Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MCADD-805 (3)

M.C.A. (Integrated), VIII Semester

Examination, May 2024

Software Architecture

(Elective - IV)

Time : Three Hours ***Maximum Marks : 70***

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Discuss the principles, advantages and challenges associated with software methodology.

   b) Explore the concept of software quality models and their significance in evaluating and ensuring the quality of software products.

2. a) Discuss the phases of the Architecture Business Cycle (ABC).

   b) Provide examples of structural modeling techniques used in different architectural styles and discuss their strengths and limitations in capturing system structure and complexity.

3. a) Elaborate pipes and filters approach.

   b) Describe the key characteristics and principles of each architectural style.

4. a) Explore Software Architecture Description Languages (ADLs) and their significance in specifying and documenting software architectures.

b) Describe the purpose and functionality of JDBC and JNDI in accessing and managing database resources and enterprise services respectively in Java applications

5. a) Evaluate the benefits of using UML as a standardized notation for communicating architectural designs.

   b) Explore different types of requirements that influence architectural decisions.

6. a) Explore the Architecture Tradeoff Analysis Method (ATAM) as a structured technique for evaluating and comparing architectural alternatives based on multiple quality attributes.

   b) Describe the principles and techniques used in ARID sessions.

7. a) Explain the concept of refinement in the context of software architecture documentation. How does documentation evolve throughout the software development lifecycle?

   b) Discuss the key elements typically included in a context diagram and their significance.

8. Answer any two of the following:

   a) Tools that support the documentation of variability in software architecture.

   b) Software architecture framework.

   c) Functional and non functional properties of software architecture.

   d) Struts and Hibernate framework in modern software development.

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