2015

M.Sc.

3rd SEMESTER EXAMINATION

COMPUTER SCIENCE

PAPER—COS-305

(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.

(*AI Lab*)

Answer any *two* questions (*on lottery basis*) : 2×15

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

2. Write a Prolog program to calculate the sum of N natural numbers.

3. Write a Prolog program to find out Nth Fibonacci number.

4. Write a Prolog program to generate the mother and aunt relation.

5. Write a Prolog program to generate mother and brother relation.

6. Write a Prolog program to generate uncle and grand-daughter relation.

7. Write a Prolog program to generate brother and nephew relation.

8. Write a Prolog program to generate sister and uncle relation.

9. Write a Prolog program to generate grandmother and aunt relation.

10. Write a Prolog program to check whether a person have any brother or sister.

11. Write a Prolog program to delete the first element from a list.

12. Write a Prolog program to calculate the number of element of a list.

13. Write a Prolog program to read a number and check whether it is prime or not.

14. Write a Prolog program to calculate the factorial of a number.

15. Write a Prolog program to generate the niece and brother relation.

16. Write a Prolog program to generate sister and nephew relation.

17. Write a Prolog program to insert a number at the first position of a list.

18. Write a Prolog program to generate the mother, grand-father and sister relation.

19. Write a Prolog program to generate the grandson and uncle relation.

20. Write a Prolog Program to delete the last element from a list.

21. Write a Prolog Program to insert a number at the last position of a list.

22. Write a Prolog Program to delete the last element from a list.

23. Write a Prolog Program to insert a number at the last position of a list.

24. Write a Prolog Program for following facts :

X is grandfather of Y. If X is father of Z and Z is father of Y.

Or

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

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

26. Write a prolog program to find the nth term of Fibonacci series :

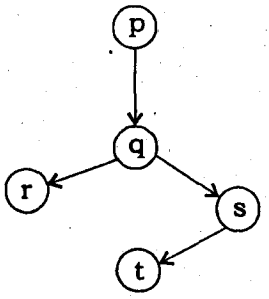
$$\text{fibo}(n) = \begin{cases} 1 & \text{if } n=1 \text{ or } 2 \\ f(n-1)+f(n-2) & \text{if } n > 2 \end{cases}$$

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

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

28. Write a prolog program to read a digit (0 to 9) and print its number in word form i.e. if you have entered '6' then the output will be 'SIX'.

29. Write a prolog program from below graph whether P to t root exist or not :



30. Write a Prolog program for the following facts :

(i) object 1 is on object 2 ;

(ii) object 2 is on table 1 ;

(iii) object 3 is on object 4 ;

(iv) object 4 is on table 1.

Whether object 1 is above table 1 or not ?

31. Write a prolog program to display all elements from list.

32. Write a prolog program to calculate the length of a list.

33. Write a prolog program to find the last element from list.

34. Write a prolog program for the following facts :

(i) Merry likes all kinds of food.

(ii) Piza is the food.

(iii) Apple is the food.

(iv) Anything any one eats is the food.

(v) Annya eats everything Merry eats.

Question is given below :

(a) What food does Annya eats ?

(b) Does Merry likes chicken ?

35. Write a prolog program to delete an element from list.

Internal Assessment — 10

PNB + Viva-voice — 10

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