(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 0 9 2 2

Exam. Code : 0 0 2 8

Bachelor of Computer Applications 2nd Semester

(2054)

OBJECT ORIENTED PROGRAMMING USING C++

Paper : BCA—16-204

Time Allowed : Three Hours] **[Maximum Marks : 65**

Note :— Candidate is required to attempt ***five*** questions in all including Question No. **9** (which is compulsory) and attempt remaining ***four*** questions by selecting ***one*** question from each Section.

SECTION—A

1. (a) Differentiate between Object Oriented Programming Language and Procedure Oriented Programming Language. 7

   (b) What are the applications of OOPs ? Discuss in detail. 6

2. (a) Differentiate with a suitable example about the private and public members of the class. What is the significance of private data members of a class ? 7

   (b) Write a program in C++ to access the private members of the class. 6

SECTION—B

3. Define an inline function in C++ and explain how it differs from a regular function. Describe the advantages and disadvantages of using inline functions. Provide an example illustrating the use of an inline function in a class. 13

4. Discuss the concept of operator overloading in C++ and its significance. Explain how type conversion works in C++ for basic types and user-defined types. Provide examples demonstrating conversion from a basic type to a user-defined type, conversion from a user-defined type to a basic type, and conversion from one user-defined type to another user-defined type. Discuss the considerations and limitations of operator overloading and type conversion. 13

SECTION—C

5. Describe the types of inheritance in C. Discuss the advantages and disadvantages of each type of inheritance. 13

6. Explain the concept of early binding in C++. Discuss how early binding is related to polymorphism and when it occurs in the program execution. 13

SECTION—D

7. Write a C++ function that takes two integers as input and calculates their division. Use exception handling to catch and handle any divide-by-zero exceptions that may occur. 13

8. Discuss binary file operations in C++. Explain how data can be read from and written to a binary file using file streams. 13

(Compulsory Question)

9. (a) Explain what destructors are and how they are used in C++. 3

(b) Discuss the advantages and limitations of using arrays within a class. 2

(c) Explain the difference between static and non-static members. 2

(d) Explain the concept of making a protected member inheritable in C++. 2

(e) Discuss the benefits of using polymorphism in software design. 2

(f) Define exception handling in C++. 2