency and Trauma Care Technology Examination

#### Part II

##### Paper-I

#### ADVANCED CRITICAL CARE MANAGEMENT

**Time: Three Hours**

**Maximum Marks: 100**

*Students shall be allowed to take only one supplementary copy long 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 answer at different places in the answer book*

**Attempt all Questions.**

- Q.1 Define Shock, Classify Shock and explain pathophysiology of each shock with examples. 25
- Q.2 BLS, ACLS and post cardiac arrest care algorithm.. Differences in algorithm of adult, paediatric and pregnant cardiac arrest care management.
- Q.3 Write in brief about
- a) How to diagnose Metabolic Acidosis in ABG? What are the different casuses of it?  
And how will you manage these?
- b) What is RRT ( Renal Replacement Therapy ) ? Describe different Modalities of RRT. Give one example of it used in ED. 12½
- Q.4 Short Notes 5x5=25
- a) Upper Gastrointestinal Bleed.
- b) Organ Phosphorus Poisoning.
- c) Non Invasive Ventilation.
- d) DVT Prophylaxis.
- e) Define Sepsis. Describe recent Sepsis Guidelines.

## MODEL PAPER

M.Sc. Anes & CCT.– II

Short Name

### M.Sc. Emergency and Trauma Care Technology Examination

#### Part II

#### Paper II

#### ADVANCED TRAUMA CARE & MANAGEMENT

**Time: Three Hours**

**Maximum Marks: 100**

*Students shall be allowed to take only one supplementary copy long 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 answer at different places in the answer book*

**Attempt all Questions.**

- Q.1 Describe Primary Assessment in Trauma. How to evaluate chest trauma patient? 25  
And management of Haemorrhage shock.
- Q.2 Types of burn, How to calculate paediatric and adult burn percentage and management  
of burn patient.  
25
- Q.3 Write in brief about  
a) Disaster Management 12½  
b) Difference between Mass and Multiple Casualties. 12½
- Q.4 Short Notes 5x5=25  
a) Pre-Hospital evaluation in Neurological Emergencies.  
b) E –FAST in Emergency.  
c) Crush Injury.  
d) Pulse Oximetry.  
e) Massive Transfusion Protocol.