Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech.winter 2018 - 19 Examination

Semester: 4 **Date:29-12-2018**
Subject Code: 03105251 **Time:10:30 am to 01:00pm**
Subject Name: Object Oriented Analysis & Design with UML **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 **Objective Type Questions** - (Fill in the blanks, one word answer, MCQ) (All are compulsory) (Each of one mark) **(15)**

1. What will be the multiplicity between browser and web pages?
   a) One to One b) One to many
   c) many to many d) many to one

2. The _____ model describes the static structure of objects in a system and their relationship.

3. Aggregation is a special form of association, not an independent concept? **True/False**

4. Aggregation is a _____ kind of relationship.
   a) has-a b)is- a
   c)to-a d)was-a

5. The sequence diagrams basically display their lifelines of participants as they exchange messages. **True/False**

6. _____ model Describes interactions between objects.

7. UML is a programming language? **True/False**

8. The UML is a_____ language for specifying, visualizing, constructing and documenting the artifacts of the software system.-

9. Identify the relationships into generalization, aggregation or Composition.
   College and class rooms.

10. The same operation behaves differently for different classes are called?
    a) Class b) Data Abstraction
    c) Polymorphism d) Inheritance

11. Inheritance in object-oriented modeling can be used to
    a) generalize classes b) specialize classes
    c) generalize and specialize classes d) create new class

12. Define Inheritance.

13. Define polymorphism.

14. What is multiplicity?

15. A link is an instance of association? **True/False**

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) What is UML? Explain the types of model with their purpose in brief.

B) What is an abstract class? Write the difference between abstract class and concrete class.

C) What do you mean by Aggregation? Explain with an example.

D) Is aggregation is same as association? Write the difference between aggregation and composition.

Q.3 A) Explain Events, states, transitions and conditions with example. **(07)**

B) What is software development process? Enlist steps of software development process? Differentiate iterative process model from waterfall model **(08)**

OR

B) Prepare object diagrams showing at least 10 relationships among the following object classes. Include associations, aggregations, and generalizations. Use qualified associations and show multiplicity balls in your diagrams. You do not need to show attributes or operations. Use association names where needed. As you prepare the diagrams, you may add additional object classes. **(08)**

school, playground, principal, school board, classroom, book, student, teacher, cafeteria, restroom, computer, desk, chair, ruler, door, swing

Q.4 A) Prepare a class diagram for each group of classes. Add at least 10 relationships (associations and generalizations) to each diagram. **(07)**

File system, file, ASCII file, binary file, directory file, disc, drive, track, and sector.

OR

A) What is the use of "include" and "extends" relationships in use-case diagram? Draw the use-case diagram for Online Admission Process for Engineering Students in Parul University. **(07)**

B) Define the following with suitable example of activity diagram. **(08)**

Initial node, Control flow, Activity, Branch, Merge, fork, Join and Final node.