

Theory of Automata
Spring-2020 Mid-Semester Assignment
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- Attempt All Tasks.

Q#1. Keeping in view the Kleene's Theorem, proof for any language S. (10)

$$S^+ = (S^+)^+$$

Q#2. How many words does S^* will have of length 3, 4 and 5, if (10)

$$S = \{ab \quad ba\}$$

(Design S^* and then write answers on the basis of words of S^*)

Q#3. Fill in the blanks. (10)

1. A dictionary is arranged in _____ order.
2. + is called _____ instances.
3. * is called _____ instances.
4. ? is called _____ instances.
5. A Formal Language is game of _____ on paper.
6. ^ is included in _____ closure.
7. _____ is a word whose reverse is equal to itself.
8. _____ is an operation in which symbols are placed side by side.
9. $\{a \ b\} = \{b \ a\}$ for _____ operation.
10. Two words having same symbols in same order are called _____ words.