

PART A: Multiple Choice Questions (20 MCQs)

1. Design is considered the _____ task in software development.

- A. First
- B. Second
- C. Third
- D. Final

Answer: B

Reference: Slide 4

2. The main goal of design modelling is to:

- A. Write program code
- B. Test software
- C. Create representations of software
- D. Deploy the system

Answer: C

Reference: Slide 1

3. Which model is translated into the design model?

- A. Test model
- B. Deployment model
- C. Analysis model
- D. Coding model

Answer: C

Reference: Slide 5

4. Which of the following is NOT part of the design model?

- A. Data/Class design
- B. Architectural design
- C. Interface design
- D. Requirement specification

Answer: D

Reference: Slide 6

5. Which design model element focuses on transforming data models into data structures?

- A. Architectural elements
- B. Interface elements
- C. Data elements
- D. Deployment elements

Answer: C

Reference: Slide 8 & 9

6. Architectural elements are derived from all EXCEPT:

- A. Application domain information
- B. Requirements model elements
- C. Architectural patterns and styles
- D. Source code

Answer: D

Reference: Slide 10

7. Which element defines communication between software components and users?

- A. Data elements
- B. Architectural elements
- C. Interface elements
- D. Deployment elements

Answer: C

Reference: Slide 11

8. UML collaboration diagrams are mainly used to model:

- A. Data structures
- B. Interface elements
- C. Deployment elements
- D. Algorithms

Answer: B

Reference: Slide 11

9. Component elements describe:

- A. System requirements
- B. Internal details of software components
- C. User interface layout
- D. Hardware configuration

Answer: B

Reference: Slide 13

10. Which diagram is used to model deployment elements?

- A. Class diagram
- B. Sequence diagram
- C. Deployment diagram
- D. Activity diagram

Answer: C

Reference: Slide 15

11. Data design at application level mainly focuses on:

- A. Data warehouse
- B. Algorithms
- C. Database translation
- D. User interface

Answer: C

Reference: Slide 18

12. Well-designed data leads to:

- A. Increased complexity
- B. Reduced modularity
- C. Better program structure
- D. Poor performance

Answer: C

Reference: Slide 19

13. Why is software architecture important?

- A. It replaces coding
- B. It enables early risk reduction
- C. It eliminates testing
- D. It guarantees zero defects

Answer: B

Reference: Slide 25

14. Which standard defines architectural descriptions?

- A. ISO 9001
- B. UML
- C. IEEE-Std-1471-2000
- D. CMMI

Answer: C

Reference: Slide 27

15. An architectural archetype is:

- A. A database table
- B. A hardware component
- C. An abstraction representing system behavior
- D. A test case

Answer: C

Reference: Slide 28

16. Which representation shows control relationships between modules?

- A. Use-case diagram
- B. Structure chart
- C. Deployment diagram
- D. Class diagram

Answer: B

Reference: Slide 31 & 33

17. Architecture reviews are conducted to:

- A. Write code faster
- B. Detect design problems early
- C. Reduce documentation
- D. Replace testing

Answer: B

Reference: Slide 36

18. Which is NOT an architectural consideration?

- A. Economy
- B. Visibility
- C. Spacing
- D. Debugging

Answer: D

Reference: Slide 38

19. Sharing dependencies occur when:

- A. Producers and consumers exchange data
- B. Activities are constrained
- C. Consumers use the same resource
- D. Control flow is restricted

Answer: C

Reference: Slide 39

20. Which architectural style organizes the system into layers?

- A. Data-centered
- B. Call and return
- C. Layered
- D. Data flow

Answer: C

Reference: Slide 46

PART B: True / False Questions (10)

1. Design follows the analysis phase in software development.

Answer: True

Reference: Slide 4

2. The design model is independent of the analysis model.

Answer: False

Reference: Slide 5

3. Data elements include database architecture design.

Answer: True

Reference: Slide 8

4. Interface elements only include user interfaces.

Answer: False

Reference: Slide 11

5. Component elements define algorithmic details.

Answer: True

Reference: Slide 13

6. Deployment elements show how software maps to hardware.

Answer: True

Reference: Slide 15

7. Architecture is the operational software itself.

Answer: False

Reference: Slide 25

8. Architectural descriptions use multiple stakeholder views.

Answer: True

Reference: Slide 27

9. Emergence refers to hidden dependencies in architecture.

Answer: False

Reference: Slide 38

10. A broker pattern is related to distributed architecture.

Answer: True

Reference: Slide 47

PART C: Short Structured Questions (4)

1. Define the design model and list its main elements.

Answer:

The design model is created by translating the analysis model into representations that describe how the software will be built. Its main elements are data/class design, architectural design, interface design, component-level design, and deployment elements.

Reference: Slides 6–8

2. Explain the purpose of data design in software engineering.

Answer:

Data design creates a high-level model of data that is refined into implementation-specific data structures and databases, supporting efficient processing and better modularity.

Reference: Slides 9, 18–19

3. State three reasons why software architecture is important.

Answer:

Architecture allows analysis of design effectiveness, enables early consideration of alternatives, and reduces risks before construction begins.

Reference: Slide 25

4. What are architectural styles? Give two examples.

Answer:

Architectural styles define system categories based on components, connectors, and constraints. Examples include data-centered architecture and layered architecture.

Reference: Slides 41–42