BACHELOR OF TECHNOLOGY (CBCS - 2023)
B. Tech. Sem-III Computer Science & Business Systems : WINTER : 2024
SUBJECT: OBJECT ORIENTED PROGRAMMING

Day : Monday
Date : 09/12/2024

W-29217-2024

Time : 10:00 AM-01:00 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 What is procedural programming? Discuss its key characteristics and compare it with Object-Oriented Programming. Give an example of procedural programming using C. **(10)**

OR

Define Preprocessor directives of C? List and explain types of Preprocessor directives with suitable example. **(10)**

Q.2 Define the Inline function. Write the syntax of Inline function. List the Limitation of the Inline function and how it differs from macro. **(10)**

OR

Differentiate Between passing pointer by value and reference. Explain in detail with suitable. **(10)**

Q.3 Define Class and Object? How to define member function inside and outside of class explain it with the help of suitable example. **(10)**

OR

Define Data Hiding in context of Object-Oriented Programming. Explain how it contributes to the security and reliability of software systems. Provide examples to illustrate how data hiding is implemented in C++. **(10)**

Q.4 Describe the concept of Error Handling in C++. Explain Keywords Try, Catch, and Throw keywords with suitable example. **(10)**

OR

Explain concept of a friend class in C++. How does it affect encapsulation? Provide an example where one class is declared as a friend of another and can access its private members. **(10)**

Q.5 Describe the concept of a virtual base class. When do we make it? Explain it with a suitable example. **(10)**

OR

What is a class hierarchy in C++? Explain how class hierarchies are established through inheritance, and demonstrate with an example of a multi-level class hierarchy. **(10)**

Q.6 Describe the concept of function templates in C++. How does a function template differ from function overloading? Provide an example to demonstrate a function templates and explain how the compiler resolves the correct function call at compile time. **(10)**

OR

Discuss how file handling is implemented in C++ using file streams. Explain the process of reading from and writing to a file with examples. Demonstrate the use of ifstream and ofstream for file operations. **(10)**

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