Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Arrear Examination – November 2025
IV Semester

Batch: 2023 **Time: 3 Hours**
Major : Computer Science **Max. Marks: 100**

23BCSC08 Software Engineering

Course outcomes:

CO1: Acquire strong fundamental knowledge in software engineering.
CO2: Ability to design the software projects in objects oriented models.
CO3: Effectively demonstrate competence in Problem-Solving Approaches.
CO4: Adapt to new emerging technologies and methodologies.
CO5: Assuring software quality standards based on various testing strategies.

Part A — 10 x 1 = 10
Choose the Correct Answer

1. Which of the following is not considered one of the key characteristics of software? CO1 K1
   a. Maintainability b. Reliability
   c. Efficiency d. Performance of hardware components

2. Which of the following best describes the evolving role of software in modern industries? CO1 K1
   a. Software is primarily used for basic data storage and processing tasks.
   b. Software is mainly responsible for automating routine tasks with minimal human intervention
   c. Software is integral to enhancing business strategies, customer experience, and operational efficiency
   d. Software has little impact on industries outside of the technology sector

3. Which of the following design strategies focuses on breaking down a system into smaller, manageable components that can be developed and tested independently? CO2 K1
   a. Top-down design b. Bottom-up design
   c. Modularity d. Iterative design

4. Which of the following is not typically considered a key aspect of design quality? CO2 K1
   a. Usability b. Maintainability
   c. Scalability d. Budget constraints

5. Which of the following best describes the key difference between a process and a project? CO3 K1
   a. A project is a one-time, specific endeavor with a defined start and end, while a process is a continuous, repetitive set of activities
   b. A process is focused on achieving a specific goal, while a project is focused on day-to-day operations
   c. A project is shorter in duration than a process
   d. A project can be managed without a defined methodology, while a process requires one

6. What is the primary purpose of assessing a process in software development? CO3 K1
   a. To evaluate the technical performance of the development tools used
   b. To identify the strengths and weaknesses of the development process and ensure continuous improvement
   c. To reduce the number of team members involved in the development
   d. To finalize the project budget and timeline1

7. Which of the following is the primary goal of software reliability? CO4 K1
   a. To ensure that the software performs optimally at all times
   b. To guarantee that the software is free of defects
   c. To measure the probability of software failure during a specified period of operation
   d. To ensure software security is maintained

8. Which of the following is a commonly used metric for measuring software reliability? CO4 K1
   a. Lines of code (LOC) b. Mean Time Between Failures (MTBF)
   c. Cyclomatic complexity d. Function points

9. Which of the following is a primary benefit of software reuse? CO4 K1
   a. Increased software development cost
   b. Reduced time to market and improved productivity
   c. Increased complexity of the software system

10. Which of the following is the primary purpose of software unit testing? CO5 K1
    a. To ensure that the software meets customer requirements
    b. To test the integration of different modules
    c. To verify that individual components or functions work as intended
    d. To test the overall performance of the software

5 x 6 = 30

Part B
Answer ALL questions
Each answer should not exceed 400 words or two pages

11.a. Describe the software characteristics in brief. CO1 K1

(or)

11.b. List out the various Software Applications and explain in brief. CO1 K2

12.a. Explain the Software Architectural Design in brief. CO2 K2

(or)

12.b. Discuss the overview of the assessment process. CO3 K2

13.a. Write short notes on Redefining the Software Engineering Process. CO3 K2

(or)

13.b. Explain the concept of Software Reuse in brief. CO4 K2

14.a. Discuss in brief the concept of Fault Tolerance. CO4 K2

(or)

14.b. Explain Fault Avoidance techniques in brief. CO5 K2

15.a. Explain Top Down Integration and Bottom Up Integration Testing in brief. CO5 K2

(or)

15.b. Write a short note on Unit Testing and its Considerations. CO5 K2

5 x 12 = 60

Part C
Answer ALL questions
Each answer should not exceed 800 words or four pages

16.a. Discuss in detail on the concept of Iterative Development Model and Incremental Development Model. CO1 K2

(or)

16. b. Explain the various Software Development Approaches in detail. CO1 K2

17.a. Elaborate the various Software Design Principles. CO2 K2

(or)

17. b. Explain the various Data Flow Models with examples in detail. CO2 K2

18.a. Write on semantic data model and object data model in detail. CO2 K2

(or)

18.b. Write the implications of new business model with software engineering in detail. CO3 K2

19.a. Discuss on the assumptions in Software Engineering and business processes. CO3 K2

(or)

19.b. Discuss in detail on the concept of Software Reliability and its Metrics. CO4 K2

20.a. Explain the Software Testing Strategies in detail. CO5 K2

(or)

20.b. Explain the white box and black box testing techniques in detail. CO5 K2

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