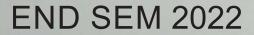
## NATIONAL INSTITUTE OF TECHNOLOGY, JAMSHEDPUR AUTUMN SEMESTER 2021-22

## Department of Computer Science & Engineering

### **End-Semester Examination**

Course Title: Object Oriented Analysis & Design Course Code: CA32106 Max. Marks: 50 Semester-**Duration:** 3 hrs Course Instructor/Instructor in-charge: Dr. Sanjay Kumar All Questions are mandatory, unnecessary answer will attract negative marking. (05)Q.1 (a) Explain the different phases of System Development Life Cycle (SDLC). (05)(b) What is Prototyping? Discuss few advantages of prototyping. Q.2 (a) Discuss the role of Decision trees and Decision tables for structured analysis of the system. (05) (05)(b) Explain the use of logical and physical data flow diagrams in system design. (05)Q.3 (a) What is UML? Discuss the basic principles of UML. (05)(b) What do you understand by module coupling and cohesion? Q.4 (a) Describe the basic activities of Object-Oriented Analysis and explain how use case modelling (05)is helpful in analysis. (b) Differentiate between aggregation and composition with example. (05)Q.5 (a) Draw the complete use case diagram for the library system and explain the relationships (05)and responsibilities of various actors. (05)(b) Write short note on Software Quality Assurance.

!!! Good Luck!!!\_\_\_\_





# Department of Computer Science and Engineering National Institute of Technology Jamshedpur

End Semester Examination, April 2022-2023

Programme: MCA, IInd Semester

Course Name: Object Oriented Analysis and Design

Course Instructor: Dr. Ashish Kumar Sahu

Max. Marks: 50 Course Code: CA3203

Time: 3 Hours

10

4+4

P.T.O

#### Instructions:

- 1. Attempt all the questions.
- 2. Write parts of a question at one place in the answer sheet.
- 3. Marks of the questions and their part are indicated in the right hand margin.
- 4. Missing data, if any, may be assumed suitably.
- Read a below problem and identity the followings QI

I. Classes

- Each class attributes and operations II.
- Relationship among classes III.

And then draw a neat and clean class diagram.

A bank has many branches. In each zone, one branch is designated as the zonal head office that supervises the other branches in that zone. Each branch can have multiple accounts and loans. An account may be either a savings account or a current account. A customer may open both a savings account and a current account. However, a customer must not have more than one savings account or current account. A customer may also procure loans from the bank.

- Explain Generalization-Specialization hierarchy with the help of example. Q2 I.
  - Define use case relationships a)Include b) Extend II.
- Identify functional and non-functional requirements for the application of online pizza 4+4 Q3 I.
  - A University conducts examinations and the results are announced. Prepare a report II. for the following:
    - Print the marks in the register number order semester wise for each department
    - Print the Arrear list semester wise
    - Prepare a Rank list for each department
    - Prepare the final aggregate mark list for final year students.

Identify the problem statement and design use case diagram.

Write all nine steps of domain analysis model with explanations. 3+5 Q4 I.

The following is a list of candidate classes. Prepare a list of classes that should be II. eliminated for any of the reasons given. Give a reason for each elimination. If there is more than one reason, give the main one.

character, line, x coordinate, y coordinate, link, position, length, width, collection, selection, menu, mouse, button, computer, drawing, drawing file, sheet, pop-up, point, menu item, selected object, selected line, selected box, selected text, file name, box, buffer, line segment coordinate, connection, text, name, origin, scale factor, corner point, end point, graphics object.

**END SEM 2023** 

- Q5 I. Write all ten steps for Application Interaction Model with explanation.
  - II. Differentiate between layers and partitions in system Design. Also write key points for open and closed in layer architecture.

4+4

- Q6

  I. How modularity and software cost are related in terms of total cost, cost to integrate 4+4 and cost/module. Explain it with neat and clean diagram.
  - Explain all types of cohesion for designing an application based on modularity concept.

\*\*\*\*\*\*\*Best of Luck\*\*\*\*\*\*