

## Theory of Computation

1<sup>st</sup> mid

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1. Write any four application of NFA & DFA [7]

2. Construct a DFA for the following language

$L = \{w \mid w \text{ is a binary string that has been even number of 1s and even numbers of 0s}\}$  [5]

3. Construct a NFA for the following :Strings where the first symbol is present somewhere later on at least once. [5]

4. Write Bad case where  $\text{states(DFA)} \gg \text{states(NFA)}$  describe with pigeonhole principle [7]