USN ☐☐☐☐☐☐☐☐☐☐ **10CS71**

Seventh Semester B.E. Degree Examination, Dec.2017/Jan.2018
Object Oriented Modeling and Design

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

PART – A

1 a. What is object orientation? Explain its aspects with an example. Explain the concept of OO themes.   **(10 Marks)**
   b. Explain the following with examples :
       i) Links and associations   ii) Multiplicity   iii) Association class
       ii) Qualified association   v) Bags and sequences.   **(10 Marks)**

2 a. Explain :
       i) Aggregation Vs Association   ii) Aggregation Vs composition.   **(05 Marks)**
   b. Prepare a metadata of a CAR model that supports only the following UML concepts : Class, attribute, association, association end, multiplicity, class name and attribute name. Use only these constructs to build the metadata.   **(05 Marks)**
   c. What is an event? Explain different types of events with an example.   **(10 Marks)**

3 a. With an example explain the aggregation concurrency.   **(08 Marks)**
   b. Explain scenarios and sequence diagram of an online stock broker.   **(08 Marks)**
   c. Discuss the guidelines for activity models.   **(04 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 any 2 steps to construct an application model with an example.   **(06 Marks)**
   b. Prepare a state diagram for session controller.   **(06 Marks)**
   c. Explain batch transformation and continuous transformation architectural styles. **(08 Marks)**

6 a. List and explain the steps involved in the design of algorithms.   **(08 Marks)**
   b. Write briefly on : i) Fine tuning class   ii) Design optimization.   **(06 Marks)**
   c. Differentiate between forward engineering and reverse engineering.   **(06 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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