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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