

Total No. of Questions : 5]

SEAT No. :

P5191

[Total No. of Pages : 2

BE/Insem.-592

B.E. Information Technology (Semester-I)

SOFTWARE MODELING AND DESIGN

(2012 Pattern)

Time : 1 Hour]

[Maximum Marks : 30

Instructions to the candidates:

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4.*
- 2) *Q.5 is compulsory.*
- 3) *Use UML 2.0 notations to draw UML diagrams.*
- 4) *Figures to the right indicate full marks.*

Q1) a) A country has many citizens. One citizen among all can be identified by an Aadhar card. Represent this as a qualified association. Two diagrams are expected. One without qualifier and the other with qualifier. **[5]**

b) An electronic gadget shop has television and washing machines. Television has screen size inches, color, mounting (only wall or table mounts are possible). Televisions come in two types namely LCD and LED. A washing machine has a capacity in litres, color, type of loading (Top or front). A customer can order an electronic gadget. Draw a class diagram for this with attributes and relationships. **[5]**

OR

Q2) a) A book is composed of Table of contents, preface, many chapters and index. Chapters are composed of sections. Convert this using a class diagram. **[5]**

b) Use the class diagram of the above question, to draw the object diagram for a book with table of contents, preface, 3 chapters with three sections each and an index. **[5]**

P.T.O

- Q3)** a) Ticket reservation software provides following facilities to the users namely
- i) Check ticket availability
 - ii) Add passenger details
 - iii) Book ticket
 - iv) Make payment

The payment can be made by credit card or net banking. While booking a ticket, the user may optionally choose a seat of his preference. Draw a suitable use case diagram. [5]

- b) Define state, composite state and concurrent state in the context of state diagram. [5]

- Q4)** a) Show the relationships applicable for use cases using an example. [5]

- b) Insurance system provides vehicle insurance to the owners. Initially, the customers fill the form which has vehicle details and owner's details. This information is submitted to an agent. The agent sends the information to various insurance companies. The companies quote the insurance. The agent selects a best policy and gives it to the owner. Draw an activity diagram with swim lanes and other applicable notations. [5]

- Q5)** Analyze the following description and apply steps to find the candidate analysis classes and attributes from it. List all classes and all attributes separately. The scheduling software facilitates the meetings. When a user (chairperson) arranges a meeting, the software places a meeting entry in the schedule of each attendee. The chairperson uses the scheduler to reserve a room for the meeting, to identify attendees, and to find time on their schedules when everyone is available. The chairperson can indicate whether the attendance for each attendee is required or optional. The system tracks the attendance status for each attendee-whether an attendee has accepted or declined. [10]

