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Fifth Semester B.E. Degree Examination, July/August 2022

Object Oriented Programming using C++

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- Define and hence give the syntax for declaring a variable. State the rules to be followed for declaring variables in C++. (06 Marks)
 - What are data types in C++? List all the built in and derived data types with examples. (06 Marks)
 - List the difference between Structures and Unions. (04 Marks)

OR

- Explain the structure of C++ program. Mention applications of C++ programming language. (06 Marks)
 - With syntax and example give the control structures for switch and while statement. (07 Marks)
 - Give the examples for relational, logical and bitwise expressions available in C++. (03 Marks)

Module-2

- What are inline functions? Explain with an example. List the situations where inline function cannot be used? (06 Marks)
 - What is class? What are access specifiers? How many access specifiers are used in C++? Explain with example. (04 Marks)
 - What is meant by function overloading? Explain the function overloading with example. (06 Marks)

OR

- Explain the memory allocation to objects. (04 Marks)
 - Write a C++ program to define a class called student with roll number, name and percentage as its data members and getdata(), printdata() as member functions. (06 Marks)
 - Why friend function is required? Write a program to add two complex numbers using friend functions. (06 Marks)

Module-3

- Explain the special characteristics of constructor functions. (04 Marks)
 - What is a copy constructor? Illustrate the working of copy constructor. (04 Marks)
 - Write the program to manipulate the strings and the overload operators + and <= . (08 Marks)

OR

- What is the use of destructor in C++? How it is different from constructor, explain in brief. (04 Marks)
 - Write a C++ program containing two data members height and base use a constructor to set height and base with area() and display() as member function to calculate area of a triangle. (06 Marks)
 - Write the program to shows how the unary minus operator is overloaded using a friend function. (06 Marks)

Module-4

- 7 a. What is inheritance? Explain different types of inheritance. How inheritance is done using multiple base classes? Demonstrate. (10 Marks)
- b. Explain single inheritance with an example. (06 Marks)

OR

- 8 a. Explain the role of 'this' pointer with an example (06 Marks)
- b. What is virtual function? Mention the rules of virtual function. Write a program for virtual function. (08 Marks)
- c. What are pure virtual functions? (02 Marks)

Module-5

- 9 a. List and explain the classes used for file stream operations. (08 Marks)
- b. Explain the working of formatted and unformatted functions used in C++. (08 Marks)

OR

- 10 a. What are file input and output streams? Write a program for writing to and reading the data from a file using stream classes. (08 Marks)
- b. With an example :
- (i) Explain the syntax for opening and closing of file operations.
- (ii) Explain End of File (EOF) operator. (08 Marks)
