(i) Printed Pages : 2 Roll No. .....

(ii) Questions : 9 Sub. Code : 0 2 8 0

Exam. Code : 0 0 0 3

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

1128

INFORMATION TECHNOLOGY

Paper–A : Computer Programming Using C++

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

Note :— Attempt **FIVE** questions in all, including Q-**9** in Section-**E**, which is compulsory, and taking ONE each from Section-**A** to Section-**D**.

SECTION—A

1. What do you understand by Object Oriented programming ? Explain the difference between Procedure Oriented and Object Oriented computer programming language. Give a definition of abstraction and inheritance and explain what advantages they give to an object-oriented software design. Explain by taking appropriate examples. 13

2. Define and differentiate the following with examples :

   (a) Call by value and call by reference

   (b) Class and object. 6,7

SECTION—B

3. (a) What is a destructor in C++ and what does it do ? How do you make a destructor ? When is a destructor called ?

   (b) Explain the concept of nested classes in C++ and its purpose with a suitable example. 6,7

4. (a) Differentiate and give examples to bring out the difference between function overloading and operator overloading in C++.

(b) Describe the syntax of multiple inheritances in C++. When do we use such an inheritance ? Explain with an example. 6,7

SECTION—C

5. Explain the following in C++ with examples :

(a) Polymorphism with pointers

(b) Data Abstraction. 6,7

6. (a) What is a file Stream ? Explain various C++ file stream classes in detail.

(b) Write a C++ program to make a duplicate copy of the data file. 6,7

SECTION—D

7. What is a 'stack' data structure ? Explain. State the steps to implement push and pop operations of a stack in C++. 13

8. Give application of a Queue. Write a C++ function for adding and removing element from a Queue. 13

SECTION—E (Compulsory Question)

9. (a) What is the difference between data type and abstract data type ?

(b) What is the difference between early binding and late binding ?

(c) Give the I/O Stream class hierarchy.

(d) What is the "this" keyword in C++ ?

(e) What is a pure Virtual function ?

(f) Give applications of array data structure.

(g) Define complexity of an algorithm. 6×2,1=13