PG/IIIS/COS-306/13(Pr.)

M.Sc. 3rd Semester Examination, 2013

COMPUTER SCIENCE

(Practical)

PAPER – CS-306

Full Marks : 50

Time : 6 hours

The figures in the right hand margin indicate marks

GROUP – A

(*Artificial Intelligence Lab*)

[*Marks* : 25]

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

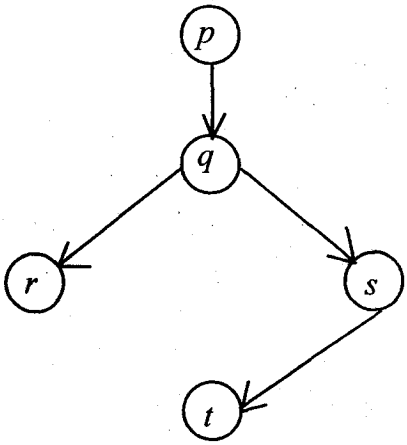
1. Write a prolog program for following facts : X is grandfather of Y. If X is father of Z and is father of Y.

Or

X is father of Z and Z is mother of Y.

2. Write a prolog program to calculate circumference and area of circle.

3. Write a prolog program from below graph –



Is there p to t route exist ?

4. Write a prolog program to find the factorial of any given no. (the no. should be given through keyboard)

$$\text{fact}(n) = \begin{cases} 1 & n \leq 0 \\ n \quad \text{fact}(n-1) & n \geq 1. \end{cases}$$

5. Write a prolog program to calculate the GCD of two nos.

$$\gcd(m,n) = \begin{cases} \gcd(n,m) & n > m \\ m \quad \text{if} & n = 0 \\ \gcd(n, m \bmod n) & n > 0 \end{cases}$$

6. Write a prolog program for displaying all element from list.

7. Write a prolog program for find out the length of any list.

8. Write a prolog program to find last element of a list.

9. Write a prolog program to search an element from list.

10. Write a program to delete an element from list.

PNB	–5 Marks
Viva-voice	–5 Marks

GROUP – B

(*Java Lab.*)

[*Marks* : 25]

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

1. Write a Java program to arrange a list of n numbers in Ascending Order.

2. Write a Java program to implement method overriding.

3. Write a Java program to display prime numbers between a and b.

4. Write a Java program to demonstrate multilevel inheritance.

5. Write a Java program to implement interfaces.

6. Write a Java program to arrange a list of names in Ascending Order.

7. Write a Java program to implement method overloading.

8. Write a Java program to display first *n* fibonacci numbers.

9. Write a Java program to check whether a number is Armstrong or not.

10. Demonstrate abstract class in Java.

11. Write down a Java programme using command line argument concatenation of two string and also find the length of the input which is taken through command line argument.

12. Write down a Java programme using super and this keyword unitedly.

13. Write down a Java programme, show that a constructor can invoked another constructor using this ( ).

14. Write down a Java programme to show the priority if thread.

15. Write down a Java programme using package and also show that a number is prime or not (Applying keyboard connection).

16. Convert a decimal no. into binary number by applying keyboard.

17. Print the non-prime fibonacci no. up to 100 (keyboard connection apply)

18. Find the gcd of two number. (Apply for above number)

19. Print the sum of following series

$$x - \frac{x^3}{\lfloor 3} + \frac{x^5}{\lfloor 5} - \frac{x^7}{\lfloor 7} + \frac{x^9}{\lfloor 9}$$

(keyboard connection apply).

20. Find the sum of the following series :

$1 + 2 + 4 + 7 + 11 + 16 + 22 + \ldots$

Note : Here keyboard connection must.

Practical Note Book – 5 Marks

Viva-voice – 5 Marks