C-1864

Second Year B. C. A. (Sem. III) Examination
October / November – 2008
Object Oriented Prog.

Time : 3 Hours]   [Total Marks : 70

Instructions :

(1)

(2) Start new question from new page.

(3) Clearly mention your options.

1   Answer the followings :   **12**

 (1) What is static binding ?

 (2) How does a constant defined by const differ from the constant defined by the preprocessor statement #define ?

 (3) What is friend class ?

 (4) What is visibility mode ?

 (5) What is a class ? How a class is different from structure ?

 (6) List out the operators that cannot be overloaded.

 (7) What is self-referential structure ?

 (8) What is protected modifier in class ? How it differs from private modifier ?

 (9) What is an abstract class ?

 (10) What is the function of showpoint flag ?

 (11) State the difference between ios::app and ios::ate mode.

 (12) What is difference between 'delete a' and 'delete [ ] a' ?

2   (a) List out basic concepts of OOP. Explain any three in brief.   **7**

 (b) List memory management operators. Point out reasons why using new is better idea than using malloc( ) ?   **6**

OR

C-1864]   1   [Contd..

2 (a) What do you mean by keyword static ? Write down 5
the basic properties of static member function. Also
discuss how static member functions are called.

(b) Explain parameterized constructor. How constructor 5
is called Explicitly/Implicitly.

(c) Explain reference variable with example. 3

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

(b) If a class D is derived from two base classes B1 and 4
B2, then write these classes each containing a Zero
agrument 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 destructor get called ?

(c) Const construct the M(Row) X N (Column) matrix, using
NEW operator and find the sum of diagonal elements
of inputted matrix. Also use DELETE operator to
deallocate the memory. Take appropriate member
functions and display the result in proper format.

OR

3 (a) What is ambiguity in hybrid inheritance ? How 5
ambiguity remove from compile time ? Explain with
example.

(b) How do the properties of the following two derived 4
classes differ ?
(a) class D1 : private B, public C { };
(b) class D2 : protected B, private C { };

(c) Write a program that consists of two classes time 6
12 and time 24. The first one maintains time on 12-hour
basis, whereas the other one maintains time on 24-hours
basis. Provide conversion functions to carry out conversion
from object of one type to another.

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

(b) Explain inline functions with example. 4

(c) Define a class to represent a bank account for 6
handling 10 customers, 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 amount
    (3)   To withdraw amount.

OR

4   **(a)**   In which circumstances functions can made a friend ?   **5**
Write down the advantages of a friend function.

    (b)   What is inheritance ? Differentiates multiple and   **4**
multilevel inheritance with example.

    (c)   Create a SHAPE class which has no_of-sides data
member. Derive two classes CIRCLE and RECTANGLE
from SHAPE class. CIRCLE class has one data member
redius. RECTANGLE class has two data members length
and width. Now using technique of virtual function get
data for both class and display data for both classes.

5   **(a)**   Write down the syntax for user-defined manipulators.   **5**
Design a single Manipulator to provide the following
output specifications for printing float values :
    (1)   12 column width
    (2)   Right-justified
    (3)   Three digit precision
    (4)   Filling unused places with*
    (5)   Trailing zeros shown
    (6)   Display plus sign at first position.

    (b)   Class "emp" containing the data members name of   **6**
employee, employee number, basic salary, allowance.
Take appropriate member function and get data into
class, then after write data into data file called 'emp.dat'
until user choice. Display the information of all employee
from a file along with pf, total salary. Use read ( ) and
write ( ) binary function for file.
[12% of basic salary, total salary = basic+allowance - pf]

    (c)   Explain following (any **two**)   **4**
    (i)   What is containership ? How does it differ from
        inheritance ?
    (ii) Explain following functions with example :
        (1)   width ( )
        (2)   fill ( )
        (3)   Precision ( )
    (iii) Explain read ( ) and write ( ) binary file function.