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**Mahatma Gandhi University**  
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**Medical Sciences and Technology**


**Syllabus**

**B. Sc. MEDICAL RECORD SCIENCE AND CLINICAL INFORMATION TECHNOLOGY**  
**( 3 YEARS DEGREE COURSE )**

**Edition 2021-22**

To,  
Registrar office.  
Sms

Principal & Controller  
Mahatma Gandhi Medical College & Hospital  
Sitapura, JAIPUR


  
PRINCIPAL  
Mahatma Gandhi Institute Of Health Informatics  
Mahatma Gandhi University of Medical Sciences & Technology  
Sitapura, Jaipur - 302012 (Raj.)

## **NOTICE**

**1, Amendments made by the court of the management of the university in rules/regulations of Graduate Medical Courses shall automatically apply to the rules/ regulations of the Mahatma Gandhi University of Medical Sciences and Technology.**

**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.**

*for*   
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Mahatma Gandhi Institute Of Health Informatics  
Mahatma Gandhi University of Medical Sciences & Technology  
Sitapura, Jaipur - 302021 (Raj.)



## **B. Sc. Medical Record Science & Clinical Information Technology (B.Sc. MRS&CIT )**

**(3 years full time)**

### **Introduction:**

### **Objectives/Aims of the course:**

1. To have an exposure to the vast strides in the classification and codification of drugs, diseases and their treatment, and in the organization of hospitals.
2. To acquire sufficient knowledge of the prevailing system of scientific documentation with computerization, information search and retrieval.
3. To acquire knowledge of the networking of hospitals and institutions by the Internet and Intranet.
4. To get familiarity with large databases dealing with various categories of entities such as diseases, pathological conditions, symptoms, drugs and concepts such as 'data mining'
5. To acquire knowledge of the current trends in Medical Record Science like health insurance and third party payers.
6. To integrate advanced knowledge and skills in health care data.
7. Apply effective communication skills and strategies in interactions with multidisciplinary and multi-facility professionals.

### **Duration of the course**


Duration of the course: **3** academic years

### **Medium of instruction:**

English shall be the medium of instruction for all the subjects of study and for examination of the course.

### **Curriculum:**

The curriculum and the syllabus for the course shall be as prescribed by the academic Council from time to time.

  
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## Attendance:

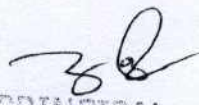
No candidate shall be permitted to appear for any one of the parts of Medical Record Science & Clinical Information Technology degree course examinations, unless he/ she has attended the course in the subject for the prescribed period in an affiliated Institution recognized by this University and produces the necessary certificate of study, attendance, satisfactory conduct and progress from the Head of the Institution.

- \* A candidate is required to put in a minimum of **75%** of attendance in both theory papers and **90% practical** separately in each subject before admission to the examination. This relaxation in attendance includes for medical & any other reasons approved by the head of the Institution.
- \* A candidate lacking in the prescribed attendance and progress in any one of the subjects in theory and practical in the first appearance shall not be permitted for admission to the entire examination.

## Scheme of Examination:

### 1. Theory

- a. Each theory paper examination shall be of 3 hours duration and of maximum marks 70.
- b. There will be Four question papers for each year and shall be in accordance with the different subjects/area covered during each of the B.Sc. Medical Record Science & Clinical Information Technology three years course.
- c. For the First and Second year examinations - these respective above question papers shall be set by the Internal examiners covering their respective areas of syllabus. The answer book shall be evaluated by the concerned internal examiners.
- 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. There shall be two internal and one External Examiner. The External examiner 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 examiners of all the three years shall be appointed by the President of the university in consultation with the respective course coordinator of the course. This exercise shall be conducted by through the office of the Controller of the Examination of the University. The External examiner shall be appointed by the President out of the panel of names submitted by the Coordinator of the course through the Controller of Examinations to the President. The President may or may not be

  
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consult the Coordinator before the appointment of the External examiner.

g. Internal Assessment – Internal assessment shall be of 30 marks for each theory paper.

h. Passing mark - A candidate will have to obtain at least 50% marks in each Theory paper to pass. This means that he will have to score 50 marks in each paper. This shall include the marks obtained in Theory paper of 70 marks and internal assessment for that paper of 30 marks. (Marks obtained in Theory paper + marks obtained in internal assessment = the Total Marks obtained in respect of each paper).

### **Practical examination format.**

First year – 300 Marks ( 150 Practical + 150 Viva )

Second year – 300 Marks ( 150 Practical + 150 Viva )

Third year – 300 Marks ( 150 Practical + 150 Viva )

### **2. Practical examiners**

#### **Practical & viva voce**

First year – three internals

Second year – two internals and one external

Third year – two internals and one external

It shall be left to the examiners – Internals and the Externals, as the case may be, to examine and evaluate the students in the way they wish and award the marks without giving any specific details. The total marks obtained by the candidate in the Project assignment and viva shall be the aggregate of the marks awarded by all the examiners put together as one figure.

This shall then be submitted to the university.

A student shall be required to obtain a minimum of **50%** pass mark in the Dissertation and Viva Voce examination. A candidate who fails to obtain **50%** marks shall be declared failed.

### **3. Result:**

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 First Division
3	Those securing 75% and above in the aggregate marks of First, Second & Third year taken together	-	Pass with Honors

  
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#### 4. Promotion to 2<sup>nd</sup> /3<sup>rd</sup> year of the program

A candidate if failed in one or more subjects in Part I & II of the bachelor of science in Medical Record Science & Clinical Information Technology program can be promoted up to final year a candidate can take any number of attempts with condition that maximum period allowed to complete the the B.Sc. Medical Record Science & Clinical Information Technology course Shall be 5 years.

Results of the candidates successful at the final year examination will be declared only after clearing back paper subjects of first and/or second year if any by him

#### 5. Supplementary examination.

University examination shall be conducted twice in a year, that is main and supplementary examination.

#### 6. Authority to issue transcript

The Controller of Examination of the University shall be the authority for issuing transcript after receiving the described fee from the candidate.

#### Weightage distribution

Item	Weightage (%)
Class participation/presentations	10.00%
Assignment & quizzes	10.00%
Internal Exams	10.00%
Year-end University exam	70.00%
<b>Total</b>	<b>100%</b>

#### 7. Eligibility for admission:

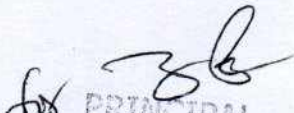
Pass in 12th class of 10 +2 of CBSE or equivalent with minimum aggregate of 55% marks in physics, chemistry and biology or mathematics, provided the candidate has passed in each subject separately.

OR

Diploma in Medical Record Science after Pass in 12th class of 10 +2 of CBSE or equivalent with minimum aggregate of 50% marks in physics chemistry and biology or Mathematics provided the candidate has passed in each subject separately.

OR

Candidates with two years diploma from a recognized Government Board in a subject for which the candidate desires to enroll, in the respective Allied Health Sciences course and shall have passed plus 12 [10+2] with Physics, Chemistry and Biology or mathematics, as principal subjects or candidates with 3 years diploma from a recognized Government Board in a subject for which the candidate desires to enrol, in the respective Allied Health Sciences course & should have studied Physics, Biology and Chemistry as principal subjects during the tenure of the course.

  
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## 8. Selection procedure

1. Admission to B. Sc. Medical Record Science & Clinical Information Technology course shall be made on the basis of eligibility criteria set by university and interview to be conducted for the purpose.
2. Successful candidates on the basis of 12<sup>th</sup> percentage will be called for the University combined entrance examination followed by interview & shall have face an interview board. The interview board will include the Principal of Institute of Health Informatics and Head of the Institution, whose recommendations shall be final for the selection of the students.
3. During subsequent counseling (s) the seat will be allotted as per the merit of the candidate depending on the availability of seats on that particular day.
4. Candidate who fails to attend the Medical Examination on the notified date(s) will forfeit the claim for admission and placement in the waiting list except permitted by the competent authority under special circumstances.
5. The name of the student(s) who remain(s) absent from classes for more than 15 days at a stretch after joining the said course will be struck off from the college rolls without giving any notice.

## 9. Provision of Lateral Entry:

Lateral entry to second year for allied health science courses for candidates who have passed diploma program from the Government Boards and recognized by State/Central University, fulfilling the conditions specified and these students are eligible to take admission on lateral entry system only in the same subject studied at diploma level.

Subjects	Maximum Marks		
	Theory	Internal Assessment	Practical + Viva
Paper 1	70	30	300
Paper 2	70	30	
Paper 3	70	30	
Paper 4	70	30	

  
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Sitapur, Uttar Pradesh - 202011

<b>B. Sc. MRS&amp;CIT Part I</b>	
<b>Paper Ist</b>	Pre and Para clinical Science
<b>Paper IInd</b>	Medical Record Science
<b>Paper IIIrd</b>	Medical Terminology
<b>Paper IVth</b>	Communicative English
<b>B. Sc. MRS&amp;CIT Part II</b>	
<b>Paper Ist</b>	Clinical Information Management
<b>Paper IInd</b>	Health Information Management-I
<b>Paper IIIrd</b>	Professionalism and Values
<b>Paper IVth</b>	Hospital Statistics
<b>B. Sc. MRS&amp;CIT Part III</b>	
<b>Paper Ist</b>	Health Information Management II
<b>Paper IInd</b>	Research & Statistics
<b>Paper IIIrd</b>	Data Management
<b>Paper IVth</b>	Project Management

### Syllabus

#### **B.Sc. Medical Record Science & Clinical Information Technology.**

**Note:** Topics to be covered under the syllabus including but not limited to are as follows:

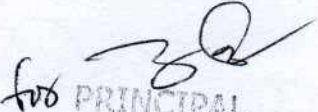
#### **Theory**

#### **B.Sc. MRS&CIT Part I**

#### **Paper I: Pre and Para clinical Science**

#### **Unit I: HUMAN ANATOMY AND PHYSIOLOGY**

Integumentary system, Musculoskeletal system, Respiratory system, Cardiovascular system, Blood and lymphatic system, Digestive system, Urogenital systems, Endocrine system, Nervous system, Organs of special sense.

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## **Unit II: GENERAL PATHOLOGY & BIOCHEMISTRY**

Introduction to Pathology , Inflammation , Infection , Degeneration , Benign and Malignant Tumours , Blood groups, cross-matching, transfusions , Tests done on various body fluids and tissues Chemistry of the human body fluids in health and diseases Cerebrospinal fluid Clotting mechanism of the blood, Enzymes produced in the G.I.Tract, Vitamins, Hormones, Proteins and Non-proteins, Nitrogenous substances, lipids, carbohydrates, Electrolytes Metabolism, acid-base balance, Normal values and ranges of biochemistry investigations

## **Unit III: MICROBIOLOGY AND PHARMACOLOGY**

Introduction to Microbiology, Classification and characteristics of organisms, Cultivation and identification of organisms, bacteria etc., Disinfection, antiseptics, sanitation, Immunity, Allergy Pathogenic organisms, non pathogenic organisms, virus and fungus. Introduction to pharmacology, General and Local anesthetics Hypnotics and Sedatives Narcotic analgesics, narcotic antagonists, Non-narcotic analgesics, antipyretics, Psychopharmacological agents, Drugs acting on autonomic nervous system Antihistamines, Blocking agents Respiratory pharmacology, cardiovascular pharmacology, Coagulants and anticoagulants, Diuretics, hormones , Chemotherapy , Drug addiction

## **Unit IV: FORENSIC MEDICINE**

Asphyxial deaths Hanging Rape , Sodomy Gun shot injury, injury by bullets, sharp objects Traffic Accidents Drowning Medico-legal aspects of wounds Wound certificate Toxicology Food poisoning Medico-legal autopsy.

## **Paper II: Medical Record Science**

### **Unit I : History of Development of Medical Records**

Early Ancient Times to Renaissance Period (16th & 17th Centuries) 18th -20th Centuries and Till Date In U.S.A. At International Level In India

### **Unit II: Characteristics of quality Medical Records:**

Definition, Characteristics of 'Good' Medical Record , Values of 'Good' Medical Record to various users , Required Characteristics of entries in medical Records , Responsibility for Medical Record Quality , Source-oriented, Problem-oriented, and Integrated medical records , Medical Record Forms and their Content . Standard Order of Arrangement of Medical Record forms . Analysis of Medical Record-Quantitative & Qualitative , Incomplete Record Control

### **Unit III: Filing and Organizational Aspects of Medical Record**

Policies , Functions , Location, Space and Layout , Equipment , Forms Designing and

  
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5/200A, Phase - 2, 2020 (P. 1)



Control , Medical Records Flow and Processing,Principles of Identification of a Patient ,Methods of Collection of Identification Data ,Types of Central Admitting Services ,Admitting Policies ,Procedure Outlines for Admissions ,Flow of Records following Admissions ,Advantages of good Admitting Policies and Procedures ,Pre-requisites for smooth & efficient functioning of the Centralized ,Admitting Services

#### **Unit IV: Medico-Legal Aspects and Interdepartmental Communication**

Medical Ethics , Hippocratic Oath, and Code of Ethics for the Medical Record Professionals Ownership of the Medical Record Privileged Communication and confidentiality of Medical Records Release of Information: To the Patient , To Authorized Persons /Agencies Legal Implications of release of Information to unauthorized , Persons/Agencies. Consents: Different types and their validity, invalidity blanket, and improper consents.,Corrections in identification data medical documentations ,Rights and responsibilities of patients ,Medical Record in a Court of Law , Legal requirements in Retention of Medical Records  
Developing Intradepartmental Relationship Developing Interdepartmental Relationships with various Departments of the Hospital,Basic Language Skills: Grammar and Usage , Business Communication Skills. With focus on speaking - Conversations,discussions,dialogues,shortpresentations,pronunciation,Teachingthe different methods of writing likeletters,E-mails,report,casestudy,collectingthepatientdataetc.Basiccompositionsjournals, with a focus on paragraph form and organization. Basic concepts & principles of good communication, Special characteristics of health communication

#### **Paper III : Medical Terminology**

##### **UnitI: Medical Terms in Human Body Structure**

Identify all anatomical structures of the human body ☑ Understand the technical functions of various organs and systems of the body ☑ Acquire knowledge about various body fluids, hormones and enzymes , Anatomy and Physiology of Integumentary system, Musculoskeletal system,Respiratory system,Cardiovascular system,Blood and lymphatic system ,Digestive system , Urogenital systems,Endocrine system , Nervous system , Organs of special sense,Composition and functions of blood.

##### **UnitII: Medical Language&Origin of Terms**

Definition and Origin of Medical Terms.,Components of Medical Terms ,Prefixes,Suffixes,Roots and Combining forms , External Anatomy and Internal Anatomy , combining forms , ☑ Verbs ☑ Adjectives ☑ Body Fluids ☑ Body Substances ☑ Chemicals ☑ Colours ☑ Phobias , Study of the Body , Basic Structures,. Cells , Tissues , Organs ,Systems,Directions ,Anatomic Planes and Position,Medical Terms related to human body systems.

##### **UnitIII: Medical Terminology**

Derivation of medical terms.,Conventions for combined morphemes







## **PRACTICALS**

Planning, Organizing, Directing and Controlling Personnel Principal Responsibilities and Duties of the Medical Record Administrator/Director Tools of Management in the Hands of the Medical Record Administrator/Director health information management (HIM) applications-Master Patient Index (MPI), abstracting, chart tracking, document imaging, and deficiency analysis, release of information, patient registration, transcription and functions of MRD.

Students will submit reports after each area of posting. departmental functions, quality assessment and performance improvement, computerized information systems, organizational resource and management, billing and reimbursement, document imaging, and the electronic health record. Use MS office: MS word, MS PowerPoint, MS Excel. install different software. Data entry efficiency Visit to the entire chain of healthcare delivery system -Sub centre, PHC, CHC, SDH, DH and Medical college, private hospitals, dispensaries and clinics. governance at village level including interaction and group discussion with village panchayat and front line health workers. Clinical visit to professional department within the hospital.

Read and understand medical records and the medical literature;  Writing terms correctly when abstracting medical records  Establishing accuracy in International Classification of Diseases, Surgical procedures which will be useful in statistics, medical billing, and auditing medical insurance claims

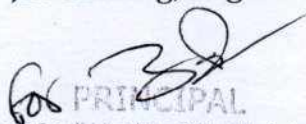
For English communication- training exercises such as dictation, repetition, overlapping and shadowing, email writing, Discussion & Presentation, discussion and debate in English,

## **B.Sc. MRS&CIT Part II**

### **Paper I: Clinical Information Management**

#### **Unit I: Medical Records Management**

Definition, Characteristics of 'Good' Medical Record  Values of 'Good' Medical Record to various users  Required Characteristics of entries in medical Records  Source-oriented, Problem-oriented, and Integrated medical records  Medical Record Forms and their Content  Standard Order of Arrangement of Medical Record forms  Analysis of Medical Record- Quantitative & Qualitative  Incomplete Record Control,  Ambulatory Care Records {Emergency & Outpatient Records}  Clinical Records in Long Term Care and Rehabilitation Facilities  Mental Health Records,  Numbering and Filing Systems  Filing  Storage- Microfilming and Disk Storage  Retention  Registers & Indexes  Record movement control & Tracking system,  Functions  Location, Space and Layout  Equipment  Forms Designing and Control  Medical Records Flow and Processing,  Planning, Organizing, Directing and Controlling  Personnel  Principal

  
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Responsibilities and Duties of the Medical Record Administrator/Director  
Tools of Management in the Hands of the Medical Record Administrator/Director, Medical Ethics, Hippocratic Oath, and Code of Ethics for the Medical Record Professionals  
Ownership of the Medical Record  
Privileged Communication and confidentiality of Medical Records  
Release of Information: To the Patient, To Authorized Persons /Agencies  
Legal Implications of release of Information to unauthorized, Persons/Agencies.  
Consents: Different types and their validity, in validity blanket, and improper consents.  
Corrections in identification data in medical documentations  
Rights and responsibilities of patients  
Medical Record in a Court of Law  
Legal requirements in Retention of Medical Records

## **Unit II: Clinical and Ward Management services**

Policies, Functions  
Location, Space and Layout  
Equipment  
Forms Designing and Control  
Medical Records Flow and Processing, Principles of Identification of a Patient  
Methods of Collection of Identification Data  
Types of Central Admitting Services  
Admitting Policies  
Procedure Outlines for Admissions  
Flow of Records following Admissions  
Advantages of good Admitting Policies and Procedures  
Prerequisites for smooth & efficient functioning of the Centralized Admitting Services, Developing Interdepartmental Relationship  
Developing Interdepartmental Relationships with various Departments of the Hospital, External and Internal Pressures for quality  
Quality Assessment and Quality Improvement  
Quality Assurance & Medical Care Evaluation  
Utilization management  
Peer Review  
Utilization review processing & outcomes of Utilization management  
Risk management program [Organization & Operation  
International Standards Organization [ISO], Quality Council of India, & National Accreditation Board of Hospitals [NABH]

## **Unit III: Professional Practice in Clinical Information Management**

Modern Healthcare team- Functions and Roles  
Professional Image  
Inter and Intrapersonal relations  
What employers look for, Professional Issues- Dichotomy  
Professionalism at all levels  
Productivity and compensation  
Quality Assessment  
Understanding Occupational health and safety  
Communication- Effective Communication  
Networking  
Team Building  
Risk Management, Technology - Tools of the trade  
Recent advances, Time and Stress Management - Time Management in Health Information Profession  
Stress Management for enhancing productivity  
Motivational techniques  
Morale boosting

## **Unit IV: Informatics and Clinical Information Management**

Informatics in Health Care, Health Information Management profession, Data and

  
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dinformationmanagement,InformationssystemDevelopment,SecondaryrecordsandHealthcaredatabase,ClinicalclassificationandTerminologies,Reimbursementmethodologies,Nomenclature. Introduction to Nomenclature ☐Early Nomenclature ☐Specialty Nomenclature ☐StatisticalClassifications☐OtherClassifications☐ChoosingaClassificationSystem☐EncodingSystems

## **PaperII :Health InformationManagement-I**

### **UnitI:Hospital Information System (HIS) with Electronic Medical Records (EMR)**

Various modules of Hospital Information System (HIS), Implementation of HIS, Basic ICD-10 Coding - medical nomenclature and classification systems, ICD-10 structure, conventions, and guidelines for coding in hospitals and physicians offices. ,Electronic Medical Records, Personal Health Records,

EHR – definitions, components, merits & demerits, Preliminary steps in implementation of EHR , Issues and challenges in implementation of HER, Planning for the introduction of EHR , Factors to be considered when developing EHR & implementation plan , Implementation plan, Laboratory Information system, Pharmacy Information system, Picture archiving and communication system, order sets, provider order, point of care charts, clinical decision support system

### **UnitII:Information Technology**

Define the Internet ,How the Internet works ,Internet capabilities and limitations ,How to connect to the Internet via modem ISDN, etc. ,Navigate the World Wide Web ,Identify services and tools offered on the Internet ,Use services and tools offered on the Internet ,Explain book marks ,Safety,Define electronic mail ,Compose electronic messages ,Send electronic messages using appropriate format ,Transmit document using electronic mail system,Explain communications standards ,Describe network structures ,Explain network types and protocols ,Explain network connectivity ,Explain the function of servers in a graphic network ,Describe various network operating systems ,Explain the difference between network software and individual use software ,Use a network to access, file, and store files

### **Unit III:Database and spreadsheet operations**

Define database ,Explain terms used in database systems ,Describe common functions of database systems

Plan and create database, input and update data into records, store database and print quick reports from database. Input, update and store data into records in an existing database Open stored spreadsheet, input and update data into spreadsheet, store revised spreadsheet and print revised spreadsheet Create spreadsheet, input data into spreadsheet, update data in spreadsheet and store spreadsheetIdentify advanced database technology ,Use appropriate reference materials ,Utilize relational database Enter elements intodatabase ,Proofread database ,Explain database ,Design report

  
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formats ,Transfer data to and from remotedatabase ,Print reports using data from multiple databases ,Use database files with other applicationsoftware ,Verify accuracy of output (e.g., edit reports)

#### **UnitIV:Basic Computer Concepts and Applications**

Explain how data is stored in main computer memory ,Explain how computer system executes program instruction ,Explain computer storage capacity ,Explain how data is represented ,Describe data storage devices ,Identify types of memory ,Describe back-up and archival disciplines ,Merge a database application and a spreadsheet application with a word processing ,document. ,Use available software to input personal, business, and organizational names in proper ,indexing order, and produce an alphabetical list. ,Integrate database, spreadsheet and graphic files ,Convert documents from one system to another ,Demonstrate use of computer thesaurus ,Use multimedia techniques/resources ,Perform merge functions

#### **Paper III: Professionalism and Values**

##### **Unit I: Medical law & Ethics**

Medical ethics - Definition - Goal - Scope , Introduction to Code of conduct , Basic principles of medicaethics – Confidentiality , Malpractice and negligence - Rational and irrational drug therapy , Autonomyand informed consent - Right of patients , Care of the terminally ill- Euthanasia , Organ transplantation 8.Medico legal aspects of medical records – Medico legal case and type- Records and document related toMLC - ownership of medical records - Confidentiality Privilege communication - Release of medicalinformation -Unauthorizeddisclosure-retentionofmedical records- othervariouaspects.,ProfessionalIndemnity insurance policy , Development of standardized protocol to avoid near miss or sentinel events ,Obtaining an informedconsent.

##### **Unit II: Quality and patient safety**

ConceptsofQualityof Care, QualityImprovementApproaches, StandardsandNorms,QualityImprovement Tools , Introduction to NABH guidelines , Vital signs and primary assessment ,Basic emergency care – first aid and triage , Ventilations including use of bag-valve-masks(BVMs) , Choking, rescue breathing methods , One- and Two-rescuer CPR , Using an AED(Automatedexternaldefibrillator),Managingan emergencyincluding movingapatient,Definition of Biomedical Waste ,Waste minimization , BMW – Segregation, collection,transportation, treatment and disposal (including color coding) , Liquid BMW, Radioactivewaste, Metals / Chemicals / Drug waste , BMW Management & methods of disinfection ,Moderntechnologyforhandling BMW,UseofPersonalprotectiveequipment(PPE).  
Monitoring & controlling of cross infection (Protective devices) ,Evidence-based infectioncontrol principles and practices [such as sterilization, disinfection, effective hand hygiene anduse of Personal protective equipment



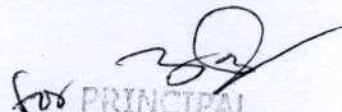
(PPE)], Prevention & control of common healthcare associated infections, Components of an effective infection control program, and d. Guidelines (NABH and JCI) for Hospital Infection Control, Fundamentals of emergency management, Psychological impact management, Resource management, Preparedness and risk reduction, Key response functions (including public health, logistics and governance, recovery, rehabilitation and reconstruction), information management, incident command and institutional mechanisms

### **Unit III: Quality Assurance & Consumer Protection**

research and management methodologies of quality, cost and access to healthcare with a focus on the role of health information management. Overview of performance improvement, methods and applications in the area of outcomes research including practice variation, risk adjustment, quality measures and quality management (or quality improvement), practice guidelines, evidence-based medicine, clinical decision support, health-related quality of life, utility assessment, economic evaluations (including cost-effectiveness studies). Structure of Indian Judicial System: Subordinate courts - Various Tribunals - High court and Supreme court - their working relationships and effect of orders. 2. Medico - legal cases: IPC - Medical Termination of Pregnancy Act 1971, Transplantation of Human Organs Act. 3. Law of Contract: Patient as a consumer - Law of Tort - Composition of D.C.D.R.F, S.C.D.R.C and N.C.D.R.C - powers, terms and jurisdiction, enforcement of orders. 4. Medical Negligence: Negligence - Medical Negligence - Contributory Negligence - Gross Negligence - Criminal Negligence - Onus of Proof - Prevention of such Negligence. 5. Liability and Compensation: Vicarious Liability - Liability of Medical Professionals and Para-medical staff - Quantum of Compensation - Applicability of provisions of Consumer Protection Act for various institutions. 6. Consumer Protection Act 1986: Various provisions - structure, powers and jurisdiction of various forums constituted in C.P Act - orders - how enforced. 7. Consent: Consent - Medical Consent - various types of Consent - Consent forms - "informed Consent" in clinical trials - Consent as a process - full proof methods for proper Consent - various defects in obtaining Consent.

### **Unit IV: Laws relating to Hospital Administration:**

Structure of Indian Judicial System: Subordinate courts - Various Tribunals - High court and Supreme court - their working relationships and effect of orders. Medico - legal cases: IPC - Medical Termination of Pregnancy Act 1971, Transplantation of Human Organs Act. Law of Contract: Patient as a consumer - Law of Tort - Composition of D.C.D.R.F, S.C.D.R.C and N.C.D.R.C - powers, terms and jurisdiction, enforcement of orders. Medical Negligence: Negligence - Medical Negligence - Contributory Negligence - Gross Negligence - Criminal Negligence - Onus of Proof - Prevention of such Negligence. Liability and Compensation: Vicarious Liability - Liability of Medical Professionals and Para-medical staff - Quantum of Compensation - Applicability of provisions of Consumer Protection Act for various institutions. Consumer Protection Act 1986: Various

  
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provisions - structure, powers and jurisdiction of various forums constituted in C.P Act - orders - how enforced. Consent: Consent - Medical Consent - various types of Consent - Consent forms - "informed Consent" in clinical trials - Consent as a process - full proof methods for proper Consent - various defects in obtaining Consent.

## **PaperIV:Hospital Statistics**

### **UnitI**

Definition of hospital statistics and important Hospital Terms •Sources of Hospital Statistics – Registers, Medical Records and Daily Ward Census •Analysis of Hospital Services and Discharges –Important Rates, Ratio and Percentages with Formula •Uses and Limitations of Hospital Statistics

### **UnitII**

•Hospital Statistics Reporting Crude Rates o Specific Rate o Prevalence, Incidence, Morbidity, fertility rates o Mortality Rates – Crude Death Rate, Specific Death Rates with respect to age , sex etc. Cause-of-death Rates; Infant Mortality Rates;

### **UnitIII**

Neonatal Mortality Rates o Post-Neonatal Mortality Rate or Late Infant Mortality Rate Collection of hospital statistical data: Birth, Death, fetal death, live birth and immature infants, reporting, determination of basic data, daily analysis of hospital service,

### **UnitIV**

discharge analysis procedure, cumulative method, monthly and annual reports, computation of percentage (ratios) inpatient census and bed occupancy rate (computerized and manual), presentation of hospital data. •Criteria of ill health • Classification of healthy and sick •Measurement of morbidity

## **PRACTICALS**

Gather patient demographic and personal information. Distribute medical charts to the appropriate departments of the hospital. Assist with departmental audits and investigations. Issue medical files to person and agencies according to laws and regulations managing, leading, co-originating and overseeing practices, continuing responsibility for the co-ordination and monitoring of all clinical activities within their designated clinical area ,efficient and effectiveutilization of all resources required to deliver optimum quality care to their client group,interpret andpresentclinicalinformationtopatientsandtheirrelatives,demonstrating highestlevelsofinterpersonalandcommunication skills ensure that patients and their carers have sufficient relevant verbal and writteninformationduringthepatient'sstay,databasemanagementsystem,Coding,InstallationofLAN,MAN,WAN,Internet, electronic spreadsheet,troubleshooting in hospital software's and HIMS,AIApplications,ITApplications,WorkonElectronicHealthrecords.ThirdYear

## **B.Sc. MRS&CIT Part III**



## **Paper1 : Health Information Management II**

### **Unit I : Management of Health Information Services**

Basics of Medical Transcription ,Objectives of Medical Transcription ,Rules of Medical Transcription

Advantages of Medical Transcription ,Division of medical words into their component parts ,Forms, Suffixes, Prefixes and Terminology ,Laboratory tests, Clinical procedures and Abbreviations. Telemedicine: Basic health care ,Classification of Telemedicine ,Technology of Telemedicine ,Objectives of Telemedicine ,Rules of Telemedicine ,Telemedicine Guidelines ,Merits of Telemedicine ,Future Telemedicine plans ,Research

### **Unit II: Health Care Financing**

National health spending ☐ Paying for healthcare ☐ Basics of Health Insurance ☐ Different types of healthcare financing in India Health insurance ☐ Terminologies ☐ Functions of a health financing system ☐ What is health insurance? ☐ History of health insurance ☐ Values in health insurance o Solidarity

Riskpooling/sharingo Equity☐ Participation/empowerment☐ Thehealthinsuranc frameworko Communityo Providerso Organizer o Insurer ☐ Premium o Benefit package o Paymentso Administration o Riskmanagemento Monitoringtheprogramme☐ Typesofhealthinsuranceo Social healthinsuranceo Privatehealth insurance o Community health insurance (CHI) o Government-initiated health insurance schemes(GHI) o Differences in the four categories ☐ Advantages of health insurance ☐ Problems with health insurance o Adverse selection

### **Unit III: HealthCare Policies & standard**

Knowledge of applicable health law, regulations, accreditation standards, and certification requirements. Ability to evaluate compliance and develop compliant organizational policy☐ Implement compliance auditing methods and techniques ☐ Implement ICT systems in compliance with applicable laws, regulations, standards and requirement

### **Unit IV: Health Insurance and Third Party**

Definition and history of Health Insurance ,Concepts in Health Insurance ,Issues in Health Insurance ,Effective Health Insurance ,Good & Bad in Health Insurance ,Reasons for lack of coverage ,Denial of claims ,Contracts or Memorandums of Understanding ,Health Insurance in India ,Health Insurance & Third Party Administrators ,Insurance Regulatory Development Authority & its role,Billing & Health Insurance Billing

## **PaperII: Research & Statistics**

  
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## Unit I: Introduction of Clinical Research

Introduction to Clinical Research, Clinical Trial Terminologies, History of Clinical Research, CPCSEA Guideline & Pre-clinical Trials, Drug Discovery & Development

Introduction to Toxicity Studies, Different Phases of clinical research and subtypes, E-clinical trial, Bioavailability & Bioequivalence Studies [BA/BE], Drug Regulations & Ethics in Clinical Research, Declaration of Helsinki

Belmont Report, Nuremberg code, Informed consent Process, History of Indian regulations and Schedule - Y- Appendices, ICMR (Indian Council of Medical Research) Guidelines, New drugs and Clinical trials rules 2019, Indian GCP (Good Clinical Practice), Drugs & Magic Remedies Act 1954, Drug Price Control Order, CTRI-Clinical trial registry of India, Regulations for AYUSH, An Introduction to Clinical Data Management and Data Management Standards, CDMS (Clinical Data Management System) & CTMS (Clinical Trial Management System)

Medical coding/Writing, Clinical Trial Documentation, Audits and Inspections, Different types of trial design, Objectives and Role of Clinical Research Organization, Site Management and Monitoring in Clinical Research, The Definition & responsibilities and duties of Principal Investigator, Role of personnel in a clinical trial, Assignments and other Activities. Meaning of research, definition of research, what is a research problem, objectives of research, types of research, research approaches, research process, formulating the research problem, literature survey, hypothesis, research design, sampling, criteria of good research.

## Unit II: Biostatistics

Definition of Statistics and Bio statistics ☐ Role of statistics in Health Sciences

☐ Variables: Qualitative & Quantitative, Continuous & Discrete, Dependent & Independent ☐ Scales of Measurement: Nominal

, Ordinal, Interval, Ratio ☐ Organization of data ☐ Types of class intervals: Inclusive, Exclusive & Open ended ☐ Frequency Distribution: Measures of Central

Tendency, Presentation of data: Bar diagram, Pie Diagram, Histogram, Frequency polygon, Frequency curve, and Line diagram. ☐ Measures of

Variation: (Definition, computation, merits, demerits & application), Range, Inter Quartiles, Mean Deviation, Standard Deviation Co-efficient of

Variation ☐ Partition values: Quartiles, Percentiles ☐ Probability: Definitions of

Classical

## Unit III: Hospital Statistics

Definition of hospital statistics and important Hospital Terms ☐ Sources of Hospital Statistics - Registers, Medical Records and Daily Ward Census

☐ Analysis of Hospital Services and Discharges ☐ Important Rates, Ratio and Percentages with Formula ☐ Uses and Limitations of Hospital Statistics

☐ Hospital Statistics Reporting Crude Rates or Specific Rate or Prevalence,

Incidence, Morbidity, fertility rates or Mortality Rates - Crude Death Rate,

Specific Death Rates with respect to age, sex etc. Cause-of-death Rates; Infant

  
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Santara, Goa, India



Mortality Rates; Neonatal Mortality Rates or Post-Neonatal Mortality Rate or Late Infant Mortality Rate Collection of hospital statistical data: Birth, Death, fetal death, live birth and immature infants, reporting, determination of basic data, daily analysis of hospital service, discharge analysis procedure, cumulative method, monthly and annual reports, computation of percentage (ratios) inpatient census and bed occupancy rate (computerized and manual), presentation of hospital data. ☑ Criteria of ill health ☑ Classification of healthy and sick ☑ Measurement of morbidity

#### **Unit IV: Ethical Issue in Research**

History of ethical issues in research, research ethics in the field of women and gender studies, ethical practices in research, informed consent, privacy and confidentiality, risk and harm, benefits, integrity, mechanisms for regulating research, ☑ codes and policies for research ethics, promoting ethical conduct

#### **Paper III: Data Management**

##### **Unit I: Data Base Management System**

Database System Applications, Purpose of Database Systems, View of Data – Data Abstraction

– Instances and Schema – data Models – the ER Model – Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base Architecture – Storage Manager – the, Normalization – Introduction, Non loss decomposition and functional dependencies, First, Second, and third normal forms – dependency preservation, Boyce/Codd normal form. Higher Normal Forms – Introduction, Multi-valued dependencies and Fourth normal form, Join dependencies and Fifth normal form, Overview of the SQL Query Language.

##### **Unit II : Data Security**

What is data ,Data privacy and data protection definitions ,Data privacy vs data protection ,Data processing, Sensitive personal data, Data controller, Data processor, Data protection principles, components of data protection ,Information assurance ,Data security domains ,Strategy for data protection implementation ,Integrity and Confidentiality ,Types of data security, Data security, privacy and protection solutions

##### **Unit III: Data Analysis**

Need of Data Analysis , definition of Data ,Types of Data ,Qualitative data ,Quantitative data ,Data Strategies, Procedures for Quantitative Analysis, Methods for Qualitative Analysis



sis, The Problems with Data Analysis, Managing the Data Analysis Process - Developing a Team, Planning, Data Management, Terms and Concepts in Data analysis,

#### **Unit IV: Medical Transcription & Telemedicine**

Basics of Medical Transcription, Objectives of Medical Transcription ☐ Rules of Medical Transcription ☐ Advantages of Medical Transcription ☐ Division of medical words into their component parts ☐ Forms, Suffixes, Prefixes and Terminology ☐ Laboratory tests, Clinical procedures and Abbreviations, Telemedicine Basic healthcare ☐ Classification of Telemedicine ☐ Technology of Telemedicine ☐ Objectives of Telemedicine ☐ Rules of Telemedicine ☐ Telemedicine Act ☐ Merit of Telemedicine ☐ Future Telemedicine plans ☐ Research

#### **Paper IV: Project Management**

UNIT - 1 Project Management - Introduction, Meaning & Definition of project. Defining - Project Managers, Functional Managers & Executive's role. Project Manager as a planning agent, Project Driven Vs Non Project Driven organization, marketing in the Project Driven Organization, Programs and Projects, Product Vs Project Management, Project Life Cycles, program evaluation, project analysis & management.

UNIT - 2 Project Planning- Identifying strategic project variables, Project planning, Statement of work, Project specifications, Milestone schedule, Work breakdown structure, Planning cycle, Management Control, categories of project.

UNIT - 3 Project Feasibility - technical feasibility, marketing feasibility, socio-economic feasibility, managerial feasibility, financial feasibility and potential feasibility.

UNIT - 4 Project Evaluation and Review techniques - Estimating activity time, Estimating total program time, PERT/CPM planning, Crash time, project sustainability, operations research.

#### **PRACTICALS**

Transcribes physician dictated medical reports, onto computer files for patients' charts for a healthcare system. Medical terminology, correct grammar usage, knowledge of common diseases, tests, procedures and medications. Knowledge and understanding of the body systems formatting of the different medical reports.

design, development, deployment, and evaluation of database systems. data modeling, and implementation languages. Data integrity, relational normalization theory, security, privacy, and concurrence control

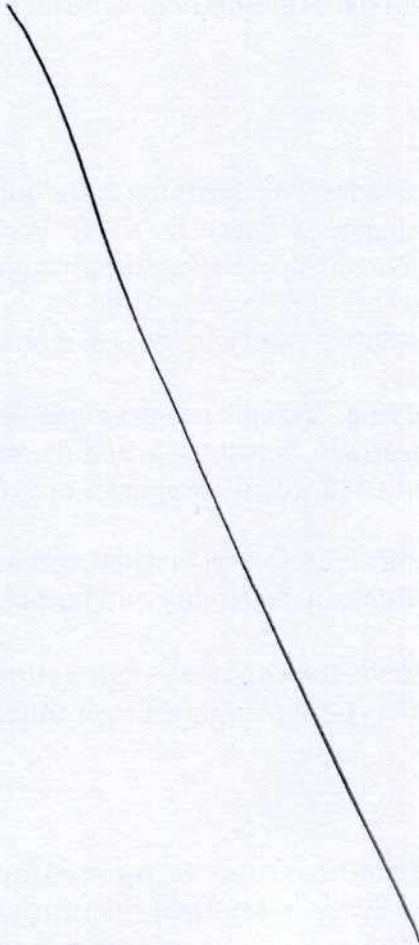
#### **Internship/Externship:**

The internship /Externship will comprise of **450 hours**. A candidate must carry out an externship of minimum 3 months duration.

  
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Sector 14, Gurgaon - 122001 (Haryana)



**MODEL PAPER**

PPCS-I

B.Sc. MRS&CH

**B. Sc. Medical Record science & Clinical Information Technology**

**Part – I (Main) Examination (Month Year)**

**Paper-I**

**Pre and Para clinical Science**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

**Q. No.1 Describe about Musculoskeletal system. (20)**

OR

Explain Respiratory system ?

**Q No. 2 What is Inflammation. Describe in detail (20)**

OR

Classification and characteristics of organisms.

**Q. No. 3 Write short notes on: (any five) (30)**

- (a) injury by bullets.
- (b) Drugs acting on autonomic nervous system ?
- (c) Respiratory pharmacology?
- (d) narcotic antagonists.
- (e) narcotic antagonists?
- (f) acid-base balance ?

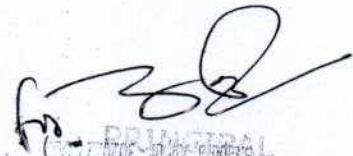


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**MODEL PAPER**

MRS-II

**B. Sc. Medical Record science & Clinical Information Technology**  
**Part – 1 (Main) Examination (Month Year)**  
**Paper-II**

**Medical Record Science**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

**Q.No.1** Discuss characteristics of a quality medical record? **(20)**  
**OR**

Discuss Nomenclature and Classification System?

**Q No. 2:** Define various levels of management and their functions? **(20)**  
**OR**

Give definition of management and explain process of management?

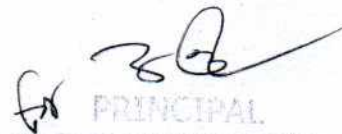
**Q. No. 3 Write short notes on: (any five) (30)**

- i. Motivational technique.
- ii. Time and stress management
- iii. Quality assessment
- iv. Leadership
- v. Staffing
- vi. Organization



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**MODEL PAPER**

B. Sc. MRS&CIT

MT:III

**B. Sc. Medical Record science & Clinical Information Technology**  
**Part – I (Main) Examination (Month Year)**  
**Paper-III**

**Medical terminology**

**Time: Three Hours**

**Maximum Marks: ~~80~~ 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**  
**Only one Supplementary Copy along with one main answer book is allowed**

**Q.No.1** Discuss history of medical terminology ? **(20)**

**OR**

Define and discuss Clinical Terms of various human body systems?

**Q No. 2:** Define medical Terminology. Mention salient features of ICD 10 Coding? **(20)**

**OR**

SNOMED CT and its use in Healthcare setting?

**Q. No. 3 Write short notes on: (any five)** **(30)**

- a. Health care settings.
- b. Current Procedural Terminology
- c. Health Information System
- d. e-Health
- e. Information needs and challenges in Healthcare
- f. Professional development.
- g. Clinical terms in diagnosis.

  
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**MODEL PAPER**

B. Sc. MRS&CIT

MT: III

**B. Sc. Medical Record science & Clinical Information Technology  
Part - 1 (Main) Examination (Month Year)**

**Paper-IV**

**Communicative English**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

**Q.No.1** Write essay in 250 words about Hospital Management? (20)

**OR**

Discuss about importance of English language in Health care

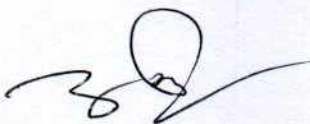
**Q No. 2:** Define Tenses. Describe all tenses with suitable examples. ? (20)

**OR**

What is formal report writing explain with example?

**Q. No. 3 Write short notes on: (any Six) (30)**

- Communication.
- Use of Phrases.
- International Language Proficiency
- ILETS
- Adjectives.
- Noun & Pronoun.
- Application writing .

  
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**MODEL PAPER**

CIM:I

**B. Sc. Medical Record science & Clinical Information Technology**  
**Part – II (Main) Examination (Month Year)**  
**Paper-I**

**Clinical Information Management**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**  
**Only one Supplementary Copy along with one main answer book is allowed**

**Q No. 1 Define and Discuss Database management System? (20)**

**OR**


Explain about clinical information management ?

**Q No. 2 Discuss in detail about importance of clinical information? (20)**  
**OR**  
Discuss in detail about Change management?

**Q. No. 3 Write short notes on: (any five) (30)**

- a. Organizational structures theory.
- b. Policy development
- c. Stakeholder analysis
- d. ICD 10 Coding
- e. Hospital Information system
- f. Emerging technology issues in healthcare.

  
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**MODEL PAPER**

B. Sc. MRS&CIT

HIM-II:II

**B. Sc. Medical Record science & Clinical Information Technology**  
**Part – II (Main) Examination (Month Year)**  
**Paper-II**

**Health Information Management- I**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

Q.No.1 Discuss characteristics of a quality medical record? (20)  
**OR**

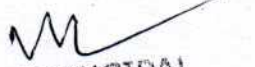
Discuss Nomenclature and Classification System?


Q No. 2: Define various levels of management and their functions? (20)  
**OR**

Give definition of management and explain process of management?

Q. No. 3 Write short notes on: (any five) (30)

- a. Motivational technique.
- b. Time and stress management
- c. Quality assessment
- d. Leadership
- e. Staffing
- f. Organization

  
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**MODEL PAPER**

B. Sc. MRS&CIT

PV-III

**B. Sc. Medical Record science & Clinical Information Technology**

**Part – II (Main) Examination (Month Year)**

**Paper-III**

**Professionalism & Values**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

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**Q.No.1 Define Professional. Discuss in detail? (20)**

**OR**

Discuss Support services in a Hospital environment?


**Q No. 2 Consumer Protection act? (20)**

**OR**

Medical Negligence?

**Q. No. 3 Write short notes on: (any five) (30)**

- a. Types of Account.
- b. Trial Balance
- c. Fixed Assets and Depreciation
- d. Financial accounting Vs. Cost accounting
- e. Budgets and budgetary control
- f. Health Insurance in India
- g. Balance sheet.

  
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**MODEL PAPER**

B. Sc. MRS&CIT

MT: III

**B. Sc. Medical Record science & Clinical Information Technology**

**Part - II (Main) Examination (Month Year)**

**Paper-IV**

**Hospital Statistics**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

**Q.No.1** Discuss Hospital Statistics Reporting Crude? (20)

**OR**

Discuss about Neonatal Mortality Rates

**Q No. 2:** Discuss about discharge analysis procedure? (20)

**OR**

What is cumulative method? Discuss in detail

**Q. No. 3 Write short notes on: (any Six) (30)**

- a. computation of percentage (ratios).
- b. inpatient census and bed occupancy rate
- c. presentation of hospital data
- d. Criteria of ill health
- e. Classification of healthy and sick
- f. Measurement of morbidity
- g. Healthcare statics

for 

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**MODEL PAPER**

B. Sc. MRS&CIT

HIM-II

**B. Sc. Medical Record science & Clinical Information Technology**

**Part – III (Main) Examination (Month Year)**

**Paper-I**

**Health Information Management -II**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

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Q.No.1 Basics of Medical Transcription?

(20)

**OR**

National health spending?

Q No. 2: Functions of a health financing system?

(20)


**OR**

Risk management o Monitoring the programme ?

Q. No. 3 Write short notes on: (any five)

(30)

- a. Implement ICT systems
- b. Time and stress management
- c. Implement compliance
- d. Third Party Administrators
- e. empowerment
- f. standards and requirement

  
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**MODEL PAPER**

B. Sc. MRS&CIT

RS-II

**B. Sc. Medical Record science & Clinical Information Technology  
Part – III (Main) Examination (Month Year)**

**Paper-II**

**Research & Statistics**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**

**Only one Supplementary Copy along with one main answer book is allowed**

Q.No.1: Types of Data, explain with example?

(20)

**OR**

Explain Variables: Qualitative & Quantitative?

Q No. 2: What is sampling? Describe various sampling methods.

(20)

**OR**

Define Probability and enumerate rules of Probability?

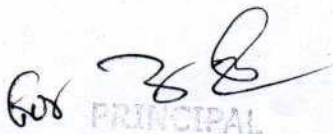
Q. No. 3 Write short notes on: (any five)

(30)

- Statistics
- Biomedical wastage
- Scale of measurement
- Uses and Limitations of Hospital Statistics
- Research question.
- Planning tools & Techniques.

  
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**MODEL PAPER**

B. Sc. MRS&CIT

DM-III

**B. Sc. Medical Record science & Clinical Information Technology**  
**Part – III (Main) Examination (Month Year)**

**Paper-III**

**Data Management**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.**  
**Only one Supplementary Copy along with one main answer book is allowed**

**Q. No.1** What is data ,Data privacy and data protection. **(20)**

OR

Need of Data Analysis

**Q No. 2:** Data privacy vs data protection **(20)**

OR

Data security domains

**Q. No. 3 Write short notes on: (any five)** **(30)**

- a) Concepts in Data analysis
- b) Objectives of Medical Transcription
- c) Basic health care
- d) Future Telemedicine plan.
- e) Quantitative data
- f) Terms and Concepts in Data analysis,

  
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**MODEL PAPER**

B. Sc. MRS&CIT

MT: III

**B. Sc. Medical Record science & Clinical Information Technology**

**Part – III (Main) Examination (Month Year)**

**Paper-IV**

**Project Management**

**Time: Three Hours**

**Maximum Marks: 70**

**Attempt all Questions**

**All the parts of one question should be answered at one place.  
Only one Supplementary Copy along with one main answer book is allowed**

**Q.No.1** Discuss Project proposal writing? **(20)**

**OR**

Discuss about financial challenges in project management.


**Q No. 2:** Discuss about Project Management Process? **(20)**

**OR**

Describe Project Planning & Identifying strategic project variables

**Q. No. 3 Write short notes on: (any Six) **(30)****

- a. Statement of work
- b. Project specifications
- c. categories of project
- d. Management Control
- e. Planning cycle
- f. Work breakdown structure
- g. Healthcare project management

  
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