B. Sc. (IT) Part I Semester-I
Paper III
System Analysis and Design

UNIT - I :

Introduction : System, Subsystems, Components of Computerized Information System, Systems Analysts, SDLC, Prototyping. Feasibility Study and Analysis: Identifying Problems, Organizing Feasibility Analysis: Economic, Financial, Organizational and Technological. Feasibility Decision, Choice of a solution. Data Collection: Interviews, Brain Storming, Questionnaires, Document Search, Observation.

UNIT - II :

Structured tools and techniques of Data analysis : Structured English, Process Charts, SOP, Decision Tables and Decision Trees, Data Flow Diagram, Data Dictionary. (Special emphasis on problem solving) System Design : Input design: Input Validation, Human factor Consideration, Messages, System Tolerance. Output design: Categories of output, Design Principles, Control of Output. Forms: Principles of Form Design, Ways to ensure Quality Forms. Codes: Types, Physical Representation of Codes, Principle of Code Design.

UNIT - III :

Implementation: Training, Operational Training and Related Activities, Planning to Implement Change, Change Strategies. Testing: Preparation for Testing, Test Execution: Levels of Testing, Component, Function, Subsystem, System, Test Evaluation, Acceptance. Conversion: Cold Turkey, Parallel, Pilot, Modular and Sequential Methods. Conversion Period Length. System Evaluation.

UNIT - IV :

Project Planning, Metrics for Project Size Estimation, Project Estimation Techniques, Scheduling: Work Breakdown Structure, Activity Networks and CPM, Gantt Charts, PERT Charts, Project Monitoring and Control. Risk Management, Software Configuration Management: Necessity, Configuring Management Activities Software Reliability and Quality Management: Software Reliability, Software Quality, ISO 9000. Software Maintenance: Characteristics of Software Maintenance, Maintenance Process Models, Estimation of Maintenance Cost. Software Reuse: What can be reused, Why no reuse so far, Basic Issues.