

**2017**

**BCA**

**4th Semester Examination**

**C++ LAB**

**PAPER—2296 (SET-2)**

**(Practical)**

*Full Marks : 100*

*Time : 3 Hours*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

Answer any *two* questions (on Lottery Basis) : 2×25

1. Write a C++ program print first 100 non-Fibonacci numbers.
2. Write a C++ program to overload >> and << operators.
3. Write a C++ program to perform the following series :  
$$S = 1 + 2^2 + 3^3 + 4^4 + \dots + N^N$$
4. Write a C++ program that uses functions :
  - (a) To swap two integers.
  - (b) To swap two characters.

*(Turn Over)*

5. Write a C++ program to overload new and delete operator.
6. Write a C++ program to read/write the contents to/from a file.
7. Write a C++ program to print the following. Take the number of lines as input.

A  
A B  
A B C  
A B C D

8. Write a C++ program to multiply two complex numbers using object as arguments.
9. Write a C++ program to convert a binary number to decimal number.
10. Write a C++ program to overload ++ operator for pre-increment and post-increment.
11. Write a C++ program to remove negative numbers from an array. Use constructor and destructor.
12. Write a C++ program to convert gram to kilogram using basic to class type.
13. Write a C++ program to perform matrix multiplication using friend function.
14. Write a C++ program to implement virtual base class.
15. Write a C++ program to show the concept of pure virtual function and abstract class.

16. Write a C++ program for bubble sort using template.
17. Write a C++ program to search an element from an array using binary search.
18. Write a C++ program to convert a decimal number to hexadecimal number.
19. Write a C++ program to find the sum of individual digits of a positive number.
20. Write a C++ program to overload +, -, \* operators in a class for complex numbers.
21. Write a C++ program to calculate the sum of the following series :

$$1 + \frac{1}{4} + \frac{1}{9} + \frac{1}{16} + \dots$$

22. Write a C++ program to overload the \* operator, to multiply two integer, as well as two floating point numbers.
23. Write a C++ program to read a set of numbers and store them in a file.
24. Write a C++ program to print the following pattern :

```
      1
     1 2 3
    1 2 3 4 5
```

25. Write a C++ program to print all perfect numbers from 1 to 100.

26. Write a C++ program to print twin primes less than 1000. If two consecutive odd numbers are both prime (17,19) then they are known as twin primes.
27. Write a C++ program to implement constructor and destructor.
28. Write a C++ program to check if the private data member of a class is a prime number using friend function.
29. Write a C++ program to overload the unary minus operator using friend function.
30. Write a C++ program to show the use of copy constructor.
31. Write a C++ program to show the use of copy constructor.
32. Write a C++ program to convert a binary number to octal.

### **INSTRUCTIONS**

#### ***Distribution of Marks —***

**Practical Note Book : 05**

**Viva-Voce : 15**

#### ***Experiments —***

**Any two : 50**

**Internal Assessment : 30**

**TOTAL : 100**