

R15**Code No: 823AB****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA III Semester Examinations, June/July - 2018****OBJECT ORIENTED ANALYSIS AND DESIGN USING UML****Time: 3hrs****Max.Marks:75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**5 × 5 Marks = 25**

- 1.a) Explain the conceptual model of the Unified Modeling Language. [5]
- b) Compare and contrast is-a relationship with has-a relationship with suitable examples.[5]
- c) How is recursion represented in a sequence diagram? Give example. [5]
- d) What are the characteristics of a well-structured state machine? [5]
- e) What is Framework? Explain with an example. [5]

PART - B**5 × 10 Marks = 50**

- 2.a) State the advantages of object oriented modeling over structured approaches.
 - b) What is modeling? What are the principles of modeling? Explain. [5+5]
- OR**
- 3.a) With a neat diagram, explain the object oriented software development life cycle and its phases.
 - b) Explain the various views considered in modeling a system's architecture. [5+5]
- 4.a) What are the constraints applied to association relationships? Discuss.
 - b) Discuss about the common properties, uses and contents of object diagrams. [5+5]
- OR**
- 5.a) What are the visibility specifiers used for classes and packages? Explain.
 - b) Explain in detail the steps to model structural relationships. [5+5]
- 6.a) Explain the various relationships possible among use cases and illustrate them with UML notation.
 - b) Draw a use case diagram that depicts the library application. [5+5]
- OR**
- 7.a) Discuss the semantic equivalence between different interaction diagrams.
 - b) What is the purpose of Activity diagram? With suitable diagram, explain the notations used in Activity diagram. [5+5]

- 8.a) How to model family of signals and exceptions with UML diagrams? Demonstrate.
b) What are the characteristics and common uses of component diagrams? Discuss. [5+5]

OR

- 9.a) Define event and signal. What are the four kinds of events modeled by UML? Explain.
b) What are the characteristics of a well-structured deployment diagram? Explain. [5+5]

- 10.a) What is design pattern? How to use design pattern effectively? Explain.
b) With a neat sketch, explain about Artifact diagrams and its significance. [5+5]

OR

11. Develop the following diagrams in the context of Unified Library Application.
a) Class diagram b) Sequence diagram c) Activity diagram [10]

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