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

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 OO system development methodology? Explain the five stages in OO methodology. **(05 Marks)**
   b. Explain three kinds of model which separates a system into distinct views. **(10 Marks)**
   c. Define and give UML notation for
   (i) Object with values and classes with attributes
   (ii) Qualified association. **(05 Marks)**

2 a. Explain advanced object and class concept with example. **(07 Marks)**
   b. Define and give UML notation for
   (i) Meta data   (ii) Reification   (iii) Derived data   (iv) Packages. **(06 Marks)**
   c. Define event. Explain different types of events in state modeling. **(07 Marks)**

3 a. Define concurrency. Explain Aggregation concurrency with example. **(07 Marks)**
   b. With suitable example, explain the concept of signal generalization. **(06 Marks)**
   c. Explain activity diagram for the stock trade processing. **(07 Marks)**

4 a. Discuss the steps to construct a domain class model with an example. **(12 Marks)**
   b. Explain the software development stages. **(08 Marks)**

PART – B

5 a. Explain the steps followed in constructing application interaction model. **(10 Marks)**
   b. With a neat diagram explain the architecture of ATM system. **(07 Marks)**
   c. Name the three kinds of controls for the external event in a software system. **(03 Marks)**

6 a. What is refactoring? Explain the tasks involved in design optimization. **(10 Marks)**
   b. What are the steps involved in improving the organization of a class design? Explain them briefly. **(10 Marks)**

7 a. What is a pattern? Explain the properties of pattern for software architecture. **(08 Marks)**
   b. Explain the model view controller design pattern for software architecture with OMT class diagram. **(06 Marks)**
   c. Two peers P1 and P2 communicate with each other. For this purpose P1 uses a forwarder Forw1 and receiver recv1, P2 handles all message transfers with a forwarder Forw2 and receiver recv2. Design a scenario which illustrate a typical example of this use of a forwarder – Receiver structure. **(06 Marks)**

8 a. What are idioms and styles? Explain the Publisher – Subscriber design pattern. **(10 Marks)**
   b. Write the steps to implement the counter pointer idiom. **(10 Marks)**

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