BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – Dip.CSE-2022/Dip.CSE-2023
Course Name – OOP with C++
Course Code - DCSE-PC305
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Identify the correct definition of an expression in programming.

a) A keyword that defines a variable
b) A constant value that cannot be changed
c) A statement that performs an action
d) A combination of values, variables, and operators that evaluates to a value

(ii) Identify the correct definition of "expression statement" in C++ programming

a) A statement that declares a variable
b) A statement that performs an action
c) A statement that combines multiple statements into a single statement
d) A statement that evaluates an expression

(iii) Select the definition of break statement in programming

a) Ends execution of the nearest enclosing loop or conditional statement in which it appears
b) Starts execution of the nearest enclosing loop or conditional statement in which it appears
c) Pause execution of the nearest enclosing loop or conditional statement in which it appears
d) Ends execution of the program.

(iv) Select correct option for dynamic memory management in C++

a) Allocating and deallocating memory at compile time
b) Allocating and deallocating memory at runtime
c) Allocating and deallocating memory on the stack
d) Allocating and deallocating memory on the heap

(v) Show correct option for the scope of a class name in C++

a) The area of the program where the class is defined
b) The area of the program where objects of the class can be created
c) The area of the program where the class can be accessed
d) The area of the program where the class is destroyed

(vi) Indicate correct option for the scope of class names in C++

a) Global
b) Local
c) Class
d) None of the mentioned

(vii) Select correct option for operator overloading in C++

a) A way to overload memory allocation and deallocation operators
b) A way to overload functions with the same name but different parameters
c) A way to redefine operators for custom classes or data types
d) A way to define new operators in C++

(viii) Choose type of polymorphism that is achieved through function overriding

a) Coercion polymorphism
b) Parametric polymorphism
c) Inclusion polymorphism
d) None of the mentioned

(ix) Relate the type of inheritance that allows derived classes to access only public members of the base class

a) Public inheritance
b) Private inheritance
c) Protected inheritance
d) None of the mentioned

(x) Choose the keyword that is used to prevent a derived class from overriding a virtual function of the base class

a) Override
b) final
c) sealed
d) None of the mentioned

(xi) Choose the meaning of containership

a) class contains objects of other class types as its members
b) class contains objects of other class types as its objects
c) both a & b
d) none of the mentioned

(xii) Choose the correct syntax of defining a pure virtual function

a) pure virtual return_type func();
b) virtual return_type func() pure;
c) virtual return_type func() = 0;
d) virtual return_type func();

(xiii) Identify virtual inheritance in C++

a) C++ technique to enhance multiple inheritance
b) C++ technique to ensure that a private member of the base class can be accessed somehow
c) C++ technique to avoid multiple inheritances of classes
d) C++ technique to avoid multiple copies of the base class into children/derived class

(xiv) Select the following correctly declares an array in C++

a) array{10};
b) array array[10];
c) int array;
d) int array[10];

(xv) Select keyword is used to define the macros in c++

a) #macro
b) #define
c) macro
d) define

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explain member access operators in C++ with code snippet. (3)
3. Explain STL with its function shortly. (3)
4. Explain constructor with the help of an example. (3)
5. Explain copy constructor with the help of an example. (3)
6. Compare the Local and Global scope of a variable. (3)

OR

Explain the technique of accessing private members of a class in C++. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Demonstrate the use of try, catch, throw and nested try with suitable code snippet in C++. (5)
8. Describe the access mechanism of "constant to a function" with code snippet. (5)
9. Explain static data member and static member function in detail. (5)
10. Write a C++ program to demonstrate binary operator overloading. (5)
11. Compare function overloading with function overriding using an example. (5)
12. Define a class Distance with feet and inch and with a print function to print the distance. (5)
    Write a non-member function max which returns the larger of two distance objects, which are arguments. Write a main program that accepts two distance objects from the user, compare them and display the larger.

OR

Analyze the use of 'this' pointer in C++ with suitable example. (5)

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