

Mahatma Gandhi University
of
Medical Sciences & Technology, Jaipur

Syllabus
B.Sc. Accident and Emergency Care
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. Accident and Emergency Care Technology (CODE)

(3 Years Degree Course)

Rules & Regulations

1. TITLE OF THE COURSE

The title of the course shall be "B.Sc. Accident and Emergency Care 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.

4. 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.

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 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 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. 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.

11. 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.

Theory Papers	Theory		Paper Set & Evaluated	
	Total Marks	Pass Marks	No. of Internal Paper Setters	No. of External Paper Setters
Ist Year: Three Theory Papers	300	150	3	-
IIInd Year: Three Theory Papers	300	150	3	-
IIIrd Year: Three Theory Papers	300	150	2	1

- (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.

ii. Practical and Viva-Voce Examination

- (a) Each year there shall be practical and viva-voce examination of 100 marks. It shall consist of one University practical exam of 70 marks and internal assessment of 30 marks. It shall be conducted after the Theory examination is over. A candidate will have to obtain at least 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. Course	Practical		Practical Examiners
	Total Marks	Pass Marks	
First Year	100	50	Two Internal Examiner(s)
Second Year	100	50	Two Internal
Third Year	100	50	One Internal & One External Examiner

iii. 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.

iv. 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.
- ii. 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.
- iii. 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.

v. 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
2. 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
3. The student is required to complete the course within 6 years from the joining of the course

vi. 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

12. 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

2. 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.
3. 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.

4. 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.
5. Non appearance of a candidate in any part of the examination will make him ineligible for grace marks.
6. A candidate who is awarded grace marks in any subject to pass the examination will not be entitled for distinction in any subject.
7. 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.

13. 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 requisite 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.
4. 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.
5. 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	1 st Attempt
2.	Candidate permitted in all subjects But did not appear in all permitted subjects	His attempt in the next examination will be treated as	1 st Attempt
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	2 nd Attempt

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	1 st Attempt
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	2 nd Attempt

Curriculum Outline

Distribution of Teaching hours

1ST Year B.Sc. Accident and Emergency Care Technology

Course Title	Hours
Anatomy	45
Physiology	50
Biochemistry	30
Computers	50
English	60
Introduction to Emergency Medicine and EMS	65
<u>Hospital Orientation (Practical)</u>	900
Total Hours	1200

2nd Year B.Sc. Accident and Emergency Care Technology

Course Title	Hours
Pathology	25
Clinical Microbiology	35
Pharmacology	20
Patients Examination and Nursing	50
Emergency Medicine and EMS - 1	70
<u>Practical exam on patient examination, Nursing, Triage, Life Support, Trauma care</u>	200+800
Total Hours	1200

3rd Year B.Sc. Accident and Emergency Care Technology

Course Title	Hours	
	Theory	Practical
Emergency Medicine and EMS - II	100	600
Clinical Procedures and Instrumentations in emergency services (Ambulance equipments)	100	200
Emergency Surgery	100	100
	300	900
Total Hours	1200	

SYLLABUS

B.Sc.- Accident and Emergency Care Technology

(3 Years Degree Course)

Learning Objectives:

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

1. Able to manage all emergency and routine trauma patients efficiently.
2. Able to assist the procedures performed in routine and urgent basis.
3. Able to provide adequate knowledge about the pre hospital care, transfer of the sick patients.
4. Able to transfer knowledge and skills to students as well as younger professionals.
5. Able to actively participate and also independently work in research in the field of advance trauma care and critical care /clinical research/trials and related areas.

Expectation from the future graduate in the providing patient care

1. The coursework is designed to train students to work in conjunction with emergency medicine department and save maximum lives in **golden hour** of the trauma and non trauma patients.
2. Course work includes basic applied sciences, emergency medicine services, patient examination and nursing , critical care of sick, research methodology, patient and data management, and teaching methodologies. The student will be skilled in management of patients, administration of prescribed emergency treatment, provision of patient support, and imparting education to students and young professionals in the field.

First Year

Theory Paper :

Paper-I - Anatomy, Physiology and Biochemistry

Paper-II – Introduction to Emergency Medicine and EMS

Paper I - Anatomy, Physiology and Biochemistry

ANATOMY

COURSE DESCRIPTION

This course enables the student to gain knowledge of the structure of the various organ systems in the body and use this knowledge to develop desirable attitude and skill while taking care of patients.

OBJECTIVES

At the end of the course, the student will develop

1. Describe the anatomical terms, organization of human - body and structure of cell, - tissues, membranes and glands
2. Describe the structure & functions of bones and joints
3. Describe the structure & functions of systems in the body.

Organization of the human body

- Introduction to the human body
- Definition and subdivision of anatomy
- Anatomical position and terminology
- Regions and systems of the body
- Cavities of the body and their contents
- Levels of organization of the body

COURSE CONTENT

1. **INTRODUCTION TO ANATOMICAL TERMS ORGANIZATION OF THE HUMAN BODY**
2. **OSTEOLOGY**
3. **THORAX**
4. **HEART**
5. **SKELETO-MUSCULAR SYSTEM**
6. **EXCRETORY SYSTEM**

PRACTICALS

Mannequins To Be Provided

Osteology – Bones identification (right and left side) and prominent features and muscle attachment of the bone, clavicle, scapula, radius, ulna, humerus, femur, hip bone, sacrum, tibia, and fibula. Surface Anatomy, Radiology, and X-ray Chest PA view.

Recommended Books:

1. Cohen – Memmler's Structure & Function of Human Body, 2009, LWW.
2. Waugh – Ross & Wilson Anatomy & Physiology, 2008, Elsevier.
3. Tortora – Anatomy & Physiology, 2007, Wiley
4. Chaurasia – Human Anatomy, 2005, CBS Publishers
5. Standring - Gray's Anatomy, 2006, Elsevier

PHYSIOLOGY

DESCRIPTION

The Course is designed to assist the students to acquire knowledge of the normal physiology of various human body systems and understand the alterations in physiology in diseases and for practice of Critical Care Technology.

OBJECTIVES

At the end of the course, the student will develop

1. Describe the physiology of cell, tissues, membranes and glands
2. Describe the physiology blood and functions of Heart
3. Demonstrate blood cell count, coagulation, grouping, Hb: BP and Pulse monitoring

4. Describe the physiology and mechanism of respiration
5. Demonstrate spirometry
6. Describe the physiology of Excretory system

1. **THE CELL**
2. **CARDIO-VASCULAR SYSTEM**
3. **RESPIRATORY SYSTEM**
4. **EXCRETORY SYSTEM**
5. **REPRODUCTIVE SYSTEM**
6. **CENTRAL NERVOUS SYSTEM**
7. **ENDOCRINE SYSTEM**
8. **DIGESTIVE SYSTEM**

PRACTICAL

1. The compound Microscope
2. Determination of ESR-By Westergren's method
3. Determination of Blood Groups.
4. Measurement of human Blood Pressure.
5. Examination of Respiratory System to count Respiratory Rate and measure inspiration and expiration

RECOMMENDED BOOKS

1. Waugh – Ross & Wilson Anatomy & Physiology, 2008, Elsevier.
2. Essentials of Medical Physiology K.Sembulingam -4th edition
3. Essentials of Medical Physiology, Anil Baran Singh Mahapatra, Publisher Current Books International
4. Venkatesh – Basic Medical Physiology for Nursing, 2009, LWW
5. Tortora – Anatomy & Physiology, 2007, Wiley
6. Venkatesh – Basic Medical Physiology, 2009, LWW

BIO – CHEMISTRY

COURSE DESCRIPTIONS

The student understands the chemical processes that occur in living organisms and correlates their knowledge with the patients illness and the various diagnostic and therapeutic procedures instituted for patient treatment.

OBJECTIVES

At the end of the course, the student will

1. Identify the basic principles of Biochemistry and Biophysics
2. Synthesize the knowledge of these principles in various situations

COURSE CONTENT

1. **CARBOHYDRATES**
2. **PROTEINS**
3. **LIPIDS**
4. **ENZYMES**
5. **VITAMINS & MINERALS**
6. **ACIDS AND BASES**

PRACTICALS

- Benedict's test
- Heat coagulation tests

REFERENCE

1. V. Sathya Narayanan "Essentials of Biochemistry" - sBooks and Allied Publications Ltd, Kolkatta (2002)
2. Ambika Shanmugam, Fundamentals of Biochemistry" 7 Ed, Kartik Offset Printers, Chennai, 1998.

Paper-II – Introduction to Emergency Medicine and EMS

Introduction to Emergency Medicine and EMS

COURSE DESCRIPTION

This course is designed to help the students to develop an understanding of the philosophy, objectives, theories and process of accident and emergency care technology in various Supervised Clinical settings. It is aimed at helping the students to acquire knowledge, understanding and skills in techniques of practice them in Supervised Clinical settings.

COURSE CONTENT

1. INTRODUCTION TO EM

- History of Emergency Medicine
- Understanding Emergency Medicine (the specialty, Its pros & cons)
- Training in Emergency Medicine
- Scope of the emergency ambulance service
- Definition and nature of emergency call and urgent calls
- Standards of performance for emergency calls and urgent calls
- Arrangements for dealing with major incidents
- Contracts and purchasing arrangements for patient transport services
- Responding to the call
 - Communications and dispatching
 - Rescue and extrication
- Mobility of patients
- Non-emergency patient categories
- Arrangements for conveying escorts
- Quality standards typically applied to Patient Transport Services
- National and local patient charters
- Function of ambulance control
- Ambulance communications system
- Patient transport requests are received, planned and allocated and ambulance vehicles are deployed
- Importance of cooperation and network between control staff and ambulance crews

2. HOSPITALS & PATIENTS: ORIENTATION

- History
- Classification
- Organization & structure
- Departments & Team
- Paramedical Staff
- Ancillary departments
 - Lab
 - Pharmacy
 - Imaging
 - Physio/speech/
 - Patient support services
 - Admission
 - Medical insurance
 - Dietary
- Health information management
 - Medical records
 - Electronic Medical Records
 - Medico-legal issues

3. EMERGENCY MEDICAL SERVICES (EMS)

- History and current trends
- Pre-hospital transport
- Roles & responsibilities
- Legal issues
- Principles of life support

4. HEALTH ASSESSMENT

- Purposes
- Process of Health assessment
 - Health history
 - Physical examination:
 - Methods- inspection, Palpation, Percussion, Auscultation and Olfaction
- Preparation for examination: patient and unit
- General assessment
- Assessment of each body System
- Recording of health assessment

5. FIRST AID AND EMERGENCIES

- Wounds, hemorrhage, shock
- Fracture, dislocations, muscle injuries
- Respiratory emergencies, unconsciousness
- Burs, scalds, foreign bodies in the skin, eye, ear, nose, throat, stomach
- Frost bite, effects of heat, cramps, bites and stings
- Poisoning
- Lifting and transporting injured persons
- Bandaging

Second Year

Theory Paper :

Paper I - Pathology and Microbiology and Pharmacology

Paper II – Patient Examination, Nursing

Paper III - Emergency Medicine and Emergency Medical Services – II

Paper I - Pathology and Microbiology and Pharmacology

PATHOLOGY

COURSE DESCRIPTION

This course is designed to enable students to acquire knowledge of pathology of various disease conditions and apply this knowledge in practice of Accident and Emergency Care Technology.

COURSE CONTENT

- 1. INTRODUCTION – CELL**
- 2. INFLAMMATION**
- 3. IMMUNITY DISORDERS**
- 4. INFECTIOUS DISEASES**
- 5. NEOPLASIA**
- 6. ENVIRONMENTAL AND NUTRITIONAL DISORDERS.**

PRACTICALS

1. Bleeding time
2. Clotting time
3. Blood grouping
4. Urine analysis by dipstick method

RECOMMENDED BOOK

1. Text book of pathology Harsh mohan -6th edition

MICROBIOLOGY

COURSE DESCRIPTION

This course is designed to enable students to acquire understanding of fundamentals of Microbiology and identification of various micro-organisms. It also provides opportunities for practicing infection control measures in hospital settings.

OBJECTIVES

At the end of the course, the student will

1. Identify common disease producing micro-organisms.
2. Explain the basic principles of microbiology and their significance in health and disease.
3. Demonstrate skill in handling specimens
4. Explain various methods of disinfection and sterilization
5. Identify the role of the nurse in hospital infection control system

COURSE CONTENT

1. INTRODUCTION

2. GENERAL CHARACTERISTICS OF MICROBES

PRACTICAL

- Use and care of microscope
- Common examination: smear, Blood, Moulds and Yeasts.

3. CLINICAL MICROBIOLOGY AND INFECTION CONTROL

- INTRODUCTION - Importance of infection in an ICU, Agents causing Infection
- SPREAD OF INFECTION Source; host; transmission, Biohazardous materials
- INFECTION CONTROL & UNIVERSAL PRECAUTIONS
 - o Sterilisation & Disinfection - concepts
 - o Methods of sterilization

- o Spread of infection
- o Elimination of source - Cleaning and sterilizing equipments
- o Interrupting transmission of infection - role of Health Care Workers
- o Disposal of infectious wastes
- o Surveillance; quality control

• SPECIFIC INFECTIONS

Nosocomial Infections: Types - Prevention.

- o HIV-AIDS
- o Hepatitis A, B, C
- o Tropical Infections - Tetanus, Malaria, Leptospirosis, Dengue, Rickettsial, Amoebiasis Sepsis

PRACTICALS

- Each Student will practice in the laboratory as indicated in each unit of the courses outline. While giving care in the wards they will practice collection and processing of sterilization, immunization, chemotherapy and maintenance of personal and environmental hygiene.
- Observation visit to incinerator, posting in CSSD and infection control department.

REFERENCES

1. Ananthanarayanan R. "Text Book of Microbiology", Bombay, Orient Jaym Panickat, C. K. Longman, 1981
2. Probisher, "Fundamentals of Microbiology", Philadelphia, W. B. Saunders Co., 1952.
3. Stewai, Beswick — Bacteriology, Virology, Immunity" London> The English Language Book Society, 1977.
4. Wilson, M. E. Helen Eckel Mizer and Josephine A Mo cue "Microbiology in Patient Care", U.S.A., Mac Milan Co., 1979

PHARMACOLOGY

COURSE DESCRIPTION

This course is designed to introduce the concepts of drugs used in Accident and Emergency care technology.

COURSE CONTENT

1. INTRODUCTION TO PHARMACOLOGY

- Definitions
- Sources
- Common Terminologies used
- Types / Classification
- Pharmacodynamics: Actions, Therapeutics,
- Adverse Effect, Toxic Effect
- Pharmacokinetics: Absorption, Distribution, Metabolism, Interaction, Excretion
- Review: Routes and principles of administration of drugs
- Indian Pharmacopoeia(IP): Legal issues
- Rational use of drugs
- Principles of therapeutics

2. CLINICAL PHARMACOLOGY

- Drugs – Nomenclature
- Mode of action of drugs
- Routes of administration
- Drug dose calculation - Dilution, infusion rate
- Medical gases: O₂ ; N₂O
- Bronchodilators
- Mucokinetic agents
- Antihistamines
- Steroids
- Drugs affecting Autonomic Nervous System
- Isotropic agents, Chronotropic agents,
- Vasopressors & Vasodilators
- Anti-Hypertensive
- Analgesics; Sedatives
- Neuromuscular Blocking agents
- Antimicrobial drugs, Anti Viral and Anti Fungal agents - basic concepts - Antimicrobial Resistance
- Antiseptic agents

1. DRUGS USED FOR CENTRAL NERVOUS SYSTEM

2. DRUGS USED FOR AUTONOMIC NERVOUS SYSTEM

3. DRUGS USED FOR CARDIOVASCULAR SYSTEM

4. DRUGS USED FOR ENDOCRINE AND METABOLIC DISORDERS:

5. **DRUGS USED FOR RESPIRATORY SYSTEM AND**
6. **DRUGS USED FOR GASTRO INTESTINAL SYSTEM**
7. **GENERAL PRINCIPLES FOR THE TREATMENT OF POISONING**

PRACTICALS

- Drugs identification (spotters)
- Identification of drugs by chemical test, poisoning symptoms & treatment
- Route of drug administration

RECOMMENDED BOOKS

1. Essentials of Medical Pharmacology-K.D.Tripathi -6th edition
2. Pharmacology and Pharmacotherapeutics-R.S.Satoskar-revised 19th edition

Paper II – Patient Examination, Nursing

PATIENT EXAMINATION AND NURSING

COURSE DESCRIPTION

This course is designed to help the students to develop an understanding of the philosophy, objectives, theories and process of nursing in various Supervised Clinical settings. It is aimed at helping the students to acquire knowledge, understanding and skills in techniques of accident and Emergency care technology and practice them in Supervised Clinical settings.

OBJECTIVES

Students are able to:

- Understand the basic principles of nursing
- Describe the historical development of nursing in India.
- Demonstrate the beginning skill for effective communication
- Meet the needs of the patient in relation to comfort, rest and sleep including hygienic needs
- Demonstrate skill in applying nursing care related to vital signs
- Render first aid treatment
- Demonstrate the teaching skills while educating the patient, family and community.

1. INTRODUCTION - PUBLIC HEALTH

- Importance of Community Medicine
- Modes of Transmission of Diseases
- Principles of Prevention & Control of Diseases
- Hospital infections, disinfection, disinfection and sterilization

- Disposal of Hospital wastes
- Important Communicable diseases - – Respiratory, Intestinal; contact – STD / AIDS Health education

2. INDIVIDUAL PATIENT CARE

- The Art of History taking
- Physical examination (GPE & different systems)
- The Unconscious patient
- Diagnosis of Brain death

3. INTRODUCTION TO HEALTH AND HEALTH CARE SYSTEM

- Definition and concepts of terms health, illness, mobility, mortality, patient
- Health, its philosophy and dimensions
- Nature of disease pattern
- Impact of illness on individual, family and community
- Hospital (settings type and functions)
- Functions of a nurse
- Factors influencing health

4. ADMISSION OF PATIENTS

- Preparation of unit
- Admission procedure
- Medico legal issues

5. COMMUNICATION SKILLS

6. COMFORT REST AND SLEEP NEEDS

7. HYGIENE NEEDS

8. HOUSE KEEPING

9. VITAL SIGNS

10. FIRST AID AND NURSING EMERGENCIES

- Principles of first aid management
- Wounds, haemorrhage, shock
- Fracture, dislocations, muscle injuries
- Splinting
- Respiratory emergencies, unconsciousness
- Burns, scalds, foreign bodies in the skin, eye, ear, nose, throat, stomach
- Frost bite, effects of heat cramps, bites and stings
- Poisoning

- Lifting and transporting injured persons
- Bandaging
- Cardiopulmonary resuscitation
- Physical assessment

11. FLUID AND ELECTROLYTE BALANCE

12. BODY MECHANICS

13. INFECTION CONTROL

14. HEALTH EDUCATION

PRACTICALS

Use of comfort devices. Bandaging, Lifting and transporting of injured persons and CPR

RECOMMENDED BOOKS

1. First Aid - The authorised manual of St. John's Ambulance Association and St. Andrew Ambulances Association. The British Redcross Society, Published by St. John's Ambulance Association
2. Handerson Virginia and Nite Gladys "Principles and Practise of Nursing".
3. Kozier - Dugas, "Introduction to Patient Care.
4. Mac. Clein Esther and Cragg Sherley, Scientific Principles, in Nursing, C.V.Mosby Co, St Lours,
5. Malesanos et.al, Health Assessment, The C.V.Mosby Co., Toronto .
6. Notter / Spalding, "Professional Nursing Foundations Perspectives and Relationship"
7. Patricia A. Potter et.al, "Fundamentals of Nursing", Toronto, The C.V.Mosby Co.

Paper III - Emergency Medicine and Emergency Medical Services – II

EMERGENCY MEDICINE AND EMERGENCY MEDICAL SERVICES - II

COURSE DESCRIPTION

This course is designed to help the students to develop an understanding of the philosophy, objectives, theories and process of accident and emergency care technology in various Supervised Clinical settings. It is aimed at helping the students to acquire knowledge, understanding and skills in techniques of practice them in Supervised Clinical settings

1. TRIAGE AND GENERAL EMERGENCIES

- Concepts and principles of Disaster Nursing
- Causes and Types of Disaster:
 - Natural and Man-made
 - Earthquakes, Floods, Epidemics, Cyclones Fire, Explosion, Accidents Violence, Terrorism
 - bio- chemical, War
- Policies related to emergency/disaster management; International, national, state institutional
- Disaster preparedness:
- Team, Guidelines, protocols, Equipments Resources
- Coordination and involvement of; Community, various govt. departments, non- Government.
- Organizations and International agencies
- Legal Aspects of Disaster
- Impact on Health and after effects; Post Traumatic Stress Disorder
- Rehabilitation; physical, psychosocial, Financial, Relocation
- Concept, priorities, principles and Scope of emergency care
- Organization of emergency services: physical setup, staffing, equipment and supplies, protocols, Concepts of triage and role of triage person
- Coordination and involvement of different departments and facilities
- Principles of emergency management
- Hospital infection
- Shock/ Dehydration
- Hypoglycemia/ hyperglycemia
- Anaphylaxis/Allergy

2. LIFE SUPPORT & RESUSCITATION

- Basic life support in perspective
- Cardiopulmonary function and actions for survival
- Adult Basic life support
- Pediatric Basic Life support
- Special resuscitation situations
- Safety during CPR training and actual rescue

- Risk factors and prudent heart living

3. BASIC PRINCIPLES OF TRAUMA CARE

- The principles of kinetic energy Mechanism.
- Primary survey and prioritise patient management as necessary
- Secondary survey as appropriate
- Re-assessment
- Revised trauma score, Glasgow Coma Score
- The upper airway
- Chest injuries
- Hypovolaemic shock
- Head injuries
- Maxillofacial injuries
- Spine and spinal cord
- Abdomen
- The urinary tract
- Limb injuries
- Handling distressed relatives breaking bad news
- Trauma in pregnancy
- Paediatric trauma
- Trauma in elderly
- Prehospital care
- Transportation to hospital
- Management of severe burns
- Chemical incidents
- Blast and gunshot injuries
- Trauma in hostile environments
- Major incidents
- Chest trauma
- Abdominal trauma

4. COMMUNITY MEDICINE

- Importance of Community Medicine; Definitions of various terms
- Modes of transmission of diseases
- Principles of prevention and control of diseases
- Hospital infections, disinfection, disinfestation, & Sterilization
- Disposal of hospital wastes
- Important communicable diseases - Respiratory; Intestinal; contact - STD / AIDS

PRACTICALS

1. Spine Immobilisation, scoop board, Splinting and Sling using of cervical collar procedure

Procedure for using spine board with strapping

Procedure to perform log roll and what is the use of performing a log roll

Method of using : Wooden splints

Triangular bandage (including as sling)

Uses and complications of splint

2. Use of Roller Bandage

Elbow and knee bandage

Hand and Foot bandage

Eye bandage

Ear bandage

Jaw bandage

Neck bandage

Shoulder spica

Thumb spica

Reef Knots)

3. Management of a Trauma Victim (Primary survey and Secondary survey)

Third Year

Theory Paper :

Paper I - Emergency Medical Services

Paper II - Clinical Procedures and Instrumentation Emergency Services

Paper III - Emergency Surgery

Paper I - Emergency Medical Services

EMERGENCY MEDICAL SERVICES

COURSE DESCRIPTION

This course is designed to help the students to develop an understanding of the philosophy, objectives, theories and process of accident and emergency care technology in various Supervised Clinical settings. It is aimed at helping the students to acquire knowledge, understanding and skills in techniques of practice them in Supervised Clinical settings.

1. Medical emergencies

- Hypoglycemia
- Hyperglycemia
- Poisoning
- Anaphylaxis
- Hypothermia
- Hyperthermia
- Mental illness

2. Fluids and electrolytes

- Fluid administration
- Formulas
- Electrolyte imbalance

3. Acid base emergencies

4. Respiratory Emergencies

- Chronic obstructive pulmonary disease (COPD)
- Asthma
- Pneumonia,
- Pulmonary edema
- Common medication in respiratory problems
- (Meter dose inhaler, nebuliser)
- Mechanical ventilator

5. Gastrointestinal Emergencies

- Abdominal pain
- Peptic ulcer disease
- Cholecystitis
- Hepatitis
- Pancreatitis
- Abdominal aortic aneurysm
- Bowel obstruction
- Hernias
- Gastro intestinal bleeding

6. Cardiovascular Emergencies

- Angina pectoris
- Myocardial infarction (MI), Thrombolytic Therapy
- Congestive Cardiac Failure (CCF)
- Aortic Aneurysm
- Hypertensive Emergencies
- Cardiac Arrhythmias
- 12 lead ECG
- Heart Block

7. Central Nervous System Emergencies

- Meningitis

- Stroke
- Seizure
- Status epileptics
- Syncope
- Subarachnoid hemorrhage
- Epidural hemorrhage

8. Genito urinary emergencies

- Renal failure
- Urolithiasis
- Urinary tract infection
- Haematuria

9. Hematological Disorders

- Red blood cell disorders
- Anemia – Aplastic
 - Hemolytic
 - Hypochronic / Microcytic
 - Megaloblastic
 - Normochromic normocytic
 - Hemoglobinopathies
 - (Sickle cell disease / trait, Thalessemia)
- Polycythemia
- White blood disorders
- Platelet abnormalities

10. Endocrine and Metabolic Emergencies

- Diabetic Ketoacidosis
- Hyperosmolar coma
- Thyroid crisis
- Diabetes insipidus
- Vomiting

- Diarrhea

11. Emergency Drugs - Drug introduction, indication, contra-indications, side – effects and routes of administration with doses of following drugs

Adrenaline (Epinephrine)

- Aspirin
- Atropine
- Amiodarone
- Antiarrhythmic
- Antidotes
- Benzylpenicilin
- Beta blockers
- Calcium channel blockers
- Calcium chloride
- Calcium gluconate
- Chlorpromazine
- Diazepam
- Dexamethasone
- Dextrose
- Dopamine
- Dobutamine
- Furosemide
- Flumazenil
- Fentanyl
- Glucagon
- Glyceryl trinitrate
- Hydrocortisone
- Lidocaine
- Lorazepam
- Mannitol
- Morphine Sulphate

- Midazolam
- Naloxone hydrochloride
- Norepinephrine
- Phenytoin
- Paracetamol
- Salbutamol
- Sodab carbonate
- Vasopressors
- Drugs in obstetrics
- IV fluids

12. Dermatological Emergencies

- Virus infections
 - Varicella
 - Herpes zoster
 - Acute leprosy reactions
- Autoimmune disorders
 - Pemphigus vulgaris
 - Systemic lupus erythematosus
- Toxic disorders
 - Acute erythroderma
 - Dermatitis venenata
 - Severe pruritus,
 - Scabies
 - Allergic reactions

13. Communicable disease

a. Causative organism, Mode of transmission, Signs and symptoms, Prophylaxis, Investigation and common treatment of following diseases: Meningitis, Hepatitis, Malaria, Tuberculosis, Dengue. Acquired Immunodeficiency syndrome (AIDS), Typhoid, Plague, Polio, Tetanus, Chicken pox, Cholera, Measles, Category: - III infection, control measures, precautions during transfer

14. Toxicology

Define the term poison

The four ways in which a poison may enter the body

General principles of assessment and management of poison and overdose

- Opiates toxicity
- Organophosphates
- Carbonmonoxide
- Cyanide
- Caustics
- Coppersulphate
- Digoxin toxicity
- Hydrocarbons
- Tricyclic toxicity
- Metals
- Acetaminophen overdose
- Poisonous alcohols
- Poisonous plants

15. Emergencies due to venomous bites and stings

- Snake bite
- Scorpion stings
- Spider bite
- Bee and wasp stings
- Fish stings
- Dog bite
- Cat bite
- Leech bite
- Human bite

16. Natural disasters

- Earthquakes
- Tornadoes

- Hurricanes
- Winter storm
- Floods
- Firestorm and wildfires
- Tsunamis
- Volcanic eruptions
- Heat related disasters

17. Manmade disasters

- Hazardous material emergencies
- Radiation injuries
- Air crash disaster
- Maritime disasters
- Derailing
- Terrorist bombing
- Fire and burn care
- Chemical disasters
- Biologic weapons
- Mass shooting

18. Industrial Hazards

- Electrocution
- Amputation
- Crush injury
- Fall from height
- Assaults

19. Obstetrical emergencies

- Pre eclampsia
- Placenta praevia

- Post Partum Hemorrhage
- Amniotic fluid embolism
- Cord prolapse

20. MENTAL HEALTH EMERGENCIES

- Aggressive patient
- Suicide
- Deliberate self-harm

21. Paediatric emergencies

- Neonatal resuscitation
- Pediatric resuscitation
- Assessment of newborn and pediatric
- Meconium aspiration
- Diaphragmatic hernia
- Apnea
- Drowning
- SIDS (Sudden infant Death Syndrome)
- Hypoglycemia,
- DKA
- Dehydration
- Fluid therapy
- Foreign body obstruction
- Asphyxia neonatorum
 - ○ Neonatal Seizure
 - ○ Febrile convulsion
- Shock
- Arrhythmias

PRACTICALS

1. Triage (Evaluation and Management)
2. Removal of Crash Helmet
3. Wireless Communication
4. Demonstrate in simulated situations, the techniques of management of a variety of poisoning.
[Knowledge about Activated charcoal, sorbitol, Atropine, PAM, Naloxone, Neurobion, Ryle's tube, Foley's catheter, Kidney tray, Gastric Lavage tube, Antisnake venom (ASV)]
5. Environmental emergencies
6. History taking, Examination and Presentation of Paediatric Case
7. Spotters
8. Emergency Drugs
9. ABG,ECG Interpretation
10. IM ,IV injection

RECOMMENDED BOOKS

1. Gold Franks Toxicologic Emergencies 8th edition, Neal E. Flomenbaum,Lewis R. Goldfrank-Mc Graw Hill
2. Emergency medicine-2nd edition,Plantz ,Wipfler-Lippincott Williams And Wilkins
3. Rosens emergency medicine-7th edition Marx ,Hockberger Walls, Adams-Mosby Elsevier
4. Adams emergency medicine,Adams,Erick D.Barton-Saunders Elsevier
5. Emergency medicine- 5th edition, Judith E. Tintinalli-Mc Graw Hill
6. Nancy Caroline's emergency care in streets 6th edition, Editor Andrew N. Pollak Jones and Bartlett
7. Nelson Textbook of paediatrics 18th edition ,Kliegman ,Behrman,Jenson-Saunders Elsevier
8. Care of new born –6th edition,Meharban Singh-Sagar
9. Essential Pediatrics-7th edition O.P. Ghai, Vinod K.Paul-CBS publisher
10. . IAP book of pediatrics,3rd edition, A.Parthasarathy, Nair-Jaypee
11. Disaster medicine –2nd edition David E .Hogan, Jonathan-Lippincott Williams and Wilkins
12. Rosens emergency medicine-7th edition Marx ,Hockberger Walls, Adams-Mosby Elsevier

Paper II - Clinical Procedures and Instrumentation Emergency Services

CLINICAL PROCEDURES AND INSTRUMENTATION EMERGENCY SERVICES

COURSE DESCRIPTION

This course is designed to help the students to develop an understanding of the philosophy, objectives, theories and process of accident and emergency care technology in various Supervised Clinical settings. It is aimed at helping the students to acquire knowledge; understanding and skills in techniques of practice them in Supervised Clinical settings

1. INSTRUMENTATION IN EMERGENCY SERVICES

- Introduction to Biomedical engineering (Man – machine relationship)
- ECG
- DC Defibrillator
- Intravenous pumps
- Laryngoscope, ambubag, suction machine
- SPO2 monitoring, Temperature monitoring
- BP apparatus, BP monitoring-NIBP, IBP
- Ventilators-Intensive care, portable
- Power generation, transmission & distribution
- Manual resuscitator
- Radiology equipment & radiation hazards
- Suction machine
- Nebuliser
- Medical gases
- Ambulance and its power supply
- Dialysis machine
- Infant warmer & incubator

2. CLINICAL PROCEDURES IN EMERGENCY ROOM

Vital Sign Measurement:

- Pulse assessment

- Respiratory assessment
- Temperature assessment
- Blood pressure assessment

Respiratory procedures

- Endotracheal intubation and extubation
- Drugs through ET tube
- Tracheostomy insertion and management
- Suctioning an artificial airway
- Nasotracheal suctioning
- Insertion of nasopharyngeal and oropharyngeal airway
- Mechanical ventilation
- Intercostal drainage
- Thoracentesis

Intermediate Airways

- Esophageal Obturator Airway
- Laryngeal Mask Airway
- Esophageal – Tracheal Combitube

Non invasive Assessment and Support of Oxygenation and Ventilation

- Pulse oximetry
- Carbon dioxide Monitoring --> Capnometry
- Oxygen therapy
- Delivery systems for Inhaled Medication
 - a.** Nebulizers
 - b.** Metered Dose Inhaler

Cardiovascular procedures

- Cardiac Monitoring
- Central venous pressure monitoring
- Insertion of Arterial line:
- Central venous cannulation
- Transcutaneous cardiac pacing
- Transvenous cardiac pacing
- Pericardiocentesis

- Cardioversion
- Defibrillation

Intraosseous Infusion

- Indication
- Procedure
- Drugs through umbilical vein
- Complication

Gastrointestinal procedures

- Insertion of nasogastric tube
- Insertion of enteral feeding tube and initiation of feedings.
- Gastric lavage
- Upper gastrointestinal endoscopy
- Insertion of rectal tube
- Paracentesis
- Peritoneal lavage

Poison decontamination

- Ipecac induced emesis
- Activated charcoal
- Whole bowel irrigation

Genitourinary procedures

- Urethral catheterization
- Peritoneal dialysis
- Placement and Management of external Arteriovenous shunt.
- Continuous Arteriovenous hemofiltration

Intravenous Therapy

- Insertion of intravenous catheter
- Administration of parenteral nutrition
- Blood administration

Neurologic Procedures

- Lumbar Puncture

3. DIGESTIVE SYSTEM

- Acute abdominal problems
- Pathophysiology
- Management
- Abdominal trauma

4. RESPIRATORY SYSTEM

- Respiratory arrest
- Respiratory diseases
- Pathophysiology
- Management
- Chest trauma

5. CIRCULATORY SYSTEM

- Structure of heart (Including function)
- Blood vessels
- Arterial and venous distribution in body
- Pathophysiology
- Heart sound
- Blood pressure and cardiac output
- Cardiac cycle
- Electrocardiograph (ECG)
- Electrical conducting system
- Cardiac diseases
- Shock
- Cardiac arrest
- Management

6. CENTRAL NERVOUS SYSTEM

- Functional area of brain and reflex
- Anatomy of spinal cord
- Cranial nerves
- Spinal nerves
- Sympathetic and parasympathetic outflow
- Impulse conduction
- Structure of neuron
- Degeneration and regeneration of nerve fibers
- Cerebral blood flow
- Unconscious patient
- Syncope
- Epilepsy
- Meningitis
- Cerebro vascular accident
- Head injury
- Spinal trauma
- Maxillofacial injury
- Pathophysiology
- Management

7. MEDICAL EMERGENCIES

- Hypoglycemia
- Hyperglycemia
- Poisoning
- Anaphylaxis
- Hypothermia
- Hyperthermia
- Mental illness

PRACTICALS

- Power supply testing

- Fuses testing
- Spot identification
- Thermometer
- BP apparatus
- Stethoscope
- Glucometer
- Intraosseous infusion
- LMA
- Combitube
- ET intubation
- Nebuliser
- Ventilator
- Capnography
- Pulseoximeter

RECOMMENDED BOOKS

1. Paramedic practice today above and beyond- Barbara-Mosby Elsevier
2. Mosbys paramedic textbook,3rd edition ,Mosbys Mick J.Sanders –Mosby Elsevier
3. Rosens emergency medicine-7th edition Marx ,Hockberger Walls, Adams Mosby Elsevier
4. Essentials of Medical Pharmacology, 6th edition ,K.D.Tripathi-Jaypee
5. Clinical Procedure in Emergency Medicine by “Robert & Hedges”-Saunders
6. Nancy Caroline’s emergency care in streets 6th edition, Editor Andrew N. Pollak Jones and Bartlett publishers

Paper III - Emergency Surgery

EMERGENCY SURGERY

OBJECTIVES

The student should gain knowledge and recognition of major abdominal illness and trauma, ask for relevant investigations, so as to avoid any delay in resuscitation.

1. PRINCIPLES OF ANAESTHESIA

- General Anaesthesia
- Local Anaesthesia
- Regional Anaesthesia

2. WOUNDS AND SUTURING

- Types of common wounds
- Treatment
- Cleansing the wound
- Wound healing
- Principles of incision and closure (including suturing)

3. BURNS

- Classification of Burn
- Special Burn considerations

4. ACUTE ABDOMINAL PAIN

5. ESOPHAGEAL OBSTRUCTION AND FOREIGN BODIES

- Site
- Radiographic consideration
- Esophageal pharmacologic Maneuvers
- Foley catheter manipulation of Esophageal Foreign Bodies
- Special situations: Fish Bones in the Throat
 - Button Battery ingestion
 - Childhood coin ingestion

6. GASTROINTESTINAL BLEEDING

- Upper GI Bleed
- Lower GI Bleed

7. STOMACH

8. CHOLECYSTITIS

9. PANCREAS

- Acute Pancreatitis
- Chronic Pancreatitis

10. GASTROINTESTINAL TRACT

11. APPENDIX

- Acute Appendicitis

12. INTESTINAL OBSTRUCTION

13. ABDOMINAL TRAUMA

- Solid viscus injuries (Liver, Spleen, Kidney)
- Hollow viscus injuries (Intestines, Urinary bladder)
- Vascular injuries in the abdomen
- Diaphragmatic rupture
- Evisceration
- Mesenteric avulsion, Hematoma

14. ANORECTAL DISORDERS

15. RENAL COLIC

16. TORSION TESTIS

17. SPECIAL EMERGENCY SURGICAL PROCEDURES

PRACTICALS

Assisting in various procedures like:

- Central Venous Access
 - Suturing of Wounds
- Tracheostomy
 - Intercostal Drainage
 - Needle Thoracocentesis
 - Cricothyrotomy

RECOMMENDED BOOKS:

- 1) A manual on clinical surgery, 7th edition S Das-Dr.S.Das
- 2) Manipal manual of Surgery, 2nd edition, K.Rajgopal Shenoy-CBS Publishers

MODEL PAPER

B.Sc. Ac. & ECT.-I
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-I (Main) Examination Month Year

Paper - I **Anatomy, Physiology and Biochemistry**

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 Give an account of femoral triangle under the following headings. Location, boundaries and contents. Write in detail about femoral artery 15
- Q.2 Define erythropoiesis. Discuss its various stages of development. Add a note on anaemia. 15
- Q.3 Write Notes on
- a) Kwashiorkor. 10
 - b) Muscles of Anterior compartment of Fore Arm 10
- Q.4 Short Notes (any 4 out of 6) 4x5=20
- a) Protein energy malnutrition.
 - b) Surface anatomy of heart.
 - c) Acidosis and Alkalosis.
 - d) Name the parts of cerebral cortex.
 - e) Thoracic vertebrae.
 - f) Intercostal space.

MODEL PAPER

B.Sc. Ac. & ECT-I
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-I (Main) Examination Month Year

Paper - II **Introduction to Emergency Medicine and EMS**

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 a) What is Clinical examination? 15
b) Define and describe the 4 methods of physical examination with examples?
c) Roles and Responsibilities of Emergency Care Technician.
- Q.2 a) What is inter facility transport? 15
b) Sequence of procedure for Emergency call- preparation and scene management.
c) Safety during transport to hospital.
- Q.3 Write Notes on 2X10=20
a) Resuscitation team and explain the role of each member.
"Do Not Resuscitate" (DNR) order.
b) Doorway to the hospital department.
Classification of Hospital.
- Q.4 Short Notes (any 4 out of 6) 4x5=20
a) Mention different types of splints used in Emergency Department
b) Log roll.
c) What is Golden Hour?
d) What is Jaw thrust maneuver and its indications?
e) BLS algorithm.
f) Medical legal cases.

MODEL PAPER

B.Sc. Acx. & ECT.-II
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-II (Main) Examination Month Year

Paper - I **Pathology, Clinical Microbiology 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 | Elaborate on Pathogenesis, clinical course and management of bronchial asthma | 15 |
| Q.2 | Elaborate on the classification, preparations, clinical uses and adverse effects of Benzodiazepines. | 15 |
| Q.3 | Long Answer Type | |
| | a) Define and classify hypersensitivity. Write about Type IV hypersensitivity. | 10 |
| | b) Write in detail about neuromuscular blocking agents. | 10 |
| Q.4 | Short Notes (any 4 out of 6) | 4x5=20 |
| | a) Dengue Fever. | |
| | b) Gram Staining. | |
| | c) Anti-fungal drugs. | |
| | d) Treatment of organophosphorous poisoning. | |
| | e) Blood grouping. | |
| | f) Define Edema. Explain the Pathophysiology of edema. | |

MODEL PAPER

B.Sc. Ac. & ECT.-II
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-II (Main) Examination Month Year

Paper - II **Patient Examination and Nursing**

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 | Define Hygiene. Discuss the Principles relevant to Hygiene and factors influencing Hygiene | 15 |
| Q.2 | Define body mechanics. Movement of patient lifting and transporting. | 15 |
| Q.3 | Write Notes on
a) Universal precaution.
Care of unconscious.
b) Principles of health education.
Uses of comfort devices. | 2x10=20 |
| Q.4 | Short Notes (any 4 out of 6)
a) Definition of first aid.
b) Assessment of pulse.
c) Causes of shock.
d) Define health.
e) Define blood pressure.
f) Common problems of sleep. | 4x5=20 |

MODEL PAPER

B.Sc. Ac. & ECT.-II
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-II (Main) Examination Month Year

Paper - III **Emergency Medicine and EMS -I**

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 Define shock and types of shock and how will you grade hypovolemic shock and its management? 15
- Q.2 Physical, psychosocial, Financial and Relocation aspects of Rehabilitation after disaster. 15
- Q.3 Long Answer Type
- a) Principles of prevention and control of communicable disease. 10
- b) Primary and secondary survey in trauma care. 10
- Q.4 Short Notes (any 4 out of 6) 4x5=20
- a) Name equipments used in emergency care.
- b) What are disinfectants?
- c) Colour coding in hospital waste disposal.
- d) Types of disaster.
- e) Mallampatti classification of airway.
- f) Name some of the respiratory infections?

MODEL PAPER

B.Sc. Ac. & ECT.-III
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-III (Main) Examination Month Year

Paper - I **Emergency Medicine and EMS -II**

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 | Clinical features and management of a case of Scorpion sting. | 15 |
| Q.2 | What are the manifestations of heat related injuries? How will you manage heat stroke? | 15 |
| Q.3 | Write Notes on | |
| | a) Diabetic ketoacidosis – clinical features and management. | 10 |
| | b) Ventricular tachycardia. | 10 |
| Q.4 | Short Notes (any 4 out of 6) | 4x5=20 |
| | a) Malaria. | |
| | b) Submersion injuries. | |
| | c) Adenosine. | |
| | d) Causes of cardiac arrest. | |
| | e) Glasgow coma scale. | |
| | f) Consent. | |

MODEL PAPER

B.Sc. Ac. & ECT.-III
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-III (Main) Examination Month Year

Paper - II

Clinical Procedures and Instrumentation in Emergency Services (Ambulance Equipments)

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 Elaborate answer for indication, procedure and emergency care of patients undergoing Central Venous Pressure. 15
- Q.2 Explain in detail about radiation hazards and its preventive measures. 15
- Q.3 Long Answer Type
- a) Describe about the techniques of insertion of Naso gastric tube and initiation of feedings. 10
- b) List out the equipments used in intercostal drainage and its post operative care. 10
- Q.4 Short Notes (any 4 out of 6) 4x5=20
- a) Drugs used through ET.
- b) Placement and management of external AV shunt.
- c) Define Paracentesis.
- d) What is the mechanism used in dialysis?
- e) Post operative care of patients undergone umbilical vein cannulation.
- f) Complications of blood transfusion.

MODEL PAPER

B.Sc. Ac. & ECT-III
Code

Short Name

B.Sc. Accident and Emergency Care Technology Part-III (Main) Examination Month Year

Paper - III **Emergency Surgery**

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 | How will you manage a 44 yr old male patient presenting to the Emergency with upper GI bleed? | 15 |
| Q.2 | Write in detail about the causes, signs, symptoms and management of Intestinal Obstruction. | 15 |
| Q.3 | Long Answer Type | |
| | a) Write the differential diagnosis of Acute Abdomen and detail on any two of them | 10 |
| | b) Blunt Trauma injuries to Abdomen. | 10 |
| Q.4 | Short Notes (any 4 out of 6) | 4x5=20 |
| | a) Acute Appendicitis. | |
| | b) Ovarian cyst. | |
| | c) Classify different types of wounds. | |
| | d) Illustrate with a diagram the calculation of burns % in an adult patient. | |
| | e) Personal protective environment. | |
| | f) Thomas splint. | |