Indian Institute of Information Technology Vadodara

Course ID: CS 201 **Course name**: Object Oriented Design and Programming
Full Marks: 30 **Date**: 18.10.2022 **Exam Duration:** 120 minutes

Instructions: Attempt All Questions Sequentially.

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1. Differentiate between Composition and Aggregation in class diagram with examples.

[2]

2. Software engineering considers both technical matters and non-technical matters. List two technical matters and two non-technical matters that are within the domain of software engineering.

[2]

3. What are the different strategies followed for eliminating code duplication within a single class. Write a program code in Java or C++ where a single class performs multiple tasks without code duplication.

[2+4]

4. Choose the correct answer among the below two options and answer the associated questions accordingly:
   - All methods and attributes in the Superclass are by default available to all the Subclasses. Draw and mention how your class diagram depicts such a scenario.
   - All methods and attributes in the Superclass are not by default available to all the Subclasses. Draw and mention how your class diagram depicts such a scenario.

[4]

5. Which of the following is more appropriate for representing a system. Explain your choice with appropriate justification;
   - Use-case diagram
   - Sequence diagram
   - Class diagram

[4]

6. Mention with explanation and sample diagrams related to all the different types of relationships that multiple classes can have in a class diagram.

[6]

7. Explain the following with the help of diagrams:
   - Extend relationship in use-case diagram
   - Include relationship in use-case diagram
   - Sloping line in sequence diagram

[6]