

Time: 3 Hours

SOFTWARE DEVELOPMENT METHODOLOGIES
(CT-514)

- Instructions:** 1. Attempt all questions
2. Explain giving examples where necessary

Q1. Attempt any two 10

- a) What is Methodology? Explain with examples
- b) Describe briefly major aspects of an effective life cycle methodology for OO developments
- c) Explain briefly benefits of OO Analysis and Design

Q2. Attempt any three 12

- a) Explain OO Analysis
- b) Explain OO Design
- c) Define the approaches for Identifying Objects & Classes
- d) Explain the management of OO Projects

Q3.

- a) Define 06 key principles of Business-Driven development for RUP (06)
- b) Define Project life cycle phases for RUP (06)
- c) Describe any three for RUP: (09)
 - a. Business modeling discipline
 - b. Analysis & Design discipline
 - c. Implementation discipline
 - d. Test discipline
 - e. Deployment discipline

Q4. Attempt any two 10

- a) What is UML? Describe goals of UML
- b) Just name and define briefly UML diagrams
- c) Describe in detail USE Case **OR** Class Diagram.

Part 1

07

Make a class diagram and explain it that captures the following:

A company consists of departments and employees. A department has responsibility for zero, one or more projects. A company has: name, address and telephone. A department has name. A project has name. An employee has name, address, a social security number (SSN) and is participating in zero, one or more projects.

Let the class diagram show: classes with attributes, relations (with names) between the classes and multiplicity for the relations.

Part 2

10

Extend the class diagram from Part 1 with the following:

- A project has a leader that is an employee.
- A company has one or more owners (juristic persons are not considered); the system must keep track of the owners name, address and social security number. The owner might be an employee or not!
- An employee is assigned to one or more departments in the company that he works for.

For each assignment a title (e.g. *programmer*), salary and extent is defined (e.g. an employee can work 25% for one department and 75% for another department. the first assignment has extent 25 and the last 75).

- Tax rate is given for each company the employee is working for (the tax rate applies to all assignments in the same company). An employee number is also recorded for each company the employee is working for.

Introduce role names for relations where you find it useful