

BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-III Computer Science & Business Systems : SUMMER : 2025
SUBJECT: OBJECT ORIENTED PROGRAMMING

Day : Thursday
Date : 15/05/2025

S-29217-2025

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.:

- 1) All questions are **Compulsory**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Draw neat diagrams **WHEREVER** necessary.
- 4) Assume suitable data, if necessary.

Q.1 Define Array. Write the syntax of Array. How do array elements get initialized? (10)
Write a program to sort an array of 5 elements in ascending order using the bubble sort technique.

OR

Discuss the importance of standard library functions in C. Provide examples of commonly used functions from the <string.h>, <math.h> and <stdlib.h> libraries, demonstrating their functionality with sample code. (10)

Q.2 Describe the concept of reference variable with suitable example. Also differentiate between call by reference and reference variable. (10)

OR

Differentiate between # define constant and const with a suitable example. (10)

Q.3 Explain why Object-Oriented Programming (OOP) is considered necessary over procedural programming. Discuss the key features that make OOP more suitable for handling complex software projects. (10)

OR

How are member functions defining in C++? Also write applications of OOP in detail. (10)

Q.4 Define Friend Function. Write its characteristics and importance. Explain use of friend function with the help of suitable example. (10)

OR

Explain the concept of data member scope in C++ and how it applies to classes. Discuss the use of the scope resolution operator (::) in C++ with examples, particularly in the context of accessing class members. (10)

Q.5 Why there is need to pass parameter to base class constructor. Explain it with a suitable example of passing parameters to the base class constructor. (10)

OR

Explain the concept of function and operator overloading in C++. How does overloading improve the flexibility of a program? Provide examples to demonstrate both function and operator overloading. (10)

Q.6 Distinguish between overloaded functions and function templates with suitable examples. (10)

OR

Explain the concept of templates in C++. How do templates provide generic programming capabilities? Provide an example of a function template to demonstrate how templates can be used to write a single function that works for multiple data types. (10)

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