



CBCS SCHEME

18CS45

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Fourth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026

Object Oriented Concepts

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain reference variable with example. (06 Marks)
- b. Define friend function. Write a C++ program to find the sum of two numbers in two different class using friend function add(). (08 Marks)
- c. Define a class. Explain the syntax of class declaration in C++ using suitable examples. (06 Marks)

OR

- 2 a. List the difference between procedure oriented programming and object oriented programming. (06 Marks)
- b. Explain function prototyping in C++ with suitable example. (06 Marks)
- c. What is function overloading? Write a C++ program to define three overloaded function area() to find area of square, circle and rectangle. (08 Marks)

Module-2

- 3 a. What is a constructor? List the different types of constructors and explain default constructor with example. (06 Marks)
- b. How do name space help in preventing pollution of the global name space? (06 Marks)
- c. Write a C++ program for array of objects of 60 students with data members USN, name, member functions to read data and to print the data. (08 Marks)

OR

- 4 a. List and explain Java buzzwords. (06 Marks)
- b. Explain bitwise operators in Java. (06 Marks)
- c. Write a Java program to read a year and check if it is a leap year or not. (08 Marks)

Module-3

- 5 a. Explain constructors in Java with suitable example. (06 Marks)
- b. What is method overriding in Java? Explain with suitable example. (08 Marks)
- c. Explain the concept of garbage collection in Java. (06 Marks)

OR

- 6 a. Discuss Java's exception handling model, with suitable program that demonstrates multiple exception types. (06 Marks)
- b. What is inheritance? Explain multilevel inheritance with suitable Java program. (08 Marks)
- c. Explain the keywords : "this" and "super". (06 Marks)

Module-4

- 7 a. What are packages in Java? Explain how to create and use userdefined packages with example. (08 Marks)
- b. Explain how threads are created in Java. (06 Marks)
- c. Explain isAlive() and join() methods in Java. (06 Marks)

OR

- 8 a. Explain thread priorities in Java. (06 Marks)
- b. Discuss the different use of "synchronized" keyword. (06 Marks)
- c. Explain interface in Java with example. (08 Marks)

Module-5

- 9 a. Explain the delegation event model. (06 Marks)
- b. List any 5 commonly used event listener interface and explain the ActionListener interface. (08 Marks)
- c. Define Adapter Class. Explain with suitable Java program. (06 Marks)

OR

- 10 a. Explain the following Java classes with suitable examples:
i) JLabel ii) JTextField (06 Marks)
- b. Write a Java program to create a button, on clicking which displays "Welcome to VTU". (08 Marks)
- c. Explain components and containers using in a swing GUI. (06 Marks)
