



DSA ASSIGNMENT QUESTIONS FOR BCA IV : Software Engineering

Q1. Introduction to Software Engineering

Explain Software Engineering in detail.

Your answer should include:

- Definition of Software Engineering
 - Need for Software Engineering
 - Characteristics of good software
 - Software crisis and how Software Engineering addresses it
 - Role and responsibilities of a Software Engineer
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Q2. Software Engineering Activities

Describe the major activities involved in Software Engineering.

Explain in detail:

- Software specification
 - Software design and implementation
 - Software validation
 - Software evolution
 - Importance of each activity with suitable examples
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Q3. Software Development Life Cycle (SDLC)

Explain the Software Development Life Cycle (SDLC) and its basic phases.

Include:

- Meaning of SDLC
 - Phases:
 - Requirement Analysis
 - System Design
 - Implementation (Coding)
 - Testing
 - Deployment
 - Maintenance
 - Advantages of following SDLC
 - Simple SDLC diagram
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Q4. Software Process Models

Explain different Software Process Models with emphasis on Waterfall, Incremental, Spiral, and Agile models.

Your answer should cover:

- Definition of a software process model
- Waterfall Model – working, advantages, disadvantages
- Incremental Model – features and benefits
- Spiral Model – risk analysis and iterations
- Agile Model – principles and characteristics
- Comparison and suitable application scenarios

Q5. Requirements Engineering and Software Project Management

Explain the basics of Requirements Engineering and Software Project Management.

Discuss:

- Definition and importance of Requirements Engineering
- Types of requirements (functional and non-functional)
- Requirement gathering techniques
- Challenges in requirements engineering
- Basics of Software Project Management
- Project planning, scheduling, and risk management
- Role of a Software Project Manager

Note: At least one diagram must be included in every question.
