

Roll No.

BCA-C-202

B. C. A. (Second Semester) EXAMINATION, 2023-24

OBJECT ORIENTED PROGRAMMING
USING C++

Time : 2 $\frac{1}{2}$ Hours

Maximum Marks : 60

Note : All questions have to be attempted.

Section—A

1. Multiple Choice Type Questions : 1 each
 - (a) What is the size of empty class ? (CO2, BL-1)
 - (i) 4
 - (ii) 1
 - (iii) 0
 - (iv) 2
 - (b) Which of the following is not a type of Constructor in C++ ? (CO2, BL-1)
 - (i) Default constructor
 - (ii) Copy constructor
 - (iii) Friend constructor
 - (iv) Parameterized constructor

- (c) Which of the following type do C++ but not C provide ? (CO1, BL-2)
- (i) double
 - (ii) float
 - (iii) bool
 - (iv) long
- (d) What is used for dereferencing ? (CO3, BL-1)
- (i) pointer with asterisk
 - (ii) pointer without asterisk
 - (iii) value with asterisk
 - (iv) value without asterisk
- (e) Evaluate the output for this program ?
- ```
#include <iostream>
int main()
{ int b,a,x = false + true + 0.4;
std::cout <<x;
return 0; }
```
- (CO1, BL-5)
- (i) syntax error
  - (ii) logical error
  - (iii) 0
  - (iv) 1
- (f) Which of these values can a Boolean variable contain ? (CO1,BL-1)
- (i) True and False

- (ii) 0 and 1  
(iii) Any integer value  
(iv) Both (i) and (ii)
- (g) The keywords cannot be used as variable names.
- (CO1, BL-3)
- (i) True  
(ii) False
- (h) Which among the following but describe the inheritance ?
- (CO3, BL-2)
- (i) Copying the code already written  
(ii) Using the code already written  
(iii) Using already defined function in programming language  
(iv) Using the data and function into derived segment
- (i) The ‘switch’ selection structure must end with the default case.
- (CO1, BL-2)
- (i) True  
(ii) False
- (j) Constructors do not return any value.
- (CO2, BL-3)
- (i) True  
(ii) False

- (k) A class can contain another class in it.  
(CO2, BL-1)
- (i) True  
(ii) False
- (1) << is called as : (CO2, BL-2)
- (i) Insertion operator  
(ii) Add operator  
(iii) Print operator  
(iv) Send operator
2. Attempt any *four* of the following : 3 each
- (a) Describe namespaces. And design a program to explain the concept of scope resolution operator.  
(CO1, BL-6)
- (b) A friend function cannot be used to overload the assignment operator =. Explain why ?  
(CO2, BL-6)
- (c) Create a function using reference variables as arguments to swap the values of a pair of integers.  
(CO2, BL-2)
- (d) Can we use the same function name for the member function of a class and an outside function in the same program file ? If yes, how are they distinguished ? If no, give reasons.  
(CO1, BL-2)
- (e) How does C++ differ with C ? Describe main characteristics of OOP's with example.  
(CO1 ,BL-2)

**Section—B**

3. Attempt any *two* of the following : 6 each

- (a) Compare and contrast between method overloading and method overriding with example.

(CO2, BL-5)

- (b) Explain the concept of C++ file handling. Write a program to read and write the data from a binary file.

(CO4, BL-4)

- (c) Define Array. And design a program to explain the concept of Array of objects with example.

(CO2, BL-6)

4. Attempt any *two* of the following : 6 each

- (a) Define the inline function ? What are its various features ? Write a program using inline function to find the cube of a number.

(CO2, BL-4)

- (b) Explain the concept of Polymorphism. Write a program using Virtual Function.

(CO4, BL-5)

- (c) We know that a private member of a class is not inheritable. Is it any way possible for the object of the derived class to access the private members of the base class ? If yes, how ?

(CO3, BL-6)

5. Attempt any two of the following : 6 each

- (a) Explain the various types of inheritance supported by C++ with diagrams. Write a program to achieve Multiple Inheritance. (CO3, BL-6)

(b) Write class ‘Rectangle’ containing two data ‘length’ and ‘breath’ and four function (i) set data(), (ii) get data(), (iii) display data() and (iv) area(). To set the length and breadth; to get the user input; to display and to find the area of the rectangle respectively. Also, write a program, which declares the objects, arid use the member ?

(CO2, BL-6)

(c) What do you understand by direct and indirect base class ? And design a program to explain the concept of private inheritance. (CO3, BL-6)