2012

M.Sc.

3rd SEMESTER EXAMINATION

COMPUTER SCIENCE

PAPER—COS-306

(PRACTICAL)

Full Marks : 50

Time : 6 Hours

The questions are of equal value.

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Group—A

(Java Lab)

[Marks : 25]

Answer any *one* question (in lottery basis) : 1×15

1. Create a Java applet that shows on screen the order of execution of the methods start(), init(), destroy().

2. Write a Java program that takes in a sentence and reverses the words e.g. This country is India—India is country This.

3. Create a Java program that accepts the number of terms and prints the Fibonacci series up to that term.

4. Create a Java program that accepts an integer from command line and displays whether that is prime or not.

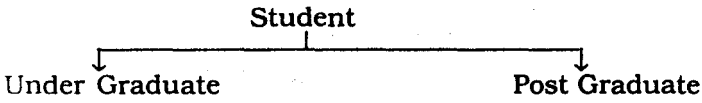
5. Write a Java program to implement multilevel inheritance.

6. Write a program to read a string of maximum 255 characters and perform the following operations.
   (a) Reverse and print the string.
   (b) Find the number of words.

7. Design and implement a class two D array. The class stores data in a two dimensional array of size 3×3. The class should have a constructor that assigns input values to the array elements. The class should have additional functions to print the value is array and second to search a specified value in array.

8. Create a package to show whether a number is Armstrong or not. Import this package is your Java application program and that the gives number for Armstrong.

9. Design and implement the following class hierarchy.



   Your implementation of class hierarchy should include :
   - Member variables for each of the class by the class hierarchy.
   - A polymorphic function that displays the details of a student object.

10. Write a program to show the concept of overriding and overloading in a program.

Internal Assessment	**5**
Viva-voice	**5**

Group—B

(AI Lab)

[Marks : 25]

Answer any *one* question (in lottery basis) : 1×15

1. Write a Prolog program to show the nth Fibonacci number.
2. Write a Prolog program to calculate the sum of N natural number.
3. Write a Prolog program to count the number of elements in a given list.
4. Write a Prolog program to find out the sum of elements of a list.
5. Write a Prolog program to deduce the uncle and sister relation.

   (Basic relation — parent, male, female).
6. Write a Prolog program to check whether an inputted number is prime or not.
7. Write a Prolog program to calculate the factorial of N.
8. Write a Prolog program to deduce brother and nephew relation.

   (Basic relation — parent, male, female).
9. Write a Prolog program to read a digit (0 to 9) and print its word format, i.e. if You've entered 7 then the output will be SEVEN.

10. Write a Prolog program to find out maximum of a given list.

11. Write a Prolog program to find out the minimum of a given list.

12. Write a Prolog program to reverse a list.

13. Write a Prolog program to cheque whether a given list in palindrome or not.

14. Write a Prolog program to check whether a given number is in the list or not.

15. Write a Prolog program to delete first three elements from the list.

16. Write a Prolog program to delete last three elements from the list.

17. Write a Prolog program to insert a number in its appropriate position in a sorted list.

18. Write a Prolog program to calculate the GCD of two numbers.

Internal Assessment	**5**
Viva-voice	**5**