BCA (Honours) 3rd Semester Examination, 2022

Subject : Computer Application

Course : BCA-303

(Object Oriented Programming Using C++)

Time: 4 Hours   **Full Marks: 80**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words
as far as practicable.

Answer Question No. 1 *and* any four *from the rest.*

1. Answer *any eight* questions: 2×8=16

   (a) What is an abstract class?

   (b) What is 'this' pointer in C++?

   (c) What is 'object'?

   (d) What is the use of 'protected' visibility mode?

   (e) What is the difference between static and dynamic memory allocation?

   (f) What is 'runtime polymorphism'?

   (g) What is reference variable? Give an example.

   (h) What is 'copy constructor'?

   (i) What is inheritance in OOP?

   (j) What is 'data abstraction'?

   (k) What do you mean by pure virtual function?

   (l) Which Operator is not overloaded using friend function?

2. (a) Explain the different visibility modes in C++ with examples.

   (b) Explain call by reference using reference variable in C++. What do you mean by default argument?   8+(6+2)

3. (a) Describe, with short examples the different types of inheritances available in C++

   (b) Create a class for complex numbers in C++ overload '+' and '–' operators for this class. Write a short program in C++ to test complex class.   8+8

4. What is friend function? What is the situation where friend function must be used? Explain with an example. Create a class for students with the following attributes — name, roll, class, marks. Now Overload the "<<" and ">>" operators for the class. Write a program in C++ to use the class.   2+4+10

Please Turn Over

5. (a) Compare between structural programming and OOP.

 (b) Discuss different stream classes in C++. 8+8

6. (a) When Constructor and Destructors are executed in case of inheritance? Describe with a suitable example.

 (b) What is 'exception'? Describe with a suitable example. How exceptions are handled in C++. 6+2+8

7. (a) What is abstract base class? What is virtual function? Describe with an example. What is function 'over riding'?

 (b) What is 'generic programming'? Write on function using 'template' to sort 10 numbers. Now use the function to sort 10 integer and float numbers. 2+4+2+2+6