SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

Course & Branch :B.E/B.Tech - AERO/AUTO/CSE/IT/M&P/MECH
Title of the Paper :Programming in C++   Max. Marks :80
Sub. Code :6C0094   Time : 3 Hours
Date :14/12/2009   Session :AN

PART - A   (10 x 2 = 20)
Answer ALL the Questions

1.   What is object oriented programming? How is it different from the procedure oriented programming?

2.   What do you mean by dynamic initialization of a variable? Give a example.

3.   How is a member function of a class defined?

4.   List some of the special properties of the constructor.

5.   How many arguments are required in the definition of an overloaded unary operator?

6.   Distinguish between overloaded functions and function templates.

7.   Describe the syntax of the Single Inheritance in C++.

8.   What is pure virtual function?

9.   What is the difference between the statements?
```
cin >> ch
ch = cin.get();
```

10. When should a program throw an exception?

<div align="center">

PART – B   (5 x 12 = 60)

Answer All the Questions

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11. Distinguish between the following terms:
    (a) Objects and Classes
    (b) Data Abstraction and Data Encapsulation.
    (c) Inheritance and Polymorphism
    (d) Dynamic binding and message passing

<div align="center">(or)</div>

12. (a) What are the benefits of OOP?
    (b) Explain the structure of C++ program.

13. Define a class to represent a bank account Include the following members:
    Data members:
    1) Name of the depositor
    2) Account Number
    3) Type of Account
    4) Balance amount in the account.
    Member Functions:
    1) To assign initial values.
    2) To deposit an account.
    3) To withdraw an amount after checking the balance.
    4) To display name and balance.
    Write a main program to test the program.

<div align="center">(or)</div>

14. (a) Write a program to demonstrate parameterized constructor.
    (b) Write a program to demonstrate copy constructor.

15. What is function overloading? Write overloaded function for computing area of a circle, a triangle and a rectangle.

<div align="center">(or)</div>

16. Write a C++ program overloading + operator to add two object content and store result in another object.

17. Explain Multiple Inheritance with an example.

(or)

18. Consider an example of book shop which sells books and video tapes. These two classes are inherited from the base class called **media**. The **media** class has command data members such as **title** and **publication**. The **book** class has data members for storing number of pages in a **book** and the **tape** class has the playing time in a tape. Each class will have the member functions such as **read**() and **show**(). In the base class, these members have to be defined as virtual functions. Write a program which models the class hierarchy for book shop and process objects of these classes using pointers to the base class.

19. Explain the various methods of performing formatted stream I/O operations.

(or)

20. Explain the Exception handling model of C++ with various constructs supported by it.