Indian Institute of Technology, Patna
Prolog Assignment
Full Marks: 35

03/09/2016

1. Suppose Shyam and Sita are the son and daughter of Gita (mother) and Ram (father) respectively. Write a Prolog program to check if Sita is the sister of Shyam. Also find whose sister is Sita.
   (Marks - 2+2=4)

2. Write a Prolog program to (note: Don't use library functions)
   (Marks - 7×2=14)

   (a) to find the length of a list.

   (b) increment the elements of a list to produce another list.

   (c) reverse a list

   (d) append a list L2 with a given list L1

   (e) to check if a element is a member of a list.

   (f) to remove duplicates from a list.

   (g) to perform union and intersection of two given lists.

3. Write a Prolog program to calculate factorial of a number.
   (Marks - 2)

4. A, B and C belong to the Himalayan club. Every member in the club is either a mountain climber or a skier or both. A likes whatever B dislikes and dislikes whatever B likes. A likes rain skier likes snow. Is there a member who is a mountain climber and not a skier?
   (Marks - 5)

5. Write a Prolog program for Circuit Verification of the circuit 2-bit full adder.
   (Marks - 10)