A.V.PAREKH TECHNICAL INSTITUTE RAJKOT

THEORY ASSIGNMENT

BRANCH: COMPUTER ENGINEERING

SEM: 4
SUBJECT: Introduction to Software Engineering (4340702)
Term: 2024-25(Even)

Unit – I Software Process Models (CO1)

1	Define Software. Explain the features of good software.
2	List The Four types of Software with examples of each and Explain each type.
3	Distinguish Program and Product (Software).
4	Define Software engineering .Explain the necessity of Software engineering.
5	Explain layered technology approach of Software engineering with diagram.
6	Describe Generic Framework activities and List Umbrella activities.
7	Define Software life cycle and software life cycle model.
8	List the need of a document of life cycle model.
9	Explain the phase entry and exit criteria of life cycle model.
10	Explain Classical waterfall model.
11	Explain iterative waterfall model.
12	Explain Evolutionary (incremental) model.
13	Explain Prototyping model.
14	Explain Spiral model.
15	Compare different life cycle models.
16	List the Value Statements of manifesto for Agile Software Development
17	Explain Twelve Principal of Agile Software Development
18	Describe Agile Software Development Model
19	Give the difference between Agile Model and Iterative waterfall Model
20	Explain Agile Model SCRUM With Diagram
21	Explain Extreme Programming.

Unit –II Software Requirement Analysis and Design (CO2)

1	Explain Requirements Gathering and Analysis.
2	Define SRS and Explain Characteristic of SRS (Good SRS and Bad SRS)
3	Explain the Customer requirement.
4	Explain the Functional requirement in detail.
5	Explain Organization of the SRS Document.
6	Define software design. List the items which must be designed during the design phase.
7	Explain characteristic of a Good Software Design.
8	Differentiate Analysis And Design
9	Classify Design Activities
10	Classify Design Methodology
11	Define COHESION. Explain the classification of COHESION.
12	Define COUPLING. Explain the classification of COUPLING.
13	Define function independence and List advantages of it.
14	Define Data Flow Diagrams. Explain the Symbols used in DFDs.
15	List Shortcomings of the DFD model.
16	Define UML and List the UML Diagrams.
17	Explain Use Case Diagram With Symbols.

18	Explain Class Diagram With Symbols.
19	Explain Activity Diagram With Symbols.
20	Explain Sequence Diagram With Symbols.

Unit –III Software Project Estimation & Scheduling (CO3)

1	Describe Job responsibility of software project manager.
2	Describe the Required skill of software project manager to manage software project.
3	Explain LOC (Line of Code) Metric for Size Estimation
4	Explain Function Point Metric for Size Estimation
5	List the Estimation Technique and Describe Heuristic Technique.
6	Distinguish organic, semidetached and embedded type software.
7	Explain Basic COCOMO Model for Project Estimation.
8	Explain Intermediate and Complete COCOMO Model
9	Describe Project Scheduling.
10	Explain work breakdown structure.
11	Explain activity networks and critical path method with example.
12	Explain Gantt charts with example.
13	Explain Flow Chart.
14	Explain Sprint Burn down chart with example.
15	Define software Risk. Explain identification of software Risk (Types of Risk).
16	Explain Risk Assessment and Risk Containment (Control).

Unit –IV Software Coding and testing (CO4)

1	Define Coding .List coding Standards and Guidelines.
2	Explain Different Code review techniques.
3	Describe Types of Software Documentation.
4	Define Testing, Failure, test case, test suite, Verification and Validation.
5	Differentiate Testing In the LARGE and Testing In the SMALL.
6	Explain Unit Testing.
7	Explain Integration Testing.
8	Define Alpha and Beta Testing.
9	Explain BLACK-BOX Testing (Functional Testing).
10	Explain WHITE-BOX Testing (Structural Testing).
11	Describe Test Documentation and Test Case Templates.