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

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

Exam. Code : 0 0 0 3

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

(1129)

INFORMATION TECHNOLOGY

Paper—A

(Computer Programming using C++)

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

Note :— Attempt any **ONE** question each from Units–I, II, III and IV. Unit–V is compulsory.

UNIT—I

1. (a) Give differences between OOP and procedure oriented programming. 7

   (b) How to define member functions inside and outside the class declaration ? Give example code. 6

2. (a) Discuss the structure of a C++ program and how the program is compiled and executed. 7

   (b) How to pass the arguments to a function using call by value and call by reference. Give example code. 6

UNIT—II

3. (a) Why is constructor used in a class ? Discuss different types of constructors with the help of suitable example code. 7

   (b) Write a program to find area of a circle, triangle and rectangle using function overloading. 6

4. (a) How to extend the functionality of a class ? Discuss different ways to extend the classes. Give suitable example code. 7

   (b) What do you understand by visibility control ? Explain in detail with the help of example code. 6

UNIT—III

5. (a) What are virtual functions ? What is the use of these functions in a program ? Write an example program to show the behaviour of virtual functions. 7

   (b) Write a program to write a line character by character into a file. Now read the line character by character from the file and print on the screen. 6

6. (a) Differentiate between early binding and late binding. Explain with the help of example code. 7

   (b) How to process a file randomly ? Discuss the functions used for random processing of a file. Give suitable example code. 6

UNIT—IV

7. (a) What are the different types of arrays ? How these arrays are represented in memory ? Discuss any two applications of arrays. 7

   (b) What is stack ? Explain various operations performed on a stack with the help of suitable example(s) ? 6

8. (a) What is linked list ? How elements are added into and deleted from a linked list ? 7

   (b) What is a queue ? How to add an element into and remove an element from a queue ? 6

UNIT—V

9. (a) Give the characteristics of private data members. 2

   (b) What do you understand by nesting of member functions ? 2

   (c) How a destructor is defined ? 2

   (d) What are the advantages of function overloading ? 2

   (e) What are pure virtual functions ? 2

   (f) What is circular linked list ? Give example. 3