Code No: R1631053 **R16** **SET - 1**

III B. Tech I Semester Supplementary Examinations, February-2022

OBJECT ORIENTED ANALYSIS & DESIGN USING UML

(Computer Science and Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A (14 Marks)

1. a) What are the stages in the evolution of the object model? [2M]
   b) List and denote the types of objects in UML. [3M]
   c) List and denote the types of relationships in UML. [3M]
   d) What are the common modeling mechanisms of use case diagrams? [2M]
   e) How to specify space constraints in modeling a system? [2M]
   f) How to represent the relationship between a component and a node in UML? [2M]

PART –B (56 Marks)

2. a) Discuss the parameters that lead to organized and disorganized complexities. [7M]
   b) Verify the validity of the statement “software system is inherently complex.” [7M]

3. a) Discuss the importance of classification in class diagram modeling. [7M]
   b) Explain the steps to identify the classes. Represent the types of objects, classes using UML notations. [7M]

4. a) Model the following enumeration data types: [7M]
   Day = {Sun, Mon, Tue, Wed, Thur, Fri, sat}
   Month = {Jan, Feb, March, April, May, June, July, Aug, Sept, Oct, Nov, Dec}
   b) Create an object diagram to demonstrate a student registration in an online course. [7M]

5. a) Illustrate the Similarities between Sequence and Collaboration diagram with a case study. [7M]
   b) Model the flow of activities with swimlanes and object flow for a library management system case study. [7M]

6. a) Discuss the applications of the concepts process and thread in a real-world system. Explain their notations and modeling mechanisms in UML. [7M]
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b) Model a statechart diagram for an automated room temperature control system. [7M]
Note: consider a fixed temperature (ex:24^{o}). The machine changes heat to cool and vice versa to maintain the fixed temperature in a room.

7. a) Model a component diagram for a library management system. [7M]

b) Explain the common modeling mechanisms of deployment diagrams. [7M]

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