Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER–III • EXAMINATION – SUMMER • 2014

Subject Code: 630001 **Date: 27-05-2014**

Subject Name: Structured and Object Oriented Analysis and Design Methodology

Time: 02:30 pm - 05:00 pm **Total Marks: 70**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Draw figures whenever necessary.**

Q.1 Answer the following question in short **14**

1) Explain in brief the types of CASE Tools
2) Define the term Data Dictionary and Metadata.
3) What are widgets or gadgets?
4) List out all the data entry methods.
5) "UML is a language". Justify the statement.
6) List out the four relationships used in UML diagrams with example
7) What are the uses of class diagrams?

Q.2 **(a)** Explain the types of systems. **07**

(b) Explain Structured English and Decision Tree with suitable example. **07**

OR

(b) Discuss various types of user interface. **07**

Q.3 **(a)** State and explain how presentations of output are unintentionally biased. What are the ways an analyst can avoid biasing output. **07**

(b) Draw an activity diagram for social networking site where first time users will log on the registration page and register themselves as a member of the site. **07**

OR

Q.3 **(a)** The discount policy of a manufacturer producing two desktop PCs and Laptops and who has three types of customers. Retailers(R), Dealers(D) and Institutions(I) is given below **07**

Rules: In the case of desktop PCs, if the order is from the retailer for amount upto Rs 50000, he allows 6% discounts. If the order is from dealers for amount upto Rs 50000, 7.5% discount is given. On retail order exceeding Rs 50000, 7.5% discount is given. If the order is given from the dealer for an amount exceeding Rs 50000, 11% discount is allowed. In all the above cases a flat 7.5% discount is given to institutions. In the case of laptops a flat discount of 6% is given regardless of amount of customers.

Draw a decision table for the above case study.

(b) Explain the codes with respect to classifying information, concealing information and revealing information. **07**

Q.4 **(a)** Explain System Architecture in detail with suitable diagram **07**

(b) What is Multiple Inheritance? How Multiple Inheritance is used using workarounds in UML diagrams **07**

OR

Q.4	**(a)**	Define State and Event. Describe State Transition and Conditions with example. Draw one shot State diagram.	**07**
	(b)	What is Interaction diagram? Explain Structured Controls in Sequence diagram.	**07**
Q.5	**(a)**	A video central shop wishes to develop an information system to handle following functionalities management (add/update/delete) of video CDs / DVDs, management of customers, return from customers, daily cash summary management reports, reminders to customers etc. Draw Data Flow Diagram (DFD).	**07**
	(b)	An Institution may issue many credit card accounts, each identified by an account number. Each account has a maximum credit limit, a current balance and a mailing address. The account serves one or more customers who reside at the mailing address. The Institution periodically issues a statement for each account. The statement lists a payment due date, finance charge and minimum payment. The statement itemizes various transactions that have occurred throughout the billing interval: cash advances, interest charges, purchases, fees and adjustment to account. Draw a use case and class diagram.	**07**

OR

Q.5	**(a)**	The Retail Store Management System is a system designed for managing, i.e. for ordering, arranging and selling goods. The retailer checks for availability of goods in the store. If the stock of goods is less, then retailer places order for goods. While ordering goods, goods are received at store, the retailer then arranges them by product or price, then he makes payment. If the stock of goods is available, then he will arrange goods for selling. The retailer then sells the goods directly to the customers. The customer buys the items from retailer. The retailer prepares bill for goods purchased by the customer, he receives the amount by credit card or cash from customer. The supplier supplies goods to the store in the system. The overall system is used to manage the goods in the store. Draw a DFD for the above case study.	**07**
	(b)	Draw USE case diagram, activity diagram and class diagram for the case study.	**07**

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