Total No. of Questions : 12]

SEAT No. :

P3408

[Total No. of Pages : 4

[4959]-182

B.E. (Information Technology)

OBJECT ORIENTED MODELING AND DESIGN

(2008 Course) (Semester - I)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Solve Q1 or Q2, Q3 or Q4, Q5 or Q6 from Section I and***
2) ***Solve Q7 or Q8, Q9 or Q10, Q11 or Q12 from Section II.***
3) ***Answers to the two sections should be written in separate books.***
4) ***Figures to the right indicate full marks.***
5) ***Neat diagrams must be drawn wherever necessary.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Differentiate between Reverse Engineering and Forward Engineering. **[4]**

b) Explain the concept of Generalization and Association with suitable example. **[6]**

c) What are the salient features of RUP and ? How is it different from waterfall model? **[6]**

OR

Q2) a) How to apply constraints in Class Diagram. Explain with suitable example. **[4]**

b) With the help of sample class diagram, explain the following: **[8]**

i) Interface

ii) Qualified association

iii) Multiplicity

iv) Role names

c) Describe the software development life cycle of UML. **[4]**

P.T.O.

Q3) a) Write a short note on Behavioral Diagrams in UML. **[8]**

b) Draw a class diagram for FILE MANAGEMENT SYSTEM (FMS). Make suitable additional assumptions about scope and working of your system (write down the scope too). The FMS has concepts of directories, subdirectories. FMS keeps information of directories as well as files for example file creation date, size of file, entries in directory etc. One also needs operation to move , delete, create etc. Make use of advanced notations in UML. **[8]**

OR

Q4) a) Write a short note on Extensibility Mechanism in UML Diagram. **[8]**

b) Draw the Use Case diagram for Hospital Management System. Make the suitable assumptions. **[8]**

Q5) a) Draw UML Use Case diagram for Medical Insurance System using advanced notations The various participants of the same are Owner, Agents, and Claimer. The corresponding use cases for these actors are Hire Agent, Fire Agent, Pay Salary, Make Policies, Make new clients, Describe Policy to Clients, Collect Policy Checks, Check details when policy is Claimed By Claimer Check, Medical Claim Papers, Fill Form To Take Policy, Pay Policy Checks, Claim Policy, Receive Money Of Policy Etc. **[8]**

b) What is the difference between association and like? Explain with example. Draw the object diagram for Library Management System. **[10]**

OR

Q6) a) Write a note on Composite Structure Diagram. **[6]**

b) Does the actor always represent a human user? Justify with suitable example. **[4]**

c) Draw a class diagram for Online First Year Engineering Admission System using advanced notations. Assume suitable data. **[8]**

SECTION - II

Q7) a) Differentiate between: **[8]**

i) Sequence diagram and collaboration diagram.

ii) Action State and Activity State

b) Draw the Collaboration Diagram for registering a new student at a school. **[8]**

OR

Q8) a) You have to model a software system for controlling a Air Conditioner (AC). The AC can be either On or OFF. In the ON state there are two possibilities, COOLING mode or HEATING modes. There are buttons to change from one mode to other mode automatically based on room temperature crossing cutoffs (Cooling if temperature > 30 degree centigrade and Heating if temperature < 10 degree centigrade). All buttons work only if Power is On. Draw a state diagram for given system. **[8]**

b) What is the purpose of timing diagram? Draw a timing diagram for a system of your choice. **[8]**

Q9) a) How an activity diagram differs from traditional flowchart? Draw an activity diagram using swimlanes for Purchasing Items from Shopping Mall'. Represent object flow. **[10]**

b) Draw a Sequence diagram for 'Withdrawal of money from ATM System'. Represent following things: **[8]**

i) Alt Operator

ii) Return Message

iii) Self Call

OR

Q10)a) What is history state? Explain with example. **[6]**

b) Differentiate between sequential substate and concurrent substate with example. **[6]**

c) Draw an Interaction Overview Diagram for a system of your choice. **[6]**

Q11)a) Draw the component diagram for Payroll Management System. **[8]**

b) What is signal? How signals are modeled in UML? Explain with suitable example. **[8]**

OR

Q12)a) What do you mean by two tier and three tier architecture? Draw the deployment diagram for embedded system. **[8]**

b) Explain the concept of Pattern and Frame with suitable example. **[8]**