Software Engineering

Max Marks : 80 **Min Marks : 27**

Note : The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

UNIT – I

Software Engineering Fundamentals: Definition of software product; software development paradigms; software engineering; knowledge engineering and end user development approaches.

Software Analysis:

Abstraction; partitioning and projection; system specification; software requirements specification (SRS) standards; formal specification method; specification tools; flow based, data based and object orientated analysis.

UNIT - II

Systems Design: Idealised and constrained design; process oriented design (Gane and Sarson and Yourdon notations); data oriented design (Warnier – (Orr, E-r modeling); Object oriented design (Booch approach); Cohesion and coupling; Design metrics; design documentation standards.

UNIT - III

Role of Case Tools: Relevance of case tools; High-end and low–end case tools; Automated support for data dictionaries, data flow diagrams, entity relationship diagrams. **Coding And Programming**: Choice of programming languages; mixed language programming and call semantics; Re-engineering legacy systems; coding standard.

UNIT - IV

Software Quality And Testing: Software quality assurance; types of software testing (white box, black box, unit, integration, validation, system etc); debugging and reliability analysis; program complexity analysis; software quality and metrics; software maturity model and extensions. Software cost and Time estimation. Functions points; issues in software cost estimation; introduction to the Rayleigh curve3; alglorithmic cost model (COCOM0, Putnam-slim, Watson and feliix).

UNIT - V

Software Project Management: Planning software projects; work background structures; integrating software, software design and project planning; software project teams; project monitoring and controls.

RECOMENDED BOOKS:

1. Software Engineering: A Practitioner's Approach – by Essman Roger, Tata McGraw Hill
2. An Integrated approach to Software Engineering – by Jalote Pankaj, Narosa: New Delhi.