



UNIT – III

Design Engineering

PART – A: Multiple Choice Questions (MCQs)

- Design Engineering focuses on:
 - A) Coding
 - B) Software Design
 - C) Testing
 - D) Maintenance**Answer: B) Software Design**
- The design process transforms requirements into:
 - A) Source Code
 - B) Design Models
 - C) Test Cases
 - D) User Manuals**Answer: B) Design Models**
- A good software design should have:
 - A) High Complexity
 - B) Poor Performance
 - C) High Quality
 - D) Large Size**Answer: C) High Quality**
- Software architecture defines the:
 - A) Program Code
 - B) Overall structure of the software
 - C) Test Cases
 - D) User Documentation**Answer: B) Overall structure of the software**
- Data design focuses on:
 - A) User Interface
 - B) Data Structures and Databases
 - C) Coding Standards
 - D) Testing Methods**Answer: B) Data Structures and Databases**
- Reusable solutions to common design problems are called:
 - A) Algorithms
 - B) Design Patterns
 - C) Test Plans
 - D) Models**Answer: B) Design Patterns**

7. UML stands for:
- A) Unified Modeling Language
 - B) Universal Modeling Language
 - C) Unified Management Language
 - D) Universal Management Language
- Answer:** A) Unified Modeling Language
8. Which UML diagram represents the static structure of a system?
- A) Sequence Diagram
 - B) Use Case Diagram
 - C) Class Diagram
 - D) Collaboration Diagram
- Answer:** C) Class Diagram
9. Sequence diagrams mainly show:
- A) System Architecture
 - B) Interaction between objects over time
 - C) Database Design
 - D) User Requirements
- Answer:** B) Interaction between objects over time
10. Use Case Diagrams represent:
- A) Object Relationships
 - B) User Interactions with the System
 - C) Program Modules
 - D) Database Tables
- Answer:** B) User Interactions with the System
11. Collaboration diagrams focus on:
- A) Dynamic interactions among objects
 - B) Data Structures
 - C) System Testing
 - D) Coding Standards
- Answer:** A) Dynamic interactions among objects
12. Component diagrams represent:
- A) Hardware Components
 - B) Software Components and Dependencies
 - C) User Interfaces
 - D) Data Flow
- Answer:** B) Software Components and Dependencies
13. Architectural styles provide:
- A) Coding Techniques
 - B) Design Templates for System Structure
 - C) Testing Methods
 - D) Maintenance Plans
- Answer:** B) Design Templates for System Structure
14. Which diagram is used for structural modeling?
- A) Sequence Diagram
 - B) Use Case Diagram
 - C) Class Diagram
 - D) Activity Diagram
- Answer:** C) Class Diagram
15. The design model acts as a bridge between:
- A) Testing and Maintenance

- B) Requirements and Implementation
 - C) Coding and Deployment
 - D) Users and Hardware
- Answer:** B) Requirements and Implementation

PART – B: Fill in the Blanks

1. The process of converting requirements into a software representation is called **Design Process**.
2. A good software design improves software **Quality**.
3. The overall structure of a software system is called **Software Architecture**.
4. **Data Design** focuses on data structures and databases.
5. Reusable solutions to common problems are known as **Design Patterns**.
6. UML stands for **Unified Modeling Language**.
7. A **Class Diagram** represents the static structure of a system.
8. **Sequence Diagrams** show interactions among objects over time.
9. **Use Case Diagrams** describe interactions between users and the system.
10. **Collaboration Diagrams** represent communication among objects.
11. **Component Diagrams** depict software components and their relationships.
12. Architectural **Styles** provide predefined system structures.
13. The design model serves as a blueprint for **Implementation**.
14. Basic structural modeling in UML commonly uses **Class Diagrams**.
15. Software architecture helps in understanding the system's **Organization**.



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