2015
MCA
3rd SEMESTER EXAMINATION
OBJECT ORIENTED PROGRAMMING
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 questions :

(a) What do you mean by dynamic binding?
(b) Why do we declare a member of a class static?
(c) What is inline function?
(d) What is ‘has a’ and ‘is a’ relationship?
(e) What is virtual base class?

(Turn Over)
(f) List the C++ operators which cannot be overloaded.

(g) What is STL?

2. (a) Explain the features of OOP with suitable examples. 

(b) What is a copy constructor? List some of the special properties of the constructor function.

3. (a) What is a friend function? Write its special characteristics.

(b) Discuss how dynamic allocation is achieved in C++.

4. (a) What is operator overloading? Write the rules for overloading operators. List three operators that can be overloaded as a member function only.

(b) Write a class ‘complex’ and overload +, −, >> and << operators in it.

5. (a) Explain virtual function with a suitable example.

(b) What is pure virtual function and abstract class? What is the use of a virtual constructor?

(C)
6. (a) Write a C++ program to implement the stack operations. 6

(b) What is generic programming? How it is implemented in C++? 2+4

7. (a) Write a class Bank Account. Define constructor to open an account. Define member functions to deposit, withdraw and check balance. 6

(b) Explain the difference between compile time polymorphism and runtime polymorphism. Explain how compile time polymorphism is implemented in C++? 3+3

8. (a) What is namespace? Why namespaces are used in C++? Explain using directive and using declaration with examples. 2+2+4

(b) Explain exception handling in C++ with suitable example. 4

9. (a) Distinguish between function template and class template.

(b) Explain the main classes used for file handling in C++. Write a file handling program in C++ in append mode to write to an existing file.
10. (a) What is UML and how it is used in OOP? 2

(b) Explain static and dynamic modelling in UML. Write a short note on UML extensibility. 5+5

*Internal Assessment — 30*