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Total No. of Pages: 03

Total No. of Questions: 09

M.Sc (IT) / PGDCA (Sem. – 2)

OBJECT ORIENTED PROGRAMMING USING C++

Subject Code: PGCA-1911

M Code: 77840

Date of Examination: 16-12-2022

Time: 3 Hrs.

Max. Marks: 70

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C have FOUR questions each, carrying TEN marks each.
3. Attempt any FIVE questions from SECTION B & C, selecting atleast TWO questions from each of these SECTIONS B & C.

SECTION-A

1. Answer the questions given below in brief:
 - a) What are classes and objects in object oriented programming?
 - b) What is the basic structure of a C + + program? Explain the significance of main function in C + + program.
 - c) Write a program in C + + to verify that a given input date belongs to leap year or not.
 - d) How multidimensional arrays are represented in memory?
 - e) What are functions in C + +? Explain with example.
 - f) What is hybrid inheritance? Explain with example.
 - g) What is friend function in C + +? Explain with example.
 - h) What is data abstraction in object-oriented programming? Explain with example.
 - i) Explain the concept of overriding with the help of a programming example in C + +.
 - j) What are the various modes of opening file in C++?

SECTION-B

2. a) What are the basic requirements to execute a C++ program? Write a C++ program to display the percentage of marks obtained. Take maximum marks and obtained marks as an input from user.

b) What is the difference between procedure-oriented programming language and object-oriented programming language? Give a suitable real-world example to demonstrate the difference.
3. a) What do you understand by operator in C++? Explain about the various kind of operator available in C++.

b) Write a C++ program to the grade of student based on the following conditions:

-if the score $\geq 95\%$ than grade = A +

-if the score $\geq 90\%$ and $< 95\%$ than grade = A

-if the score $\geq 80\%$ and $< 90\%$ than grade = B

-if the score is $< 80\%$ than grade = C
4. a) Write a C++ program to do any two of the following operation on strings.
 - i) To find the frequency of each character in a string.
 - ii) To count number of vowels in string.
 - iii) To check a string is palindrome or not.
b) What are arrays in C++? Explain with example in C++. Write a program in C++ to sort the elements of a two-dimensional arrays in descending order.
5. Write C++ program to do any four of the following operations on matrix of size $M \times N$.

Multiplication of all elements of matrix of size $M \times N$.
 - a) To display row-wise multiplication of matrix of size $M \times N$.
 - b) To display column-wise multiplication of matrix of size $M \times N$.
 - c) To create transpose of matrix B of size $N \times M$.
 - d) To sort element by frequency.

SECTION C

6. a) What are the basic features of object-oriented programming? Write a program in C++ to demonstrate the concept of polymorphism in C++.
- b) Explain about the role of access specifier in C++? How many kinds of access specifier are available in C++?
7. a) What is the role of constructor and destructor in C++? Explain with the help programming example.
- b) What is parametrized constructor in C++? Write a program in C++ to demonstrate the concept of copy constructor in C++.
8. a) What is operator overloading? Explain about the operator overloading using friend function in C++.
- b) What is virtual function in C++? Differentiate between virtual and friend function in C++.
9. How file handling is done in C++? Write a C++ program to do the following operation on file:
 - a) Create a text file taking input from the user and display the content of the created file on console.
 - b) Create another file and copy the content from first file into second file.
 - c) Ask user to enter some content and append that content in second file and now display the second file.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.