



RT-1864

Second Year B. C. A. (Sem. III) Examination

April / May – 2007

304 : Object Oriented Prog.

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दृशवित्त निशानीवाणी विगतो उत्तरवली पर अवश्य लभवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
S. Y. B. C. A. (Sem. 3)

Name of the Subject :
Object Oriented Prog.

Subject Code No. : 1 8 6 4 Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

(2) Question-1 is compulsory.

1 Answer the following :

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- (1) What is dynamic binding ?
- (2) What is the application of scope resolution operator (: :) in C++ ?
- (3) What do you mean by dynamic initialization of variable ? Give an example.
- (4) What is Destructor ? How is it written in C++?
- (5) How do structures in C and C++ differ ?
- (6) List out the operators that are not be overloaded by friend function.
- (7) What is self-referential structure ?
- (8) What do you mean by method overriding ?
- (9) When do we make a virtual function "pure" ? How it is declared ?
- (10) State the difference between ios::app and ios::ate mode.
- (11) State the difference between tellp() and tellg () function in random access file.
- (12) What is Stream ? Explain Input/Output streams with example.

2 (a) What do you mean by objects as function arguments ? Explain pass - by - value and pass-by-reference with example ? 7

(b) When do we need friend function ? Write a program to add two values defined in different classes using friend function. 6

OR

2 (a) State the advantages of OOP compared to POP. 7

(b) What is constructor ? How do we call a constructor ? State the advantages of constructor. 6

3 (a) What is overloaded casting operator function ? How is it created ? Explain with example. 5

(b) If a class D is derived from two base classes B1 and B2, then write these classes each containing a Zero argument constructor. Ensure that while build an object of type D, firstly the constructor of B2 should get called followed by that of B1. Also provide a destructor in each class. In what order would these destructors get called ? 4

(c) Create a class "sample" that stores the weight and height. Overload the (+ =) / (- =) operators to add two values. 6

OR

3 (a) What is containership ? How does it differ from Inheritance ? 5

(b) What do you mean by overloading of an operator ? Why is it necessary to overload an operator ? 4

(c) Design a classes such that they support the followings 6
Rupee R1; Pound P1 ;
P1=R1; -- Converts Rupee to Pound
Write a program which carry out conversion operation.

4 (a) How is polymorphism achieved at run time and compile time ? 5

(b) Explain read () and write () binary file functions. 4

- (c) Create two classes DM and DB which store the value of the distances. DM stores distance in meters and centimeters and DB stores distance in feet and inches. Write a program that can add one object of DM with another object of DB. Use a friend function to carry out the addition operation. 6

OR

- 4 (a) What is visibility modifier ? List out them and differentiate with proper example. 5
- (b) How do the properties of the following two derived classes differ ? 4
- (a) Class D1 : private B, public C {};
- (b) Class D2 : protected B, private C {};
- (c) Create a base class called shape. Use this class to store two double type variables x and y that could be used to compute the area. Derive two specific classes called triangle and rectangle from the base shape. Add to the base class a member function `getdata()` and `disp_area()` to input values and compute and display the area of figures. Make `disp_area()` virtual function and redefine this function in the derived classes to suit their requirements. 6

Using these three classes, design a program that will accept values for triangle or rectangle interactively, and display the area

$$\text{Area of rectangle} = x * y$$

$$\text{Area of triangle} = \frac{1}{2} * x * y$$

- 5 (a) Why user-defined manipulator is needed ? Design a single Manipulator to provide the following output specifications for printing float values : 5
- (1) 10 column width
- (2) Left-justified
- (3) Three digit precision
- (4) Filling unused places with +
- (b) Create A binary file contains information of employees in an Organization, i.e. employee code, name of employee and basic salary. Write a program to copy the contents of this file to another file where the basic salary is > 5000. 6
- (c) Explain following : (any two) 4
- (i) What is this pointer ?
- (ii) Explain following functions with example :
(1) Width () (2) Fill ()
- (iii) Explain static data member and member function.