

**Paper Code : 21314**

**F-414**

**B.C.A. (Third Semester) Examination, 2021-22**

**(New Course)**

**Paper No. BCA-304-N**

**OBJECT ORIENTED PROGRAMMING USING C++**

**Time : Three Hours ] [ Maximum Marks : 70**

**Note :** Attempt any five questions. All questions carry equal marks.

1. (a) What are the elements of Object Oriented Programming? 7
- (b) What are the various loop control statements in C++? Explain briefly. 7

(1)

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2. (a) What are objects? Describe the syntax of defining objects with example. 7
- (b) List the various restrictions with operator overloading. Write a C++ program to illustrate the overloading of increment operator. 7
3. (a) Define a friend function. Explain the relation of friend function with respect to public, private and protected data members of the class. 7
- (b) Differentiate between private and protected class. Elaborate with suitable example. 7
4. (a) Write a C++ program to calculate the length of entered string. 7
- (b) Define a class template. What are its advantages? 7

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(2)

5. (a) Explain 'dynamic binding' with the help of an example. Give its advantages and disadvantages. 7

(b) Justify the need of virtual function in C++. 7

6. (a) What are the base and derived classes? Give a suitable example of inheritance. 7

(b) What are constructors and destructors? Explain how they differ from normal functions. <https://www.mjpruonline.com>

7. (a) Define pointers. How the arguments are passed in a function using pointers in C++. 7

(b) Write a C++ program to find the factorial of entered number using recursion. 7

8. Write short notes on any four of the following: 3.5×4=14

(i) Inline Functions

(ii) Variables and Constants

(iii) Scope Resolution Operator

(iv) Library Functions

(v) Data Abstraction and Encapsulation

(vi) Break and Continue Statement.