21718

3 Hours / 100 Marks Seat No. ⬚⬚⬚⬚⬚⬚⬚⬚

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following :**   **20**

   (a) Explain object modelling technique (OMT) by Raumbaugh.

   (b) Define multiplicity and qualified association with appropriate example.

   (c) Draw use case diagram for ATM system.

   (d) Describe the concept of concurrent state diagram.

   (e) Draw activity diagram to purchase books from publisher in Library Management System.

   (f) Describe use of port and connector in component diagram with example.

2. **Attempt any FOUR of the following :**   **16**

   (a) State and describe four principles of modelling.

   (b) Describe metadata with appropriate example.

(c) State and describe any four notations used in use-case diagram.

(d) Describe create and destroy message used in sequence diagram with example.

(e) Write difference between action node and activity node in activity diagram.

(f) State and describe any four notations used in deployment diagram.

3. **Attempt any FOUR of the following :**   16

(a) List and describe object oriented themes.

(b) With suitable example describe propagation of operation.

(c) Describe synchronous and asynchronous messages used in sequence diagram. Give notations.

(d) Describe the concept of use-case generalization with example.

(e) Describe joining and forking in an activity diagram.

(f) Describe the concept of node instance used in deployment diagram. Also write it's notation.

4. **Attempt any TWO of the following :**   16

(a) Define the terms link and association. Also draw a class diagram for railway reservation system.

(b) Describe with suitable example, parallel and conditional structured control.

(c) Describe any four notations used in state diagram. Also draw a state diagram for Hospital Management System.

5.   **Attempt any FOUR of the following :**   **16**

    (a)   Explain Software Development Life Cycle (SDLC) of UML.

    (b)   State and describe notations used in object diagram.

    (c)   Draw a sequence diagram for issuing book from library.

    (d)   Draw the use-case diagram for online Airline Reservation System.

    (e)   Describe the importance of swim lanes in activity diagram.

    (f)   Draw component diagram for Library Management System.

6.   **Attempt any FOUR of the following :**   **16**

    (a)   Describe three models of UML.

    (b)   List and classify various UML diagrams.

    (c)   Describe with example the concept of constraint on link.

    (d)   Define following terms with notations :

        (i)   Association end names.

        (ii)   Generalization

    (e)   Describe the concept of decision making and branching in activity diagram.

    (f)   Draw activity diagram for online booking of railway ticket.

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