

(i) Printed Pages : 3

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(ii) Questions : 9

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B.A./B.Sc. (General) 3rd Semester

1125

COMPUTER SCIENCE

Paper—A03 : Object Oriented Programming (Using C++)

Time Allowed : Three Hours]

[Maximum Marks : 65

Note :— Attempt **five** questions in all including the compulsory question and taking **one** question each from Sections A-D.

(Compulsory Question)

1. (a) What is data abstraction ?
- (b) What is function of cout and cin ?
- (c) What are the header files used in C++ ?
- (d) How do you declare array inside a class ?
- (e) What is use of virtual destructors ?
- (f) How is nesting of classes done ?

13

SECTION—A

2. (a) Describe the following concepts of Object Oriented Programming in detail : Encapsulation, Data Hiding, Polymorphism and Message Passing.
- (b) Explain the structure of a C++ program with suitable code.

7,6

3. (a) How do you create a class and its object ? How do you access the class data members and member functions ? Explain with suitable code.
- (b) Discuss the various ways of passing objects as function arguments. 7,6

SECTION—B

4. (a) What are static members and static functions ? Why are they used in C++ ? With help of an example show how are they used in C++ program ?
- (b) Discuss the various uses of a scope resolution operator used in C++. 7,6
5. What are constructors and destructors ? What is the benefit of using them in your program ? With help of suitable C++ code explain the working of different types of constructor and the destructor. 13

SECTION—C

6. (a) What do you understand from function overloading ? How is it performed ? Explain with appropriate code.
- (b) Explain in detail the various types of inheritance techniques used in C++. 7,6
7. What is a derived class and a base class ? How do you define a derived class ? What happens if a class is derived privately, publicly or using protected mode ? Write a C++ code to implement multilevel Inheritance in C++. 13

SECTION—D

8. What are virtual functions ? How are they different from pure virtual functions ? How are both of them implemented ? Discuss with appropriate code. 13
9. Discuss in detail the file handling mechanism used in C++. What are the various functions used for reading and writing to the file ? What are the various file opening modes ? 13