

Dr. Babasaheb Ambedkar Open University, Ahmedabad

Term-End Examination : January-2026

Course Name : MSCIT

Date : 20-02-2026

Subject Name : Software Engineering

Time : 11:30AM TO 01:45PM

Subject Code : MSCIT-105

Max Marks : 70

Section A

Q.-1. Respond to any three of the following questions in brief. (30)

- (1) Analyze the "Cost of Quality," detailing failure costs (internal and external), appraisal costs, and prevention costs.
- (2) Describe the process of conducting a formal technical review and identify common issues found during database design reviews.
- (3) Explain the representation of complex logic using Decision Trees and Decision Tables with an example.
- (4) Discuss the symbols, rules, and levels of Data Flow Diagrams (DFD) used in structured analysis.
- (5) Explain the V-Model of testing and the relationship between development activities and testing levels.

Section B

Q.-2. Write short notes on any four of the following topics. (20)

- (1) List and describe the generic framework activities involved in a software process.
- (2) Explain the six quality attributes identified by the ISO 9126 standard.
- (3) Outline the properties of a well-written Software Requirement Specification (SRS).
- (4) Discuss Multiplicity notation in UML Class Diagrams.
- (5) Describe the "Back tracking" and "Cause elimination" strategies used in debugging.
- (6) Explain Equivalence Partitioning (EP) as a black-box test design technique.

Section C

Q.-3. Choose the correct answer from the options given below. (10)

(1) Which layer of software engineering serves as the foundation and provides the bedrock?

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|------------|------------------|
| A) Tools | B) Methods |
| C) Process | D) Quality focus |

(2) Which umbrella activity manages the effect of change throughout the software process?

- | | |
|-----------------------------|----------------------|
| A) Documentation | B) Quality assurance |
| C) Configuration management | D) Risk management |

(3) At which CMMI maturity level are processes usually ad hoc and chaotic?

- | | |
|------------------------|-------------------------|
| A) Level 1 - Performed | B) Level 2 - Managed |
| C) Level 3 - Defined | D) Level 5 - Optimizing |

(4) The Waterfall Model is also known as the:

- | | |
|-------------------------------|----------------------|
| A) Spiral Model | B) RAD Model |
| C) Classical Life Cycle Model | D) Incremental Model |

(5) What is a major disadvantage of the Waterfall Model?

- | | |
|------------------------------|---|
| A) It is complex to use | B) No working software until late in the life cycle |
| C) It requires few resources | D) It lacks documentation |

(6) Evolutionary process models are _____ in nature.

- | | |
|--------------|---------------|
| A) Linear | B) One-time |
| C) Iterative | D) Sequential |

(7) In Scrum, the priority list of business requirements is called the:

- A) Sprint
- B) Backlog
- C) Demo
- D) Milestone

(8) COCOMO stands for:

- A) Common Cost Model
- B) Constructive Cost Model
- C) Computerized Cost Model
- D) Complex Cost Model

(9) The metric calculated as "Number of confirmed defects / Size" is:

- A) Defect Age
- B) Defect Density
- C) Defect Distribution
- D) Productivity

(10) A module having high _____ and low _____ is functionally independent.

- A) Coupling, Cohesion
- B) Cohesion, Coupling
- C) Fan-out, Fan-in
- D) Efficiency, Density

Section D

Q.-4. State whether the following statements are true or false.

(10)

- (1) At CMMI Maturity Level 1, an organization provides a stable environment and uses proven processes.
- (2) The Waterfall Model is also referred to as the "Classical Life Cycle Model."
- (3) Agility is defined as the ability to create and respond to change.
- (4) The Extreme Programming (XP) feedback rule states that customer feedback is taken only after the final release.
- (5) The relative cost of finding and fixing a defect increases drastically as the gap between defect injection and detection increases.
- (6) Defect Density is the number of confirmed defects divided by the size of the software.
- (7) Explicit requirements are those that are specified clearly by the customer.
- (8) In a Data Flow Diagram (DFD), external entities are also referred to as "terminators."
- (9) Cohesion is a measure of the degree of interdependence or interaction between different modules.
- (10) Cyclomatic complexity provides a quantitative measure of the number of independent paths through a program.
