SHRI VISHWAKARMA SKILL UNIVERSITY, DUDHOLA, PALWAL

B. Tech. Computer Science Engineering AI/ML, Fourth Semester

FIRST SESSIONAL TEST (SESSION: 2023- 2024)

Subject Name: Object Oriented Programming using C++ Time: 60 minutes

Subject Code: ETCS204 Maximum Marks: 20

SECTION A

Q 1. Very Short answers type (remembering, understanding) (5 questions are compulsory) 5 × 1 = 5

Sl.	Question Description	RBT Level	CO Mapped
Q1.1	What is a namespace in C++?	Remember	CO1
Q1.2	What is the purpose of the 'cout' statement in C++?	Understand	CO1
Q1.3	How do you define a constructor in a C++ class?	Remember	CO3
Q1.4	How do structures and classes differ in C++?	Understand	CO1
Q1.5	How do you delete dynamically allocated memory in C++?	Understand	CO2

SECTION B

Q2. Short answers type (understanding, applying) (Attempt any 2) 2½ × 2 = 5

Sl.	Question Description	RBT Level	CO Mapped
Q2.1	How might one utilize object-oriented programming principles to create a program that efficiently performs matrix multiplication?	Apply	CO3
Q2 2	How do functions in C++ simplify the process of designing and organizing a basic calculator application? Illustrate the use of functions to perform arithmetic operations like addition, subtraction, multiplication, and division.	Understand, Apply	CO3
Q2.3	Discuss the benefits of encapsulation and data hiding in C++ programming. Explain how these concepts help in organizing code and protecting data integrity. Provide a simple example to illustrate how encapsulation hides implementation details and enhances code maintainability.	Understand, Apply	CO1, CO2

SECTION C

Q3. Long answers type (understanding, applying, analysing, evaluating) (Attempt any 2) 5 × 2 = 10

Sl.	Question Description	RBT Level	CO Mapped
Q3.1	How can constructors in C++ be effectively utilized in different scenarios to achieve specific objectives? Provide a case study that explores the implementation of various types of constructors, such as default, parameterized, and copy constructors, within a complex software system. Illustrate each type with relevant C++ code snippets and explain their significance in the context of the case study.	Remember, Apply	CO2
Q3.2	How does the concept of classes and objects simplify the development of a simple banking application? Create a basic banking system using C++ classes to represent accounts, and illustrate how objects are instantiated from these classes to perform operations such as deposits, withdrawals, and balance inquiries.	Understand, Apply	CO2,CO3
Q3.3	In the context of designing a comprehensive library management system, how do the fundamental principles of functions in C++ play a crucial role in achieving modularity and code reusability? Discuss the significance of functions in managing different aspects of the library system, such as adding new books, searching for books, and calculating late fees.	Understand, Apply	CO2,CO3