53 (IT 401) OOPD

2016

OBJECT ORIENTED PROGRAMMING & DESIGN

Paper : IT 401 (Back)

Full Marks : 100

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

*Answer **any five** questions.*

1. *(a)* What are the advantages of default arguments ? Explain with example.

    10

    (b) Explain the special features of object oriented programming.   10

2. *(a)* Write a C++ program to find the area of square, rectangle, circle using function overloading concept.   10

    (b) Explain the different types of constructors with suitable examples.

    10

3. *(a)* Write a C++ program to add two complex numbers using operator overloading. **10**

(b) Write a function template for finding the minimum value contained in an array. **10**

4. *(a)* Write a C++ program for the following : **10**

(i) a function to read two double type numbers from keyboard

(ii) a function to calculate the division of these two numbers

(iii) a try block to throw an exception when a wrong type of data is keyed in

(iv) a try block to detect and throw an exception if the condition "division-by-zero" occurs

(v) Appropriate catch blocks to handle the exceptions thrown.

(b) Write a C++ program to explain how the member functions can be accessed using pointers. **10**

5. *(a)* Justify the need for using friend functions in overloading with an example. **10**

(b) What is a user-defined exception ? Explain with an example. **10**

6. *(a)* Describe the purpose of a virtual base class, giving a suitable example. **6**

(b) Explain the need for pure virtual functions. **6**

(c) What is the difference between a local variable and a data member ? Give example. **4**

(d) Give the use of protected access specifier. **4**

7. Write short notes on : **20**

(a) Class diagram

(b) Object diagram

(c) Interaction diagram

(d) Use case diagram.