Entrance Exam
Core Software Engineering Section (Sample Questions)

1) Which of the following is a disadvantage of the Waterfall Model?
   a) It is easy to manage due to its rigid structure.
   b) It works well for smaller projects where requirements are well understood.
   c) It allows for early detection of issues.
   d) It is not suitable for projects where requirements are likely to change.
Answer: D

2) Which data structure is mainly used for implementing the recursive algorithm?
   a) Stack
   b) Binary tree
   c) Linked list
   d) Queue
Answer: A

3) Which of the following is not a type of DBMS?
   a) Hierarchical DBMS
   b) Network DBMS
   c) Relational DBMS
   d) Functional DBMS
Answer: D

4) Which of the following is an example of a nonfunctional requirement?
   a) The system shall allow users to log in
   b) The system shall provide a list of all registered users
   c) The system shall respond to user queries within 2 seconds
   d) The system shall support user account creation
Answer: C)

5) What is the primary purpose of a "dependency injection" in software design?
   a) To reduce coupling between components
   b) To improve performance of the application
   c) To simplify the deployment process
   d) To automate testing procedures
Answer: A)

6) In the context of software design patterns, what is the purpose of the Singleton pattern?
   a) To provide a way to create objects
   b) To ensure a class has only one instance
   c) To define a family of algorithms
   d) To separate the construction of a complex object from its representation
Answer B

7) In the context of software metrics, what does the term "cyclomatic complexity" refer to?
   a) The complexity of data structures used in the software
   b) The complexity of user interface design

c) The number of linearly independent paths through a program's source code
d) The complexity of integrating different modules

Answer: C)

8) Which programming paradigm emphasizes objects and classes?
   a) Functional programming
   b) Object-oriented programming
   c) Imperative programming
   d) Declarative programming

Answer: b) Object-oriented programming

9) Which programming language is known for its simplicity and ease of use?
   a) Java
   b) Python
   c) C++
   d) JavaScript

Answer: b) Python

10) What is the main advantage of a service-oriented architecture?
    a) Improved scalability
    b) Enhanced security
    c) Simplified maintenance
    d) Reduced complexity

Answer: b) Enhanced security