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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