

27.

Exam.Code:0906  
Sub. Code: 6678

1108  
B.E. (Computer Science and Engineering)  
Second Semester  
CS-202: Object Oriented Programming

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) Distinguish between function template and class template.
- b) What is token? List various types of tokens in C++.
- c) What is scope resolution operator? Why is it used?
- d) Can objects of class type that is declared but not defined be created? If yes, how? If no, why?
- e) What are generic functions? Given an example. (5x2)

**UNIT – I**

- II.
  - a) Describe in detail the principles of object oriented programming.
  - b) Describe the concept of memory allocation for classes and objects. While definition, can a class have a data member of its own type? If yes, how? Explain, If not, why? Explain. (5,5)
- III.
  - a) What is an expression? With the help of examples, describe in detail the role of precedence and associativity rules in the evaluation of an expression in C++.
  - b) What do you mean by inheritance? Describe various types of inheritance with suitable ' diagrams and syntax. (5,5)
- IV.
  - a) Define a class *String* and overload the addition and equality operator to perform string concatenation and string comparison. Show the usage of overloaded operators.
  - b) What is public derivation? Explain how a private member of a base class can be accessed by the public member function of the derived class through public inheritance? (5,5)

P.T.O.



(2)

UNIT – II

- V. a) What are the different ways to achieve polymorphism in C++? Explain with examples.
- b) What are exceptions? With the help of examples, describe in detail how are exceptions handled in C++? (5,5)
- VI. a) What are virtual functions? Explain the significance of virtual functions with the help of an example.
- b) Write a C++ program to count the number of characters in a text file. (5,5)
- VII. Write short notes on:-
- a) Generic programming with templates
- b) Standard template library (5,5)

x-x-x