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63/1 (SEM-5) CC11/BCAHC5116

2024

COMPUTER APPLICATION

Paper : BCAHC5116

(Object-Oriented Programming in C++)

Full Marks : 60

Pass Marks : 24

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct option from the following :
(any five) $1 \times 5 = 5$

(a) Which among the following iterative control is/are executed at least once despite being the condition fails at the first attempt

(i) while

(ii) do-while

(iii) for

(iv) All of the above

(b) Which of the following is the address operator?

(i) @

(ii) #

(iii) &

(iv) %

(c) Which of the following is a valid way for declaring array in C++?

(i) int array{|10};

(ii) int array[10];

(iii) int Oarray[];

(iv) int 10array[10];

(d) C++ follows

(i) Top-Down Design approach

(ii) Bottom-Up Design approach

(iii) Diagonal approach

(iv) Both (i) and (ii)

(e) Which of the following is an insertion operator in C++?

(i) >>>

(ii) >>

(iii) ->

(iv) <<

(f) Which of the following loop is normally used for a menu-driven program?

(i) do while loop

(ii) for loop

(iii) while loop

(iv) All of the above

(g) By default, members of a class are

(i) Public

(ii) Private

(iii) Protected

(iv) None of the above

(h) Extract the odd one out from the following

(i) auto

(ii) extern

(iii) static

(iv) case

(i) Which symbol is used for implementing inheritance?

(i) :

(ii) ??

(iii) !!!

(iv) :::

(j) What is meant by ofstream in C++?

(i) Writes to a file

(ii) Reads from a file

(iii) Both (i) and (ii)

(iv) None of the above mentioned

2. Answer the following questions : **(any five)**
2×5=10

(a) What is data hiding?

(b) What is the purpose of the three data access modes *private*, *public* and *protected* in C++?

(c) What are the logical operators?

(d) How will you distinguish *do-while* loop with the *while* loop?

(e) State the names of *two* operators that cannot be overloaded in C++.

(f) Name various constants in C++.

(g) What is the purpose of invoking *comments* while writing source codes?

3. Answer the following questions : **(any five)**
5×5=25

(a) What are header files? Name *any four* header files mentioning their purposes.

(b) What is destructor? How does a destructor differ from a constructor? Mention appropriate syntax for defining a destructor.

(c) Differentiate between function overloading and operator overloading. Give example for *any one* of them.

(d) What is a friend function? Explain with an example.

(e) Explain *call by value* and *call by reference* in the context of function calling.

(f) Explain the concepts of early binding and late binding.

(g) Write *one* function by passing an array of integers along with the size of the list through it and return the maximum integer among the array elements.

(h) Write a C++ program for writing to a text file.

(i) What is exception handling? How is exception handling implemented in C++? Give one example program.

4. Answer the following questions : (**any two**)
 $10 \times 2 = 20$

(a) Write a C++ program that facilitates the entering and displaying of the details of few employees by invoking a class named *Employee* with *data members* emp_id (integer), emp_name (characters), district (characters), phone (integer) and salary (float) and suitable *member functions*.

(b) Define various types of constructors. Write a suitable program in C++ demonstrating the various available constructors.

(c) Write a C++ program to demonstrate hybrid inheritance or hierarchical inheritance.

(d) What is a pure virtual function? Explain polymorphism with a suitable C++ program.