2016

MCA 3rd Seme. Examination

OBJECT ORIENTED PROGRAMMING TECHNOLOGY USING C++

PAPER—MCA-303

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. *1* and any *five* from the rest.

1. Answer any *five* : 5×2

(a) What are default arguments ?

(b) How console input and outputs operations are done in C++.

(c) What does it mean by saying object of a class ?

(d) What is the syntax for defining the member function outside the class ?

(e) What is the use of 'mutable' keyword ?

(f) When is the destructor called ?

(g) Is constructor a member function ?

2. (a) What is inline function ? What are the advantages of inline function ? Under what conditions does the function cannot be made inline by the compiler ?

(b) What is function overloading ? Explain with the help of an example. (2+2+2)+(2+4)

3. (a) Compare and contrast between procedure oriented programming and object oriented programming.

(b) What is the utility of forward declaration for a function friendly to two classes ?

(c) Write a program in C++ to implement the addition of two complex numbers using friend function. 4+2+6

4. (a) What is 'this' pointer ? Explain briefly with example.

(b) Write a C++ program to create a class STUDENT with data member : Roll, Name, Age and Section and member

functions : Get_Data ( ), Put_Data ( ) and Count ( ). This program will get the students data and display the same as output along with the total number of students in each section. (2+5)+4

5. (a) What happens when the 'new' operator fails to allocate required amount of memory from heap ?

(b) Is there any way to change the default behaviour of 'new' operator when it fails to allocate require amount of memory ? If so explain the way in brief. 5+(1+6)

6. (a) What is copy constructor ? Under what situations does copy constructors are called ? Explain all the situation with example.

(b) Illustrate with the help of examples the need for allocating the memory dynamically using parameterized dynamic constructors. (1+6)+5

7. (a) Explain the role of 'protected' access specifics in Inheritance.

(b) Write a C++ program to demonstrate multiple and hierarchical inheritance. 4+8

8. (a) Write short notes on (any *two*) :

(i) Arrow operator ;

(ii) Constant data member ;

(iii) Function overriding ;

(iv) VTBL & VPTR.

(b) What is virtual base class ? Why do we need it ? Support your answer with example. (2×3)+(2+4)

[Internal Assessment : 30]

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