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10CS71

Seventh Semester B.E. Degree Examination, July/August 2022
Object Oriented Modeling and Design

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. What is object oriented development? Explain OO methodology. What are OO themes? (10 Marks)
- b. Define the following terms with an example :
 - (i) Objects and Classes
 - (ii) Class diagram.
 - (iii) Operations and methods
 - (iv) Values and Attributes.
 - (v) Links and Associations. (10 Marks)
- 2 a. What is aggregation and composition? Give their respective UML notations with example. (08 Marks)
- b. Define an event in state modeling. Explain kinds of events with example. (07 Marks)
- c. Explain properties of association ends. (05 Marks)
- 3 a. What is an activity diagram? Explain special constructs for activity models? (08 Marks)
- b. Draw a use-case diagram for a vending machine. List the guidelines for use-case models. (08 Marks)
- c. What are nested states? Explain with example. (04 Marks)
- 4 a. Explain the stages in the software development process. (10 Marks)
- b. Identify the classes for an ATM system. What criteria would you take into consideration to select the right classes? (10 Marks)

PART – B

- 5 a. With a neat class diagram, explain the steps in constructing an application class model. (10 Marks)
- b. Explain any two architectural styles suited for system design. (10 Marks)
- 6 a. Explain the different tasks involved in design optimization. (10 Marks)
- b. Write short notes on ;
 - (i) Reverse engineering Vs Forward engineering
 - (ii) Wrapping. (10 Marks)
- 7 a. What is a pattern? Explain the properties of patterns for software architecture. (10 Marks)
- b. Explain Forwarder-Receiver pattern briefly. (10 Marks)
- 8 a. Explain design pattern for management of software system. (10 Marks)
- b. What are idioms? How do they differ from design patterns? Explain the necessary steps for implementing the counted pointer idiom. (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.