

CBCS SCHEME

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15EC562

Fifth Semester B.E Degree Examination, Feb./Mar.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

- 1 a. What are tokens in C++? Explain with suitable examples the different five types of tokens. (07 Marks)
- b. Classify the operators in C++ based on the type of operation. Give suitable examples for each type. (04 Marks)
- c. Write a program in C++ to accept temperature in degrees centigrade and displays the temperature in fahrenheit. (05 Marks)

OR

- 2 a. What is a reference variable? What are the rules to be followed while using a reference variable? (05 Marks)
- b. What are identifiers? What are the rules to be followed while framing an identifier in C++? Give examples of valid and invalid identifiers. (05 Marks)
- c. Write a program in C++ to solve a quadratic equation. (06 Marks)

Module-2

- 3 a. What is function overloading? Write a program to find area of circle, rectangle and triangle using overloaded function. (08 Marks)
- b. What is a class and an object? How is data hiding accomplished in C++? (04 Marks)
- c. Why is a static member used in a class? Illustrate the use of static data member using a suitable program. (04 Marks)

OR

- 4 a. What is a recursive function? Write a program in C++ to calculate factorial of a number using recursive function. (06 Marks)
- b. What is a friend function? What are its merits and demerits? How does a friend function differ from a member function? (06 Marks)
- c. What is a const member function? When will the compiler generate error while using const member function assuming that there are no syntactical errors in program? (04 Marks)

Module-3

- 5 a. What is a constructor and destructor? Can you create a class without a constructor and destructor? Explain in detail. (06 Marks)
- b. Define a class COMPLEX to describe complex numbers. Overload operators +, -, << and >> for COMPLEX. Operator + should add two complex numbers. Operator - should subtract second parameter from caller object. Operator << displays object using ostream class and operator >> perform input operation using istream class. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

OR

- 6 a. What is a this pointer? Explain with suitable example. (04 Marks)
b. What are the various types of constructors and destructors in a class? Explain with suitable examples. (06 Marks)
c. Define a class DISTANCE which describes distance in British system (Imperial system) where distance is expressed in yards, feet and inches. Overload the operator + and – for this class. (06 Marks)

Module-4

- 7 a. What are different forms of inheritance? Explain each in brief with suitable example. (08 Marks)
b. Differentiate between early binding and late binding. (04 Marks)
c. What is an abstract class? Explain with an example. (04 Marks)

OR

- 8 a. What is virtual base class? What is its significance? (05 Marks)
b. What is polymorphism? How is polymorphism achieved at compile time and run time? (06 Marks)
c. What is pure virtual function? Explain with suitable example. (05 Marks)

Module-5

- 9 a. What are I/O manipulators? Explain any 3 manipulators with example. (08 Marks)
b. What are two methods available in C++ file stream classes to open a file. Explain each with suitable examples. (08 Marks)

OR

- 10 a. What is the significance of ios class? Explain any 3 formatting functions of ios with suitable examples. (08 Marks)
b. Explain in brief about any four modes of opening a file. (04 Marks)
c. Explain the meaning of following error handling functions:
(i) eof ()
(ii) fail ()
(iii) good ()
(iv) bad () (04 Marks)
