**1. Introduction to System Analysis & Design**

1. **Which of the following best defines system analysis?**  
   a) The development of a new system  
   b) The study of an existing system to understand and improve it  
   c) The process of coding software  
   d) The testing of software  
   **Answer:** b) The study of an existing system to understand and improve it
2. **A system is a collection of \_\_\_\_\_\_\_\_\_\_.**  
   a) Software programs  
   b) Related components working together  
   c) Data structures  
   d) Hardware components only  
   **Answer:** b) Related components working together
3. **Which of the following is NOT a characteristic of a system?**  
   a) Interconnectivity  
   b) Interdependence  
   c) Randomness  
   d) Purpose  
   **Answer:** c) Randomness
4. **Which of the following best describes system design?**  
   a) Identifying system requirements  
   b) Creating system specifications based on analysis  
   c) Implementing the system in code  
   d) Testing the system  
   **Answer:** b) Creating system specifications based on analysis
5. **Which type of system design focuses on the data flow and structure?**  
   a) Logical design  
   b) Physical design  
   c) Procedural design  
   d) Security design  
   **Answer:** a) Logical design

**2. System Development Life Cycle (SDLC)**

1. **Which phase of the SDLC involves gathering and analyzing requirements?**  
   a) Design  
   b) Implementation  
   c) Testing  
   d) Analysis  
   **Answer:** d) Analysis
2. **What is the first phase of SDLC?**  
   a) System Testing  
   b) System Design  
   c) Feasibility Study  
   d) Maintenance  
   **Answer:** c) Feasibility Study
3. **Which of the following is NOT a phase in SDLC?**  
   a) Planning  
   b) Design  
   c) Marketing  
   d) Maintenance  
   **Answer:** c) Marketing
4. **Which model follows a sequential flow in SDLC?**  
   a) Agile Model  
   b) Spiral Model  
   c) Waterfall Model  
   d) RAD Model  
   **Answer:** c) Waterfall Model
5. **The primary advantage of the Spiral Model is:**  
   a) It has no risks  
   b) It is simple and linear  
   c) It focuses on risk assessment  
   d) It does not require user involvement  
   **Answer:** c) It focuses on risk assessment

**3. Feasibility Study**

1. **Which of the following is NOT a type of feasibility analysis?**  
   a) Technical feasibility  
   b) Economic feasibility  
   c) Psychological feasibility  
   d) Operational feasibility  
   **Answer:** c) Psychological feasibility
2. **Economic feasibility focuses on:**  
   a) Cost-benefit analysis  
   b) User requirements  
   c) System security  
   d) System design  
   **Answer:** a) Cost-benefit analysis
3. **Which feasibility study evaluates if a system can be developed using existing technology?**  
   a) Economic feasibility  
   b) Technical feasibility  
   c) Operational feasibility  
   d) Legal feasibility  
   **Answer:** b) Technical feasibility
4. **Legal feasibility ensures that the system:**  
   a) Follows coding standards  
   b) Complies with laws and regulations  
   c) Is easy to use  
   d) Requires minimal resources  
   **Answer:** b) Complies with laws and regulations
5. **Which feasibility study examines whether the system will function smoothly within an organization?**  
   a) Technical  
   b) Economic  
   c) Operational  
   d) Legal  
   **Answer:** c) Operational

**4. Data Flow Diagrams (DFD) & System Modeling**

1. **What does DFD stand for?**  
   a) Data Flow Diagram  
   b) Database File Design  
   c) Data Framework Design  
   d) Direct Function Development  
   **Answer:** a) Data Flow Diagram
2. **Which symbol represents a process in a DFD?**  
   a) Rectangle  
   b) Circle  
   c) Arrow  
   d) Diamond  
   **Answer:** b) Circle
3. **What does a data store represent in a DFD?**  
   a) A process  
   b) External entity  
   c) Storage location  
   d) User interaction  
   **Answer:** c) Storage location
4. **Which DFD level provides the most detailed view?**  
   a) Level 0  
   b) Level 1  
   c) Level 2  
   d) Context Diagram  
   **Answer:** c) Level 2
5. **External entities in DFD represent:**  
   a) System users or other systems interacting with the system  
   b) Internal processes  
   c) Data storage locations  
   d) System software  
   **Answer:** a) System users or other systems interacting with the system

**5. Prototyping & Agile Methodologies**

1. **Prototyping is useful when:**  
   a) Requirements are unclear  
   b) Requirements are fixed  
   c) The system is fully developed  
   d) No feedback is required  
   **Answer:** a) Requirements are unclear
2. **The Agile methodology focuses on:**  
   a) Heavy documentation  
   b) Customer collaboration and iterative development  
   c) One-time system delivery  
   d) Formal processes  
   **Answer:** b) Customer collaboration and iterative development
3. **Which Agile framework uses sprints?**  
   a) Waterfall  
   b) Scrum  
   c) Spiral  
   d) RAD  
   **Answer:** b) Scrum
4. **Which of the following is NOT a principle of Agile?**  
   a) Customer collaboration  
   b) Responding to change  
   c) Following a rigid plan  
   d) Delivering working software frequently  
   **Answer:** c) Following a rigid plan
5. **RAD stands for:**  
   a) Rapid Application Development  
   b) Resource Allocation Design  
   c) Recursive Application Development  
   d) Rational Algorithm Development  
   **Answer:** a) Rapid Application Development

**6. Software Requirement Specification (SRS)**

1. **What is the main purpose of an SRS document?**  
   a) To design the system  
   b) To define user requirements and system functionalities  
   c) To test the system  
   d) To implement the code  
   **Answer:** b) To define user requirements and system functionalities
2. **Which of the following is NOT a characteristic of a good SRS document?**  
   a) Complete  
   b) Ambiguous  
   c) Consistent  
   d) Verifiable  
   **Answer:** b) Ambiguous
3. **Functional requirements in an SRS define:**  
   a) Security policies  
   b) Performance expectations  
   c) Specific operations and features of the system  
   d) Hardware limitations  
   **Answer:** c) Specific operations and features of the system
4. **Non-functional requirements focus on:**  
   a) User interface design  
   b) Security, performance, and reliability  
   c) System features and operations  
   d) Database schema  
   **Answer:** b) Security, performance, and reliability
5. **Which of the following is NOT an example of a non-functional requirement?**  
   a) Response time should be less than 2 seconds  
   b) The system must support 10,000 concurrent users  
   c) The system should allow users to reset passwords  
   d) Data should be encrypted for security  
   **Answer:** c) The system should allow users to reset passwords

**7. System Design & Architecture**

1. **Which of the following is a key goal of system design?**  
   a) Writing program code  
   b) Translating user requirements into a blueprint for implementation  
   c) Testing the system  
   d) Conducting market research  
   **Answer:** b) Translating user requirements into a blueprint for implementation
2. **What is the primary focus of physical system design?**  
   a) Software functionality  
   b) Hardware and network specifications  
   c) Business processes  
   d) User requirements  
   **Answer:** b) Hardware and network specifications
3. **Which design principle ensures that a system can handle increased load efficiently?**  
   a) Modularity  
   b) Scalability  
   c) Maintainability  
   d) Usability  
   **Answer:** b) Scalability
4. **Which of the following is NOT a component of system architecture?**  
   a) User interface  
   b) Hardware platform  
   c) Marketing strategy  
   d) Database management system  
   **Answer:** c) Marketing strategy
5. **In software design, modularity refers to:**  
   a) Breaking the system into independent modules  
   b) Integrating all functionalities into a single component  
   c) Writing complex code  
   d) Ignoring system dependencies  
   **Answer:** a) Breaking the system into independent modules

**8. Database Design**

1. **Which of the following represents the relationship between entities in a database?**  
   a) ER Diagram  
   b) Data Flow Diagram  
   c) Use Case Diagram  
   d) Class Diagram  
   **Answer:** a) ER Diagram
2. **Normalization in database design is used to:**  
   a) Improve system speed  
   b) Reduce data redundancy and inconsistency  
   c) Store large files efficiently  
   d) Increase the number of tables  
   **Answer:** b) Reduce data redundancy and inconsistency
3. **Which normal form removes partial dependencies in a database?**  
   a) First Normal Form (1NF)  
   b) Second Normal Form (2NF)  
   c) Third Normal Form (3NF)  
   d) Boyce-Codd Normal Form (BCNF)  
   **Answer:** b) Second Normal Form (2NF)
4. **A primary key in a database table is used to:**  
   a) Store large data values  
   b) Ensure unique identification of records  
   c) Perform calculations  
   d) Encrypt sensitive information  
   **Answer:** b) Ensure unique identification of records
5. **Which SQL command is used to retrieve data from a database?**  
   a) INSERT  
   b) UPDATE  
   c) SELECT  
   d) DELETE  
   **Answer:** c) SELECT

**9. System Testing & Quality Assurance**

1. **Which of the following testing types ensures that each unit of the software works as expected?**  
   a) System Testing  
   b) Unit Testing  
   c) Integration Testing  
   d) Acceptance Testing  
   **Answer:** b) Unit Testing
2. **What is the main objective of system testing?**  
   a) Checking individual modules  
   b) Validating the complete system against requirements  
   c) Testing user experience  
   d) Debugging code  
   **Answer:** b) Validating the complete system against requirements
3. **Regression testing is performed to:**  
   a) Check the initial performance of a system  
   b) Test new functionality  
   c) Ensure that new code changes do not affect existing functionality  
   d) Verify the database design  
   **Answer:** c) Ensure that new code changes do not affect existing functionality
4. **Which type of testing is performed by the end-users before system deployment?**  
   a) Unit Testing  
   b) Alpha Testing  
   c) Beta Testing  
   d) Integration Testing  
   **Answer:** c) Beta Testing
5. **Which of the following is NOT a software quality attribute?**  
   a) Reliability  
   b) Security  
   c) Usability  
   d) Marketing strategy  
   **Answer:** d) Marketing strategy

**10. System Implementation & Maintenance**

1. **Which of the following is NOT a system implementation strategy?**  
   a) Parallel Implementation  
   b) Direct Cutover  
   c) Phased Implementation  
   d) Random Deployment  
   **Answer:** d) Random Deployment
2. **Which system implementation approach involves running both old and new systems simultaneously?**  
   a) Direct Cutover  
   b) Parallel Implementation  
   c) Phased Implementation  
   d) Pilot Implementation  
   **Answer:** b) Parallel Implementation
3. **Corrective maintenance refers to:**  
   a) Enhancing system performance  
   b) Fixing bugs and defects in the system  
   c) Adapting the system to new requirements  
   d) Changing the user interface  
   **Answer:** b) Fixing bugs and defects in the system
4. **Which of the following is NOT an advantage of preventive maintenance?**  
   a) Reduces system failures  
   b) Improves system performance  
   c) Increases unexpected downtime  
   d) Extends system life  
   **Answer:** c) Increases unexpected downtime
5. **Which phase of the SDLC continues indefinitely?**  
   a) System Testing  
   b) Design  
   c) Maintenance  
   d) Implementation  
   **Answer:** c) Maintenance