Seat No:_____ Enrollment No:_____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Summer 2016 - 17 Examination

Semester: 4 **Date: 05/06/2017**
Subject Code: 03105251 **Time: 10 am to 1 pm**
Subject Name: Object Oriented Analysis & Design with UML **Total Marks: 100**

Instructions:
1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write section-A, section-B on separate answer sheets.

SECTION: A

Q:1 (a) What is OOM? Explain the types of model with their purpose in brief. **(05)**

Q:1 (b) What is the difference between multiplicity and cardinality? **(05)**

Q:2 (a) Describe in detail the stages of Object oriented methodology. **(07)**

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

OR

Q:2 (b) Explain 'ordered', 'bags', 'sequences' in class diagram with suitable examples. **(07)**

Q:3 (a) Prepare a class diagram for a graphical document editor that supports grouping. Assume that a document consists of several sheets. Each sheet contains drawing objects, including text, geometrical objects and groups. A group is simply a set of drawing objects, possibly including other groups. A group must also contain at least two drawing objects. A drawing object can be a direct member of at most one group. Geometrical objects include circles, ellipses, rectangles, lines, and squares. **(07)**

Q:3 (b) List all kinds of control information represented by Dynamic model. Prepare State chart diagram for Two Party Phone Call. **(06)**

OR

Q:3 (b) What the use is of "include" and "extends" relationships in use-case diagram? Draw the use-case diagram for Online Admission Process for Engineering Students in Gujarat. **(06)**

Q:4 (a) Define the purpose of following terms with suitable example and UML notations with respect to class model. (1) Qualified association (2) Association class (3) Aggregation (4) Multiplicity (5) Metadata (6) Derived data (7) Package **(07)**

Q:4 (b) Explain usecase diagram with example. **(06)**

SECTION: B

Q:1 (a) Explain Sequence Diagram with suitable diagram. **(05)**

Q:1 (b) Explain Fork and Join with example. **(05)**

Q.2 (a) Give practical situations, when to use the following diagram: **(07)**
a. Use-Case Diagram
b. Object Diagram
c. Interaction diagram

Q:2 (b) Differentiate state and event. List and explain different types of events. **(06)**

OR

Q:2 (b)Draw activity diagram for ATM transaction. **(06)**

Q:3 (a) Differentiate between object oriented analysis and object oriented design. **(07)**

Q:3 (b)Describe software development life cycle. **(06)**

OR

Q:3 (b) What is the purpose of design optimization? Briefly discuss the tasks of design optimization **(06)**

Q:4 (a)Explain waterfall development and Iterative Development life cycle styles for Object Oriented approach to software development. **(07)**

Q:4 (b) Why software architecture is so important in system design? Enlist and briefly explain different architectural styles. **(07)**