GUJARAT TECHNOLOGICAL UNIVERSITY
MCA INTEGRATED– SEMESTER -III EXAMINATION –SUMMER-2021

Subject Code: 2638603   **Date: 20/09/2021**
Subject Name: Structured and Object Oriented Analysis and Design Methodology
Time: 02:30 PM TO 5:00 PM   **Total Marks: 70**
Instructions:

       1. **Attempt all questions.**
       2. **Make Suitable assumptions wherever necessary.**
       3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain roles and qualities of system analyst in brief. (answer in approximately 200 words)	**07**
	(b)	Discuss in brief Questionnaires method. Also discuss the use of pyramid structure. funnel structure for arranging questions in logical order. (answer in approximately 250 words)	**07**
Q.2	**(a)**	List different steps for developing DFD. Draw context level, 0-Level DFD for the following case study. Consider a book store in a shopping mall. The customer selects the books from racks to purchase. The customer brings selected books to cashier. The cashier scans each item with checkout system to prepare an order. The cashier requests to customer for payment. The customer gives credit card to cashier. The verifier and checkout system scans the card. The verifier accepts the card and payment is accepted. Customer signs the credit card slip. The purchased books are handed over to customer.	**07**
	(b)	Write a short note on Graphical User Interface, also explain Ajax in brief.(answer in approximately 250 words)	**07**

OR

	(b)	What is a Data Warehouse? State any four differences between data warehouse and traditional databases. (answer in approximately 250 words)	**07**
Q.3	**(a)**	Study the following case study: A bank has the following policy on deposits: On deposits of Rs. 5000 and above and for three years or above the interest is 12%. On the same deposit for a period less than 3 years it is 10%. On deposits below Rs. 5000 the interest is 8% regardless of the period of deposit. Write the above process using (i) Structured English (ii) A decision table (iii) decision tree	**07**
	(b)	Give any four general guidelines for designing Web Sites. (answer in approximately 250 words)	**07**

OR

Q.3	**(a)**	What is Use Case diagram in UML? List down actors and use cases for the Food Delivery Web Application system.	**07**
	(b)	Write a short note on	
		(i) Data dictionary	**04**
		(ii)JAD	**03**

Q.4 **(a)** Explain seven phases of SDLC with neat diagram.(answer in approximately 250 words) **07**

(b) Consider the air transportation system. Many flights land and depart from city's airport. Some of the big cities may have more than one airports. Every flight belongs to specific airline. The planes may have many flights to different airports. Each plane is identified with serial number and model. E.g. hypersonic. There are specific pilots for each airline and they fly many flights. Each flight is identified by flight number and date on which flight is scheduled. The passenger reserves a seat for a flight. The seat is identified by a location. **07**
Prepare class diagram and sequence diagram for the given system.

OR

Q.4 **(a)** (i) Discuss Open- ended and Closed-ended interview Questions. **04**
  (ii) Discuss in brief TPS, KWS , GDSS **03**

(b) Define state diagram. Also explain state, event and transaction in detail. Draw the state chart diagram for ATM system. **07**

Q.5 **(a)** Explain in detail how system analyst react to working with the prototype and how good the fit is between their needs and the prototyped features of the system. **07**

(b) (i) Write a difference between association and aggregation. **02**
  (ii) Define the term multiplicity and generalization. **02**
  (iii) Which are the building blocks of UML? Give one example of each. **03**

OR

Q.5 **(a)** Which are the six basic Query Types? Also explain Query Methods. (answer in approximately 250 words) **07**

(b) Discuss the concept of forking, joining, swimlanes and object flow in the Activity diagram giving suitable example. **07**

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