School of Computer Science Engineering and Technology

Course- BTech   Type- Core
Course Code- **CSET302**   Course Name- **Automata Theory & Computability**
Year- Third   Semester- Odd Batch- BTech 5th Semester

Tutorial-11

Tutorial No.	Name	CO1	CO2	CO3	CO4
11	**Turing Machine**	--	--	--	4

Objective: Representation of Recursively Enumerable Language: Turing Machine

1. Construct a TM that accepts the regular language.

   L = {0, 10} over alphabet $\sum$ = {0,1}.

2. Construct a TM that accepts the regular language.

   L = {w| w = 01*0} over alphabet $\sum$ = {0,1}.

3. Construct a TM that accepts the regular language.

   L = { w| w $\in$ (0+1)*} | n$_0$ (w) = Even} over $\sum$ = {0, 1}

4. Construct a TM that accepts the regular language.

   L = { w | w = a(a+b)*} over $\sum$ = {a, b}.

5. Construct a TM that takes two non-negative integers as input and produces their sum as output.

6. Construct a TM which computes the addition of two positive integers m+n, where the input string is #0^m10^n# format.

7. Construct a TM for computing difference between two number x and y, such that x > y.

8. Construct a TM for finding 2's complement of a given binary number.

9. Construct a TM for the language.

   L = {a^n b^n c^n d^n| n $\geq$ 1} over $\sum$ = {a, b, c, d }.

10.   Construct a TM for the language.

   L = {ww^R | w $\in$ (a+b)*} over $\sum$ = {a, b}.