1. What is the purpose of the Software Design Process?
a) To create detailed documentation only
b) To translate requirements into a representation of software
c) To solely focus on coding the software
d) To conduct user testing

Answer: b) To translate requirements into a representation of software
Explanation: The Software Design Process aims to translate user requirements into a representation of the software to be developed, guiding the implementation phase.

2. Which design concept emphasizes on minimizing dependencies between software modules?
a) Cohesion
b) Coupling
c) Encapsulation
d) Abstraction

Answer: b) Coupling
Explanation: Coupling is a design concept that focuses on minimizing dependencies between software modules to increase modularity and maintainability.

3. What does UML stand for in Software Engineering?
a) Unified Modeling Language
b) Universal Modeling Logic
c) Unique Methodology Language
d) Unified Method Logic

Answer: a) Unified Modeling Language
Explanation: UML stands for Unified Modeling Language, a standardized general-purpose modeling language in software engineering.

4. Which architectural design style emphasizes the separation of concerns by dividing a system into layers?
a) Client-Server
b) MVC (Model-View-Controller)
c) Peer-to-Peer
d) Event-Driven

Answer: b) MVC (Model-View-Controller)
Explanation: The MVC architectural style emphasizes the separation of concerns by dividing a system into three interconnected components: Model, View, and Controller.

5. Which design principle advocates for designing software components to be open for extension but closed for modification?
a) Liskov Substitution Principle
b) Open-Closed Principle
c) Single Responsibility Principle
d) Dependency Inversion Principle

Answer: b) Open-Closed Principle
Explanation: The Open-Closed Principle advocates for designing software components to be open for extension through inheritance but closed for modification of their existing behavior.

6. What is the primary focus of User Interface Design?

a) Ensuring high performance of the software
b) Creating visually appealing interfaces
c) Prioritizing security features
d) Enhancing user experience and usability

Answer: d) Enhancing user experience and usability
Explanation: User Interface Design primarily focuses on enhancing user experience and usability by creating interfaces that are intuitive and easy to use.

7. SA/SD Component Based Design emphasizes on building software systems by assembling reusable software components.
a) True
b) False

Answer: a) True
Explanation: SA/SD (Structured Analysis and Structured Design) Component Based Design emphasizes building software systems by assembling reusable software components, promoting reusability and maintainability.

8. Which software design metric measures the complexity of algorithms used in the software?
a) Cyclomatic Complexity
b) Cohesion
c) Coupling
d) Fan-in/Fan-out

Answer: a) Cyclomatic Complexity
Explanation: Cyclomatic Complexity is a software design metric used to measure the

complexity of algorithms within software code, helping to identify areas that might be difficult to test or maintain.

9. Which architectural view focuses on how the system will be structured or organized?
a) Logical View
b) Development View
c) Process View
d) Physical View

Answer: a) Logical View
Explanation: The Logical View focuses on how the system will be structured or organized from a conceptual or functional perspective.

10. In Function-oriented Design, software is organized based on functions and data is kept separate from the functions.
a) True
b) False

Answer: a) True
Explanation: In Function-oriented Design, software is organized based on functions, with an emphasis on keeping data separate from functions to facilitate modular design and maintenance.

11. Which architectural design style focuses on distributing application functions across multiple computing resources?
a) Client-Server
b) MVC (Model-View-Controller)

c) Microservices
d) Layered Architecture

Answer: c) Microservices
Explanation: Microservices architecture focuses on distributing application functions across multiple computing resources, promoting scalability and resilience.

12. Which UML diagram is used to depict the interaction between objects within a system over time?
a) Class Diagram
b) Sequence Diagram
c) Activity Diagram
d) State Diagram

Answer: b) Sequence Diagram
Explanation: Sequence Diagrams in UML are used to depict the interaction between objects within a system over time, showing the sequence of messages exchanged between objects.

13. Which design principle suggests that a class should have only one reason to change?
a) Liskov Substitution Principle
b) Open-Closed Principle
c) Single Responsibility Principle
d) Dependency Inversion Principle

Answer: c) Single Responsibility Principle
Explanation: The Single Responsibility Principle suggests that a class should have only one reason to change, promoting high cohesion and maintainability.

14. Which architectural view focuses on how the system will be implemented and constructed?
a) Logical View
b) Development View
c) Process View
d) Physical View

Answer: b) Development View
Explanation: The Development View focuses on how the system will be implemented and constructed, including aspects such as modules, libraries, and development environments.

15. Which UML diagram is used to describe the behavior of a system or part of a system?
a) Class Diagram
b) Use Case Diagram
c) State Diagram
d) Component Diagram

Answer: c) State Diagram
Explanation: State Diagrams in UML are used to describe the behavior of a system or part of a system, showing the states an object or system can be in and the transitions between those states.

16. Which design principle advocates for designing software components to depend on abstractions rather than concrete implementations?
a) Liskov Substitution Principle
b) Open-Closed Principle
c) Single Responsibility Principle

d) Dependency Inversion Principle

Answer: d) Dependency Inversion Principle
Explanation: The Dependency Inversion Principle advocates for designing software components to depend on abstractions rather than concrete implementations, promoting flexibility and extensibility.

17. Which UML diagram is used to model the static structure of a system, showing classes, attributes, methods, and their relationships?
a) Class Diagram
b) Sequence Diagram
c) Collaboration Diagram
d) Object Diagram

Answer: a) Class Diagram
Explanation: Class Diagrams in UML are used to model the static structure of a system, depicting classes, attributes, methods, and their relationships.

18. Which architectural style involves breaking down a system into small, manageable and independently deployable services?
a) Client-Server
b) MVC (Model-View-Controller)
c) Microservices
d) Layered Architecture

Answer: c) Microservices
Explanation: Microservices architectural style involves breaking down a system into small,

manageable, and independently deployable services, promoting scalability and maintainability.

19. Which UML diagram is used to describe the flow of activities within a system or business process?
a) Class Diagram
b) Use Case Diagram
c) Activity Diagram
d) State Diagram

Answer: c) Activity Diagram
Explanation: Activity Diagrams in UML are used to describe the flow of activities within a system or business process, showing the sequence of actions and decisions.

20.In Architectural Desing, what does the term “Scalability” refer to?
a) The ability of a system to handle increasing amounts of work or users
b) The speed at which a system responds to user interactions
c) The ability of a system to recover from failures
d) The security measures implemented within a system

Answer: a) The ability of a system to handle increasing amounts of work or users
Explanation: Scalability in Architectural Design refers to the ability of a system to handle increasing amounts of work or users without sacrificing performance.

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