Roll No. ....

(05/25)

14311

B.C.A. EXAMINATION

(For Batch 2021 to 2023 Only)

(Second Semester)

PROGRAMMING IN C++

BCA-21

Time : Three Hours　　　　*Maximum Marks : 80*

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. Answer the following parts :　　　**2 each**

   (a) Describe encapsulation with an example.

   (b) Discuss differences between functional and object-oriented paradigms.

(c) Differentiate between object identity and object state.

(d) Discuss dynamic memory allocation in C++.

(e) Define parametric polymorphism.

(f) What is the difference between function overloading and overriding ?

(g) Explain the significance of multiple inheritance.

(h) How are exceptions caught and handled in C++ ?

Unit I

2. Describe the fundamental concepts of object-oriented programming with examples. Also, discuss their advantages.   **16**

3. Illustrate the use of 'cin', 'cout', 'new' and 'delete' operators with a complete C++ program. Also, discuss the key differences between C and C++.   **16**

Unit II

4. Explain the structure and use of a C++ class with attributes and methods. Explain the various types of C++ classes and their uses.   **16**

5. Discuss the significance of default parameter values and object types with examples. Also, describe the constructor and destructor functions.   **16**

Unit III

6. Explain, how polymorphism is achieved using method overloading and operator overloading.   **16**

7. Differentiate between inheritance and aggregation with code examples. Also, discuss the meaning and use of public, private and protected keywords.   **16**

Unit IV

8. Explain how templates in C++ support generic programming. Also, differentiate between function overloading and function overriding.

16

9. Discuss exception handling in C++ with the use of multiple catch blocks and try-catch-finally structure.

16

❖❖❖❖❖❖❖