Exercise - 3

Regular Grammar & Regular Sets

Q 1: List all the strings of length up to five corresponding to the following regular expressions over {a,b}.

1. a(a+b)\*
2. a(aa)\*
3. (a+b)\*c
4. (aa+bb)c(ab+ba)
5. (aa+bb)\*c(ab+ba)

Q 2: For the following regular expressions, draw the corresponding finite automata:

1. (111+000)\*1
2. (0+1)\*0(0+11)\*
3. 0+10\*+001\*00
4. (0+1)\*(01+1110)

Q 3: Draw a finite automaton M accepting the grammar S -> bS | aA, A -> bA | a. Find the regular expression corresponding to M.

Q 4: For the following language over {a,b}, find the corresponding regular expression R.

1. Every word in the language contains exactly three a’s.
2. Every word in the language contains minimum three a’s.
3. Every word contains alternate 00s and 11s.
4. L={ambn | m,n>1}
5. Every word begins and ends with 00.

Q 5: For the finite automaton in the following figure find the corresponding regular expression.



Q 6: For the finite automaton in the following figure find the corresponding regular expression.

