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**Bachelor of Computer Application 2<sup>nd</sup> Semester**

**1059**

**OBJECT ORIENTED PROGRAMMING USING C++**

**Paper-BCA-16-204**

**Time Allowed : Three Hours]**

**[Maximum Marks : 65**

**Note :—** Attempt one question from each Section and the entire compulsory question. All questions carry equal marks.

**SECTION-A**

1. Differentiate between encapsulation and abstraction. Which access specifier can help to achieve data hiding in C++ ? Demonstrate with an example program. 13
2. Discuss the following :
  - (a) Manipulators
  - (b) Type casting. 7,6

**SECTION-B**

3. (a) What is the need of a friend function in a C++ program ?  
What are the rules of implementing it ? 7
- (b) How are static members accessed in C++ ? 6
4. (a) Write a program to add two matrices using operator overloading. 7
- (b) How is a constructor different from an ordinary function ?  
Discuss copy constructor. 6

### SECTION-C

5. When should inheritance be used in an object oriented program ? Describe multilevel inheritance and hybrid inheritance with practical examples. 13
6. Why is late binding important in OOPS ? What is the role of virtual functions here ? Demonstrate the implementation. 13

### SECTION-D

7. What should be placed inside a try block ? When do we use multiple catch handlers ? What are the benefits achieved ? 13
8. Describe the various classes available for file operations. What are the different ways of opening a file and which one is used when ? 13

### SECTION-E

#### (Compulsory Question)

9. (a) Function overloading 2
- (b) Operators that cannot use friend functions 2
- (c) Making a protected member inheritable 2
- (d) File modes 3
- (e) Conversion from one class to another class type. 4