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Fifth Semester B.E. Degree Examination, July/August 2022 Object Oriented Programming using C++

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What is C++? List the application of C++. (04 Marks)
- b. Describe the structure of a C++ program with an example. (08 Marks)
- c. Explain the different types of expressions in C++. Give examples for each type. (08 Marks)

OR

- 2 a. Explain the looping statements in C++ with syntax and examples. (08 Marks)
- b. Write note on: (i) Reference variable in C++ (ii) new and delete operator in C++ (08 Marks)
- c. Write a C++ program to find the sum of digits of a given number. (04 Marks)

Module-2

- 3 a. Explain inline function and overloaded function with syntax and example program. (08 Marks)
- b. Define class and object. Explain the components of class with example program. (08 Marks)
- c. Write the syntax for class declaration and member function declaration outside class definition with example. (04 Marks)

OR

- 4 a. When do we use default arguments? State the rules that need to be followed while using default arguments. (04 Marks)
- b. Write a program to create a class called employee consisting of name, designation, id and salary as class variables. Using this class print 5-employee information by reading the information of employee. (08 Marks)
- c. Define friend function? Write a program to find mean value of two numbers using friend function. (08 Marks)

Module-3

- 5 a. What is constructor? Mention the features of constructor function in C++ with an example program. (08 Marks)
- b. What is operator overloading? With general syntax explain the process of operator overloading and also name the operators in C++ that cannot be overloaded. (08 Marks)
- c. Define copy constructor. Demonstrate with an example program. (04 Marks)

OR

- 6 a. What is destructor? Mention the features of destructor function in C++ with an example program. (08 Marks)
- b. Write a C++ program to illustrate overloading binary '+' operator to concatenate two strings S1 = "VTU" and S2 = "BELGAUM" display the concatenated string and two original strings. (08 Marks)
- c. How many class member access specifiers used in C++? Explain each access specifiers with an example. (04 Marks)

Module-4

- 7 a. What is inheritance? Explain the different types of inheritance and syntax of defining derived class. (08 Marks)
b. Explain the visibility modes of inheritance with an example program. (08 Marks)
d. Compare multiple inheritances with multilevel inheritance. (04 Marks)

OR

- 8 a. What is virtual function? How it is different from pure virtual function? Illustrate. (08 Marks)
b. Explain the concept of polymorphism incorporated in C++. Explain with example program. (08 Marks)
c. What is abstract class? Given an example. (04 Marks)

Module-5

- 9 a. What is a data stream? Describe the hierarchy of file stream classes in C++. (08 Marks)
b. How file opening and closing is done? What are the functions required for reading and writing data in a file. Explain with an example. (08 Marks)
c. Write a C++ program to copy content of one file to another. (04 Marks)

OR

- 10 a. Explain the hierarchy of console input/output stream classes in C++. (08 Marks)
b. Explain the following functions of C++:
i) getline() ii) write() iii) width() iv) setw() (08 Marks)
c. Why it is necessary to detect EOF in C++? Give example. (04 Marks)
