

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-III • EXAMINATION – WINTER • 2014

Subject Code: 2630001

Date: 24-12-2014

**Subject Name: Structured and Object Oriented Analysis
and Design Methodology**

Time: 10:30 am - 01:00 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)** Fill in the blanks **07**
- i. Number of instances of class may have _____
 - ii. _____ is a form of aggregation with strong ownership.
 - iii. _____ stereotype is apply when modeling interaction among objects.
 - iv. _____ gives functional requirement of the system in object oriented modeling concept.
 - v. Two popular query methods in structured approach are _____ and _____
 - vi. The _____ systems were developed to process large amount of data for routine business information.
 - vii. Role of system analyst can be _____ and _____.
- (b)** Answer the following questions in brief. **07**
- i. List various tools for structured analysis with its purpose.
 - ii. List down any two mistakes found while drawing DFD.
 - iii. Give one advantage and disadvantage of CASE tool.
 - iv. Give purpose of UML diagram.
 - v. Give at least two difference between extend and include relation in use case diagram.
 - vi. Discuss concept of composition in class diagram.
 - vii. What is JAD? Give purpose and its one advantage.
- Q.2 (a)** i. Draw Decision table and Decision tree for the following rules: **04**
- if 'X' then 'C1'
else if 'Y' then 'C2'
else 'C3'
end if
- ii. Discuss the concept of SDLC and its importance in development of the system. **03**
- (b)** Attempt the following questions: **07**
- i. Discuss in brief Questionnaires method. Also discuss the use of pyramid structure, funnel structure and diamond structure for arranging questions in logical order.
 - ii. Discuss Open- ended and Closed-ended interview Questions.
- OR**
- (b)** i. Explain concept of Data Dictionary giving example **07**
- ii. Discuss various methods for validating input transactions
 - iii. Discuss various types of Feedback method for users.

- Q.3** Attempt the following questions **14**
- Discuss various methods for different types of User Interface.
 - Give any four general guidelines for designing Web Sites.
 - What is n-ary association? Discuss it with example.
 - Discuss visibility of class diagram giving suitable example.
 - Discuss three models which can be view as design technique in object oriented modeling.

OR

- Q.3 (a)** Categorize the following relationships into generalization, aggregation or association. **07**
- A country has a capital city
 - A dining philosopher uses a fork
 - A file is ordinary file or directory file.
 - A polygon is composed of an ordered set of points.
 - A student takes a course from a professor.
 - A person uses computer language on a project.
 - File contains record.

- (b)** Draw DFD for the following case study. **07**

World Trend Company is a supplier of high quality and fashionable clothing. Customer place order by telephone or mailing. When customer order comes in, the order is checked with inventory control department and if item is out of stock, and then inventory control department is notified. Packing slips and bills for the ordered items are prepared to deliver the product. The customer will receive the item along with bill statement. An accounts department will receive the report of the product once in a month.

- Q.4 (a)** Discuss building blocks of UML diagram. **07**
- (b)** Discuss the concept of Activity diagram showing the concept of fork, join and swimlanes taking suitable example. **07**

OR

- Q.4 (a)** Consider online reservation system. Do as directed. **07**
- List two actors.
 - List any two usecases.
 - Prepare usecase diagram for the online train reservation system.

- (b)** Discuss uses of class diagram. Also discuss the stereotype that apply to class diagram. **07**

- Q.5 (a)** Explain the concept of Sequence diagram giving example. **07**
- (b)** Discuss signal event, change event and time event of state modeling giving example. **07**

OR

- Q.5 (a)** Draw statechart diagram for phone line activities with various states such as (idle, dialtone, dialing, connecting, ringing, connected, disconnected, busytone, warning, timeout, etc.). **07**

- (b)** Draw class diagram for Hotel Management System (taking your own assumptions) and also draw activity diagram for ordering of the food items by the customer. **07**
