Subject Code—673-X

M.C.A. (Third Year) EXAMINATION

(5 Years Integrated Course)

(Re-appear)

MCA-302

OBJECT ORIENTED PROG. USING C++

Time : 3 Hours   *Maximum Marks :* 100

Note : Attempt any *Five* questions.

1. Discuss the paradigm shift in object oriented programming as compared to structured programming.   **20**

2. (a) Discuss the following data types :

   (i)   Enumerated data types

   (ii) Pointers

   (iii) Reference Variables

   (iv) New and delete operators

   (v)   Typecast operator.

(b) Give example programs for :

(i) Passing parameters by reference

(ii) Returning a reference to a value.

10+10

3. (a) Compare macro and inline functions. Give *one* example of each.

(b) The effect of a default argument can be achieved with function overloading. Discuss with an example.

(c) Discuss memory allocation for objects.

(d) Differentiate between function overloading and function overriding. **5×4**

4. (a) Declare a class 'time' with hours and minutes as its data members. Write a program that can add two time objects and stores the results into a third time object.

(b) Create two objects DM and DB. DM stores distance in metres and centimetres and DB stores the distance in feets and inches. Write a program that can read values for class objects and add one object of DM to another object of DB. The result may be a DB or DM object.

10+10

5. (a) Write a program to overload * operator to multiply two matrices.

(b) Describe multiple and hierarchical inheritance with suitable examples.

10+10

6. (a) How is run time polymorphism achieved ?

(b) Describe the following :

(i) Abstract Class

(ii) Protected Access Specifier. **10+10**

7. (a) Write a program to read a list of variables 'item-name', 'item-code' and 'cost iteratively' and produce a three column output as shown below :

NAME   CODE   COST
Apples   1001   85·50
___   ___   ___
___   ___   ___

(b) What are manipulators ? Give example of any *four* manipulators.   12+8

8. (a) Write a program that reads a text file and creates another file that is identical except that every sequence of consecutive blank spaces is replaced by a single space.

(b) List down advantages of saving data in binary form.   14+6