

## Quiz # 1

### Theory of Automata and Formal Languages

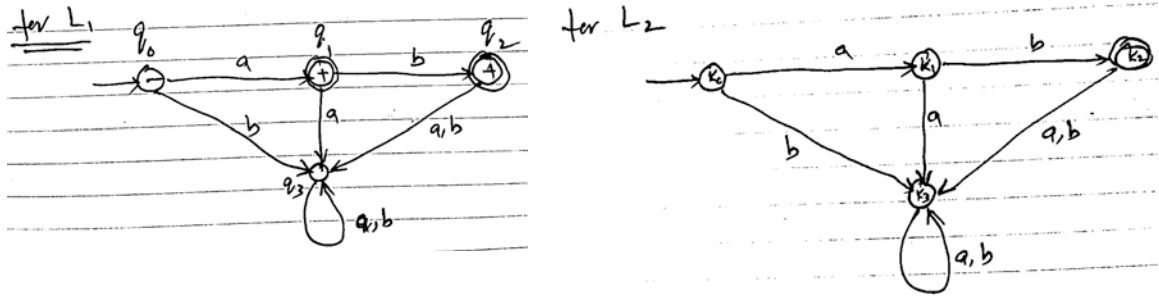
Total Marks: 30

Course Code: CS-3131

**Q1:** Design a DFA for the regular expression  $(11+110)^*0$  [5]

**Q2:** Provide a regular expression for the language of all strings with odd number of 1s where the  $\Sigma = \{0,1\}$ . [5]

**Q3:** If  $L_1 = \{a,ab\}$  and  $L_2 = \{ab\}$  and their respective DFAs are given as follows then find the union, intersection and complement for the both the languages. Separate DFAs should be provided for each operation. [10]



**Q4:** Convert the following NFA into DFA using subset construction method. [10]

