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10CS/IS81

Eighth Semester B.E. Degree Examination, June/July 2024

Software Architecture

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Define software architecture. With the help of a neat block diagram of ABC (Architecture Business Cycle) explain the factors that influence software architecture. (10 Marks)
b. Explain in detail how software architecture manifests the earliest set of design decisions. (10 Marks)
- 2 a. Define Architectural style. Mention any four commonly used styles. (10 Marks)
b. State the problem of KWIC (Keyword in Context Index System), propose implicit invocation and pipe and filter styles to implement a solution for the same. (10 Marks)
- 3 a. Briefly explain the testability tactics. (07 Marks)
b. What are the qualities of the system? Explain the modifiability general scenario. (07 Marks)
c. Explain how faults are detected and prevented, using availability tactics. (06 Marks)
- 4 a. What do you mean by architectural pattern? How it is categorized? Also, explain the benefits of pipes and filters architectural pattern? (10 Marks)
b. Explain in detail the implementation steps of layered architectural pattern. (10 Marks)

PART – B

- 5 a. What do you mean by broker Architecture? Explain the dynamic scenarios of Broken System. (10 Marks)
b. Explain with a neat diagram implementation details of Model View Controller (MVC). (10 Marks)
- 6 a. Discuss the benefits and liabilities of reflection architectural pattern and also highlight the known uses of reflection architectural pattern. (07 Marks)
b. Explain in brief, the components comprising the structure of microkernel architectural pattern with OMT (Object Modeling Technique) diagram. Also draw the CRC cards for each component. (08 Marks)
c. Explain the steps involved in implementing the Microkernel system. (05 Marks)
- 7 a. Discuss the implementation steps of whole-part structure. (08 Marks)
b. What are the benefits and liabilities of master-slave architectural pattern? (06 Marks)
c. Define proxy architectural pattern. Explain its implementation steps. (06 Marks)
- 8 a. What is Attribute-Driven Design (ADD)? Explain the steps involved in ADD. (10 Marks)
b. What is documenting view? Explain the steps involved in documenting interfaces. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.