Roll No. ....   Total Pages : 3

OBJECT ORIENTED PROGRAMMING WITH C++
Paper : MCA-205

Time : Three Hours]   [Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Attempt *four* more questions selecting *one* question from each Unit.

Compulsory Question

1.   Answer the following questions in brief :

   (a)   What is read-only object? How is it created in C++?

   (b)   How can you allocate and deallocate memory dynamically in C++.

   (c)   What is operator overloading? Explain its need.

   (d)   Differentiate between implicit and explicit type conversions in C++.

   (e)   What is pure virtual function? Explain its need.

   (f)   Explain the need of protected access specifier.

   (g)   How are uncaught exception caught in C++? Explain.

   (h)   What are strengths and weaknesses of text mode and binary mode I/O?   (8×3=24)

UNIT–I

2. (a) What is constructor? Explain the use of copy constructor with an example in C++.   7

     (b) What are inline functions? How are they different from external linkage functions?   7

3. (a) What is constructor? Explain the roles of constructors in creating dynamic objects.   7

     (b) Explain the purpose of different classes in the hierarchy of console classes.   7

UNIT–II

4. (a) Overload '==' operator for the class 'Distance'.   7

     (b) What are rules to overload binary operator? Overload '+' operator to subtract two matrices.   7

5. (a) Overload 'insertion' and 'extraction' operators for the class 'String'.   7

     (b) How can a class object be converted to a value of fundamental data type? Explain with an example.   7

UNIT–III

6. (a) What is inheritance? Give an example of hierarchical inheritance and implement it in C++.   7

     (b) What is function overriding? Explain with an example in C++.   7

7. (a) What is virtual function? How does the compiler resolve the call to a virtual function? 7

 (b) What is virtual destructor? Explain it with a suitable example in C++. 7

UNIT–IV

8. (a) What are class templates? What is the need for class template? When and how does the C++ compiler generate an actual class definition from its template? Explain with an example. 7

 (b) Which three keywords are provided by C++ for implementing exception handling? Explain those with a suitable example. 7

9. (a) Describe the use of the following manipulators: setw(), setiosflags(), setprecision, setfill(). 7

 (b) Describe how the contents of a disk file can be accessed randomly in C++? 7