BCA – 234   SOFTWARE ENGINEERING

Maximum Marks: 100   **External: 80**

Minimum Pass Marks: 35   **Internal: 20**

Time: 3 hours

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

UNIT – I

Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes, Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance, Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.

UNIT – II

Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS, Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools, Organizing and structuring information, Requirement specification, validation and Verification.. SCM

UNIT – III

Structured Analysis and Tools: Data Flow Diagram, Data Dictionary, Decision table, Decision tress, Structured English, Entity-Relationship diagrams, Cohesion and Coupling.
Gantt chart, PERT Chart, Software Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics.
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UNIT – IV

Software Project Planning: Cost estimation: COCOMO model, Project scheduling, Staffing and personnel planning, team structure, Software configuration management, Quality assurance plans, Project monitoring plans, Risk Management. Software testing strategies: unit testing, integration testing, Validation testing, System testing, Alpha and Beta testing.

TEXT BOOKS:
1. Pressman R. S., "Software Engineering – A Practitioner's Approach", Tata McGraw Hill.
2. Jalote P., "An Integrated approach to Software Engineering", Narosa.

REFERENCE BOOKS:
1. Sommerville, "Software Engineering", Addison Wesley.

2. Fairley R., "Software Engineering Concepts", Tata McGraw Hill.
3. James Peter, W Pedrycz, "Software Engineering", John Wiley & Sons.