Q.1 Define the following terms with examples: Alphabet, Power of an alphabet, String, Concatenation and Languages.

Marks: 10

BT Level: L3

Q.2 Define DFSM. Design a DFSM to accept each of the following languages:

(i) L= {wϵ{0,1}\* : w has 001 as a substring}

(ii) L= {wϵ{0,1}\* : w has even number of a’s and even number of b’s}

Marks: 10

BT Level: L2

Q.3 Convert the following NDFSM to DFSM.

Marks: 10

BT Level: L1

Q.4 Define distinguishable and indistinguishable states. Minimize the following DFSM.

Marks: 10

BT Level: L5

Q.5 Define Regular expression. Write the regular expression for the following languages:

- Representing strings of a’s and b’s having odd length.

- To accept strings of a’s and b’s such that the third symbol from the right is 'a' and the fourth symbol from the right is 'b'.

Marks: 10

BT Level: L1