

# 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

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**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

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**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

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**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

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**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

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**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

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**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

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**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

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**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

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**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

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**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

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**12. Well-designed data leads to:**

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

**Answer:** C

**Reference:** Slide 19

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**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

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**14. Which standard defines architectural descriptions?**

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

**Answer:** C

**Reference:** Slide 27

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**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

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**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

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**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

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**18. Which is NOT an architectural consideration?**

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

**Answer:** D

**Reference:** Slide 38

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**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

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**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

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## PART B: True / False Questions (10)

**1. Design follows the analysis phase in software development.**

**Answer:** True

**Reference:** Slide 4

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

**Answer:** False

**Reference:** Slide 5

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**3. Data elements include database architecture design.**

**Answer:** True

**Reference:** Slide 8

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**4. Interface elements only include user interfaces.**

**Answer:** False

**Reference:** Slide 11

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**5. Component elements define algorithmic details.**

**Answer:** True

**Reference:** Slide 13

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**6. Deployment elements show how software maps to hardware.**

**Answer:** True

**Reference:** Slide 15

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**7. Architecture is the operational software itself.**

**Answer:** False

**Reference:** Slide 25

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**8. Architectural descriptions use multiple stakeholder views.**

**Answer:** True

**Reference:** Slide 27

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**9. Emergence refers to hidden dependencies in architecture.**

**Answer:** False

**Reference:** Slide 38

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**10. A broker pattern is related to distributed architecture.**

**Answer:** True

**Reference:** Slide 47

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## 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

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**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

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**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

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**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