

NEW SCHEME

Sixth Semester B.E. Degree Examination, July 2006

Electrical and Electronics Engineering

Object Oriented Programming System with C++

Time: 3 hrs.]

[Max. Marks:100

Note: 1. Answer any FIVE full questions.

- 1 a. Explain the following terms associated with object oriented programming:
i) Data abstraction and encapsulation ii) Polymorphism iii) Inheritance
(12 Marks)
b. Write an interactive program using 'switch-case' statement to find the roots of a quadratic equation $(ax^2 + bx + c) = 0$, for handling all the possible cases.
(08 Marks)
- 2 a. Explain with suitable examples the enumerated data types and pointer data types used in C++ language.
(06 Marks)
b. What is the difference between inline function and normal function? Mention the merits and demerits. Write a small program with an inline function to find the largest among the three numbers, by using conditional operators.
(08 Marks)
c. Describe the **new** and **delete** operators with suitable examples.
(06 Marks)
- 3 a. What are different types of parameter passing schemes supported by C++ functions? Illustrate with suitable program.
(06 Marks)
b. What is function polymorphism? Write a C++ program to illustrate function polymorphism to compute square of a number belonging to the different data types and with different arguments.
(08 Marks)
c. What is generic function? Write a C++ program to swap two integers, float and character type data using generic function.
(06 Marks)
- 4 a. Describe the constructor and destructor. In what situation an overloaded constructor and a copy constructor are used?
(10 Marks)
b. Explain the friend function. Illustrate with a program to demonstrate how friend function can work as bridge between different classes with respect to your program. Explain what is forward declaration.
(10 Marks)
- 5 a. Discuss on the use of pointers to derived classes and pointers to class members.
(08 Marks)
b. What is the use of overloading the built in operators? Write a program to add, to subtract, to display the two complex numbers by overloading the operators +, - and *.
(12 Marks)
- 6 a. What are the different forms of inheritance supported by C++? Explain them with suitable examples.
(10 Marks)
b. Write a suitable program to illustrate the multilevel inheritance. The program is to create a base class called grand father and to derive it to father class which in turn is derived to son class. Select different member functions in class declaration.
(10 Marks)
- 7 a. Explain with a sample program the need for a virtual base class.
(08 Marks)
b. Explain how Run time polymorphism is implemented by using virtual functions. Explain with suitable examples.
(06 Marks)
c. What are io streams in C++? Give the stream class hierarchy.
(06 Marks)
- 8 Write short notes on any four:
a) File input and output b) Early and late binding
c) Classes and objects d) Manipulators and scope resolution operator
e) Life time and visibility with respect to a variable.
(20 Marks)