

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER- IV • EXAMINATION – SUMMER- 2015

Subject Code: 140703

Date: 01/06/2015

Subject Name: Object Oriented Analysis Design and UML

Time: 10.30am-01.00pm

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 Object Oriented Model, Dynamic Model, Functional Model and Interaction Model & Relation among these models. **07**

(b) Draw the state of a Car as an aggregation of part states (ignition, transmission, accelerator, brake). Draw the state diagrams of all the part states. **07**

Q.2 (a) What is inheritance? List the different types of inheritance and explain how it encourages reusability and sharing. **07**

(b) Explain 'ordered', 'bags', 'sequences' in class diagram with suitable examples. **07**

OR

(b) Define following Terms: Derived data , Abstract Class , Generalization, Multiplicity, Constrains, Metadata, Package. **07**

Q.3 (a) What is the purpose of class modeling? Explain following concept with example. **07**

i) Aggregation versus association

ii) Aggregation versus composition

(b) What is concurrency? Explain 'aggregation concurrency' and 'concurrency within an object' represented by state model with suitable example. **07**

OR

Q.3 (a) What is the purpose of one shot state diagram? What is the difference between continuous loops or one shot life cycle state diagrams? Draw the one shot diagram for the chess game. **07**

(b) Explain the following terms in relation to generalization and inheritance. **07**

a. Generalization set name

b. override

Q.4 (a) Write Scenario and Sequence diagram for Operation of a car cruise control include an encounter with slow-moving traffic that requires you to disengage and then resume control. **07**

(b) Which steps are required to construct an "Application Interaction Model"? Discuss in detail. **07**

OR

Q.4 (a) List and explain the steps of constructing domain class model. **07**

(b) Define the purpose of following terms with suitable example and UML notations (i) swimlane (ii) use case generalization (iii) activity (iv)effect **07**

Q.5 (a) Explain the following terms in relation to class design. **07**

(a) Refactoring (b) reification

(b) Explain how to choose a Software Control Strategy **07**

OR

Q.5 (a) Give the list of common architectural styles. Explain batch transformation in detail. **07**

(b) What is the purpose of design optimization? Briefly discuss the tasks of design optimization. **07**
