



DJ-1864

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

September / October – 2007

Object Oriented Prog. : 304

Time : 3 Hours]

[Total Marks :

Instructions :

(1)

नीचे दशावलि निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी.
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. : 304

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

Seat No. : 0 0 0 3 9 6

J. B. R.
Student's Signature

- (2) Make your options clear.
(3) Question – 1 is compulsory.

1 Answer the followings :

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- (1) What is function overloading?
- (2) How does a constant defined by *const* differ from the constant defined by *#define*?
- (3) Discuss new operator.
- (4) What is an abstract class?
- (5) What is a class? How a class is different from structure?
- (6) List out operators those can not be overloaded using friend function.
- (7) What is destructor?
- (8) What is the significance of protected modifier in class?
- (9) What is reference to object?
- (10) What is the function of showpoint flag?
- (11) State the difference between *ios||app* and *ios||ate* mode.
- (12) Give the function to locate get pointer at 50th byte in random access file.

2 (a) Differentiate OOP and POP. How OOP is advantageous over POP ?

202 (b) Explain different types of inheritance supported in C++ by giving proper figures.

OR

2 (a) What is inheritance? Explain its advantages by giving proper example.

142 (b) What is constructor? Explain parametrized constructor. How constructor is called Explicitly/Implicitly ?

3 (a) What is friend function? Give its advantages.

eg, 124 (b) If a class D is derived from three base classes B1, B2 and B3. Ensure that while build an object of type D firstly the constructor of B2 should get called followed by that of B1 and B3. If these classes having destructor then in what order would these destructor get called?

(c) Construct the M(Row) X N(Column) matrix, using new operator and find the product of inputted matrices. Also use delete operator to deallocate the memory. Take appropriate member functions and display the result in proper format.

OR

3 (a) What is hybrid inheritance? How ambiguity in hybrid inheritance can be removed? Explain with example.

225 (b) How do the properties of the following two derived classes differ?

(i) class D1 : private B, protected C {};

(ii) class D2 : public B, private C {};

(c) Write a program that consists of two classes, Rupee and Dollar. Provide conversion function to carry out conversion from object of one type to another.

275
4 (a) When do we need virtual functions? Write down the rules for virtual functions. 5

(b) Discuss inline function. 4

82 (c) Define a class to represent a bank account for handling 10 customers. Include the following members : 6

Data members :

- (1) Name of the A/C holder
- (2) Account number
- (3) Balance amount in the account

Member functions :

- (1) To display values
- (2) To deposit an amount
- (3) To withdraw amount

OR

4 (a) Discuss static data members and functions. 5

57 (b) What is Pure virtual function? When it is required. 4

(c) Create a SHAPE class which has display member function. Derive two classes RECTANGLE and CIRCLE. CIRCLE class has one data member radius. RECTANGLE class has two data members, length and width. Now using virtual function display data for both classes. 6

5 (a) Write down the syntax for user-defined manipulators. Design a single Manipulator to provide the following output specifications for printing float values. 5

- (1) 10 column width `cout << width(10);`
- (2) Left-justified `cout << setf(ios::left, ios::adjust_field);`
- (3) Two digit precision `cout << precision(2);`
- (4) Filling unused places with '*' `cout << fill('*');`
- (5) Trailing zeros shown `cout << setf(ios::showpoint);`
- (6) Display plus sign at first position. `cout << setf(ios::showpos);`

- (b) class “emp” containing the data members Name of employee, Employee number, Basic salary, Allowance. Create array of objects. Using appropriate member function get data of at least 5 employees. Save these records in “emp.dat”. Display the information of all employees from a file along with PF and total salary. Use read() and write() binary functions for file. 6

[PF = 10% of basic salary, total salary = basic + allowance – PF]

- (c) Explain following. (any two) 4

(i) What is self referential structure? Give example.

(ii) Explain following functions with example.

(1) tellg()

(2) tellp()

(3) open()

(4) close()

✓(iii) Explain polymorphism.