

Regular Language Models Part-6

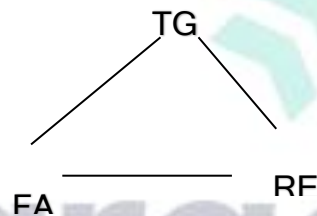
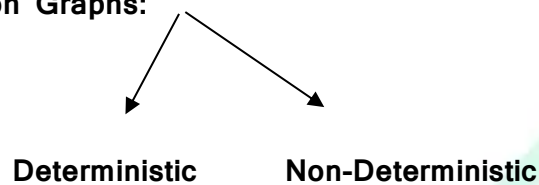


Regular Language Models Part-6

Content:-

1. Transition Graphs
2. Notations
3. Steps of Conversion

Transition Graphs:



→ Transition graphs are more powerful as compared to FA's because in FA's:-

1. These can be only one initial state
2. We can read only single symbol at a time
3. We cannot move to any state reading null

whereas in TG:-

1. More than one q_0
2. We can read entire string
3. We can move to next state reading null

→ TG's are also finite

→ TG's are also Deterministic / Non-Deterministic

→ TG's , RE & FA all have some power

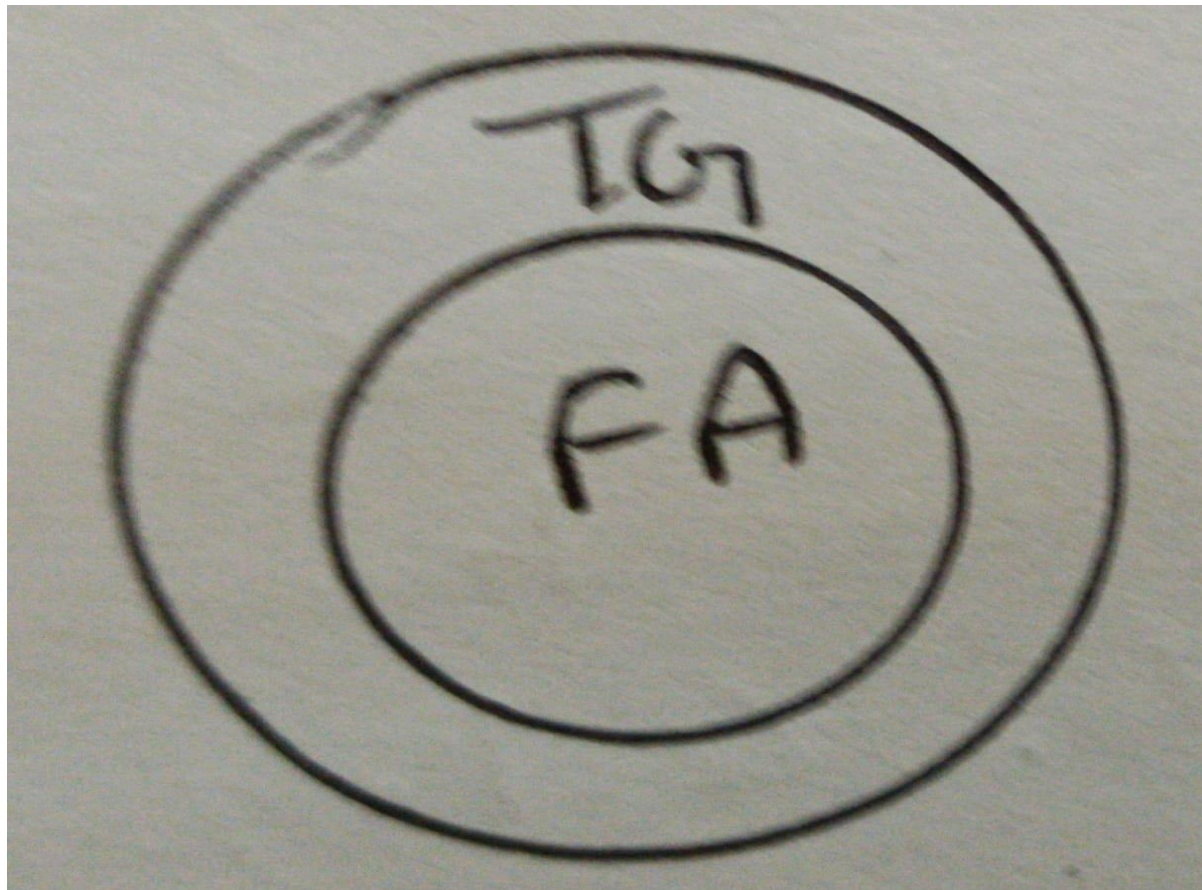


TG convertible to RE

RE convertible to FA

Conversions:

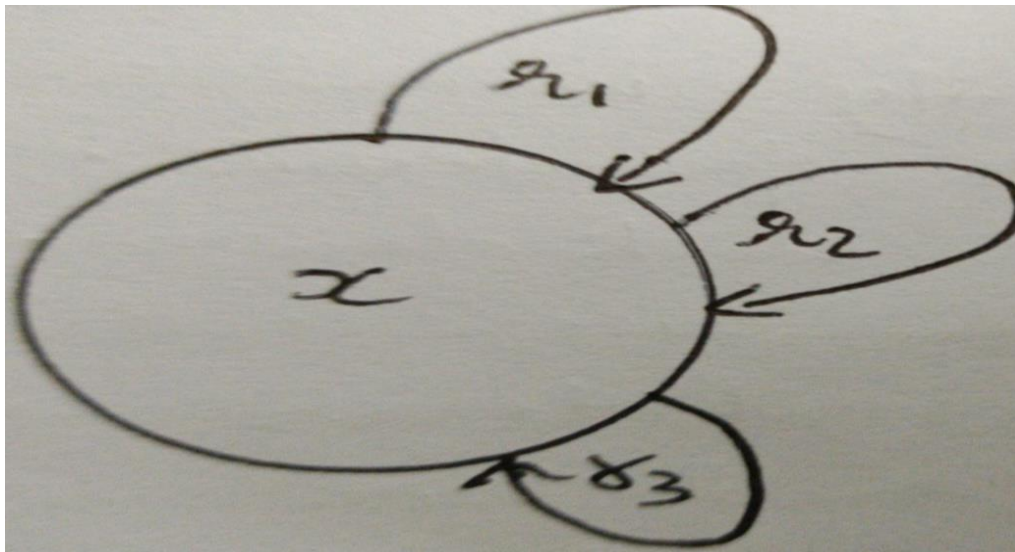
1. FA \rightarrow TG



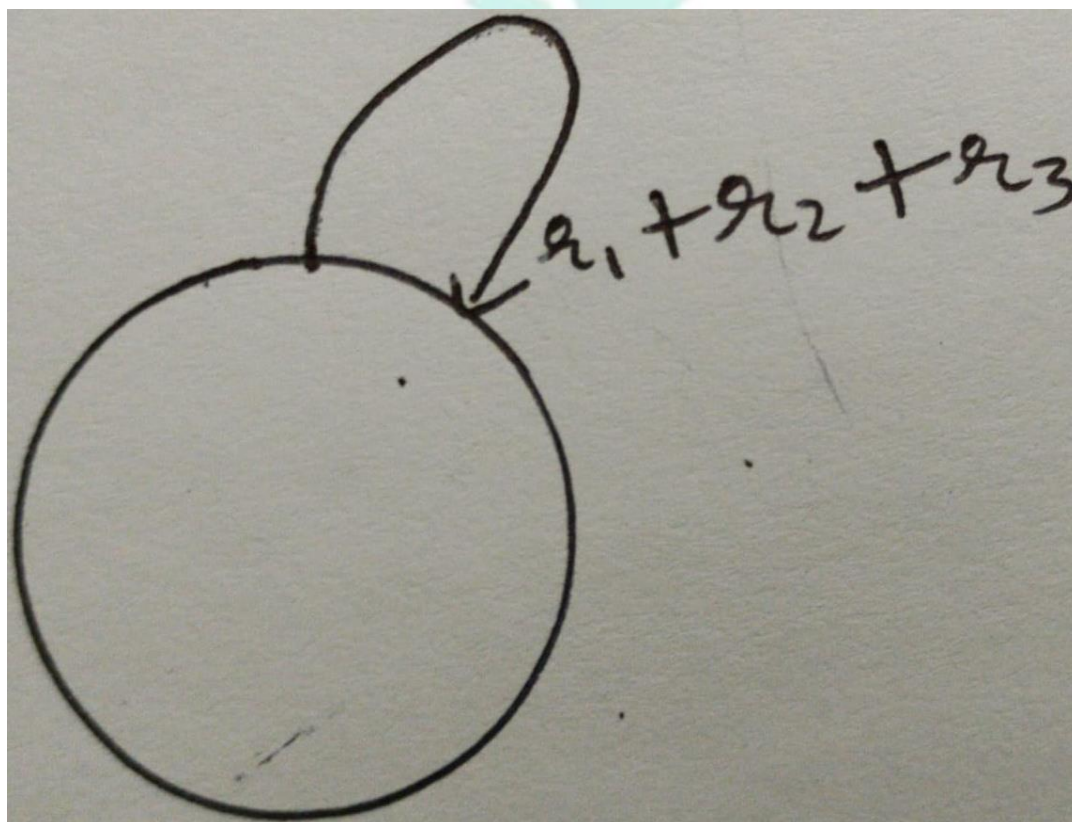
2. TG \rightarrow RE

Notations:

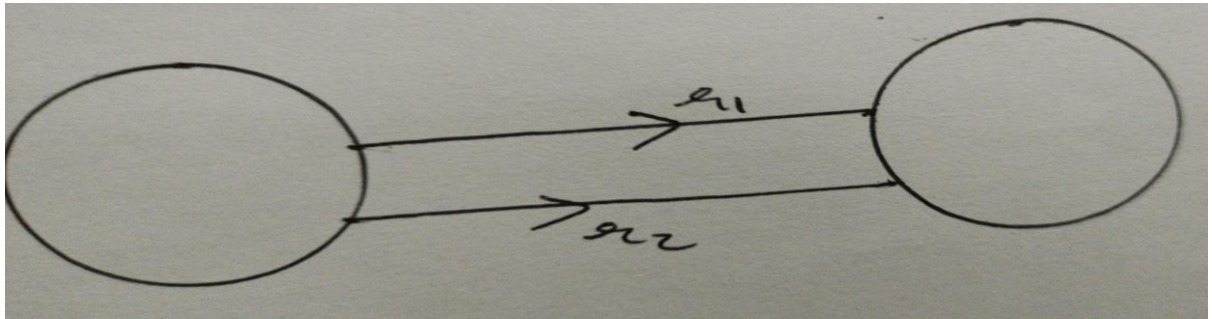
1.



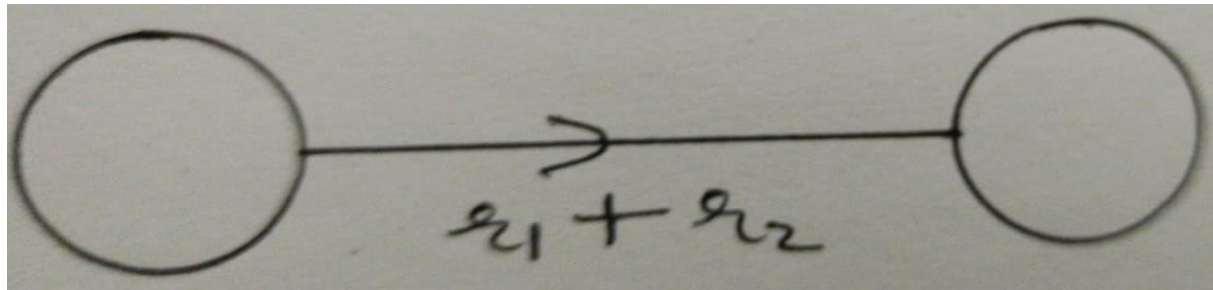
Can be written as



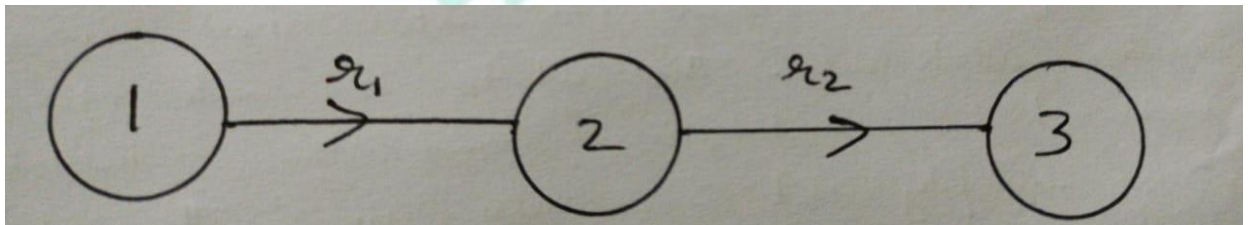
2.



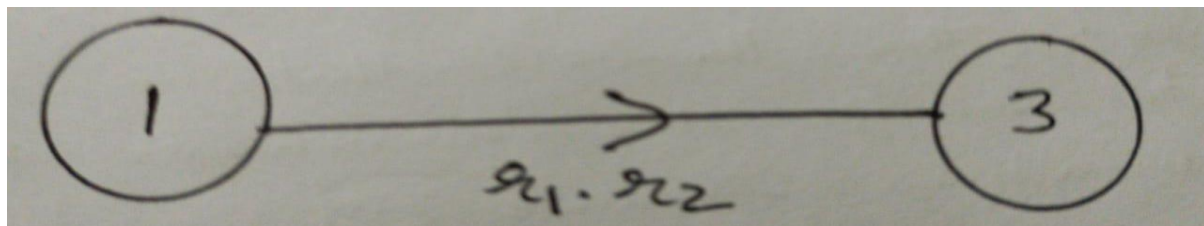
Can be written as



3.



Can be written as



4. Whenever a state is eliminated , **conditions:** the string is replaced by its kleen star.

1. There should be a single initial state without self loop

OR

Non-enterable initial state

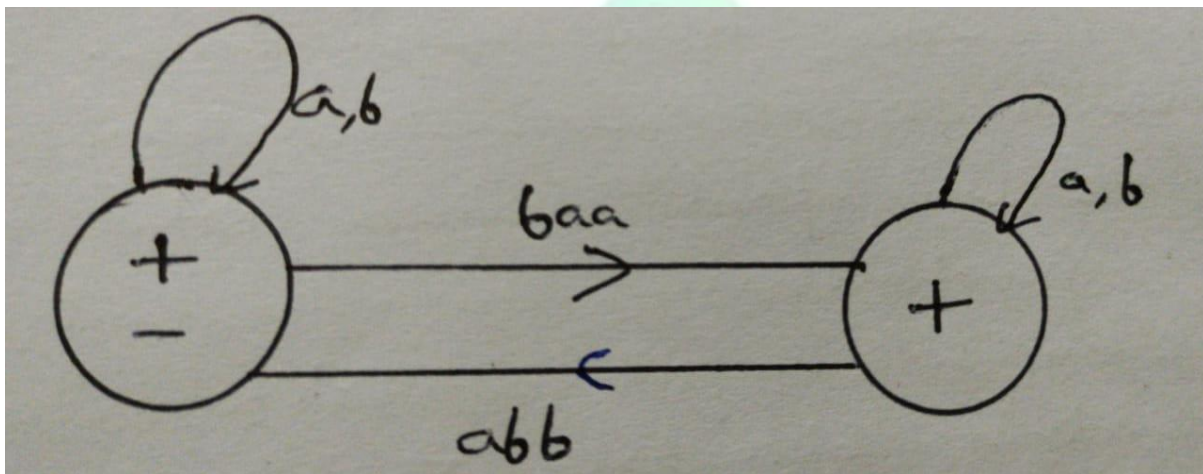
2. There should be single final state without self loop

OR

Non-leave able finite state

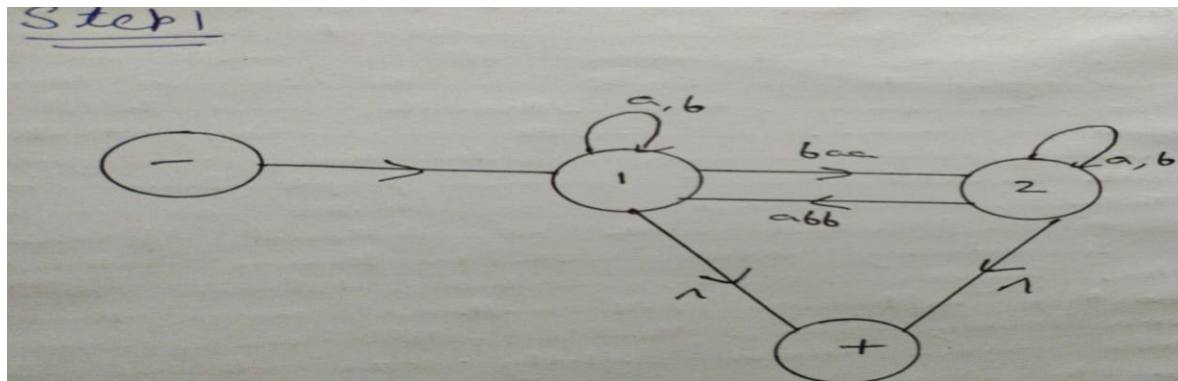
3. A single path between initial & final state

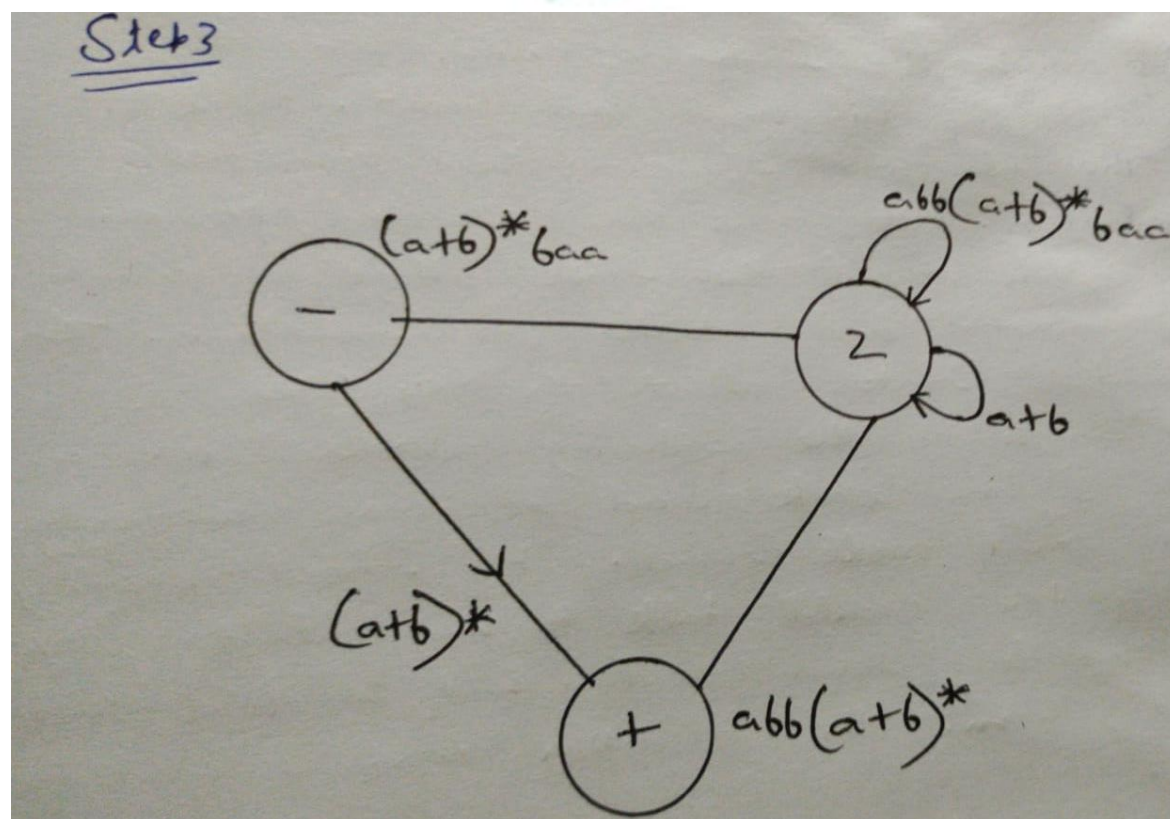
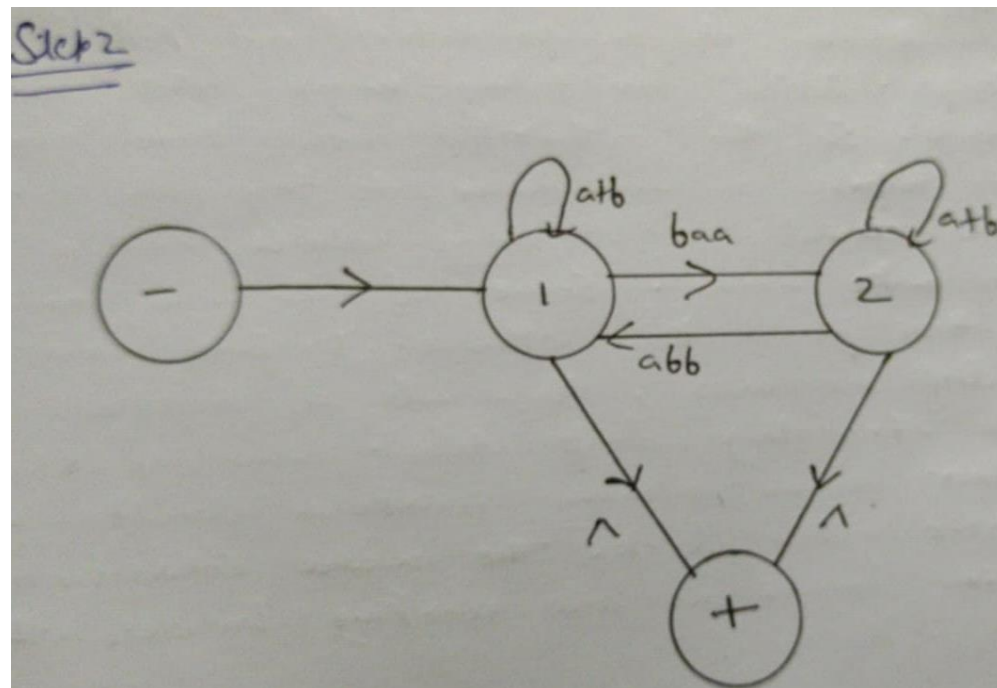
Q.

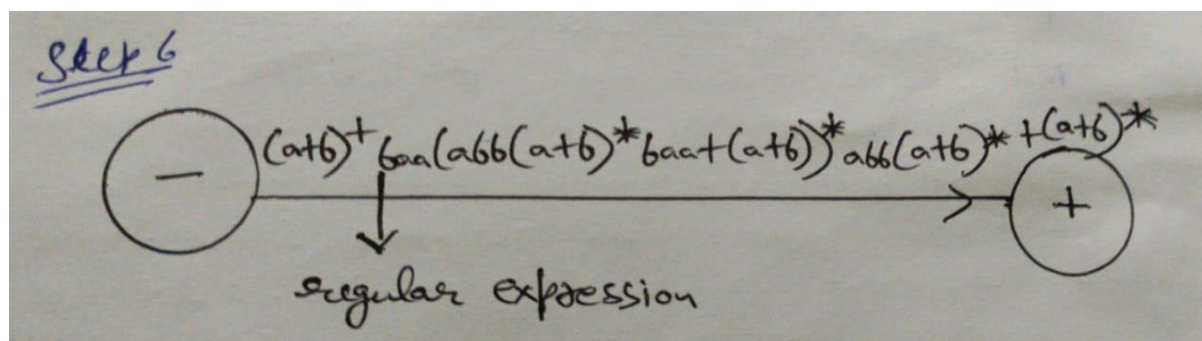
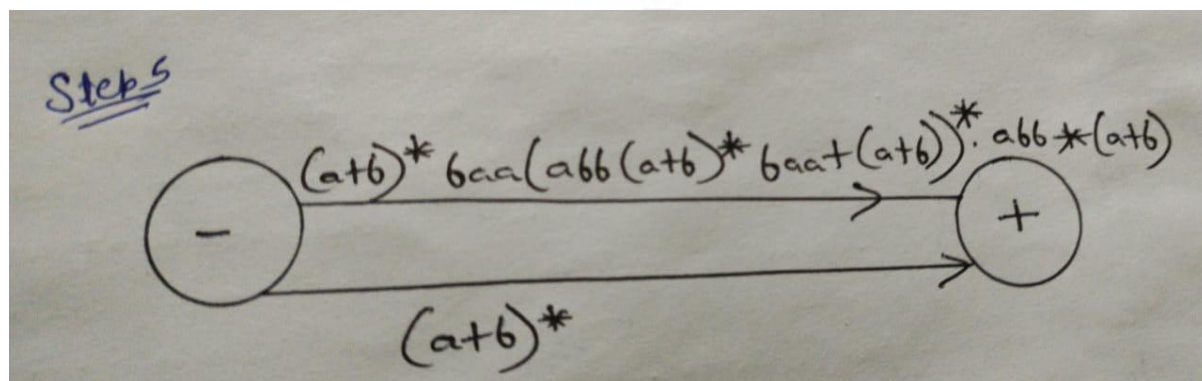
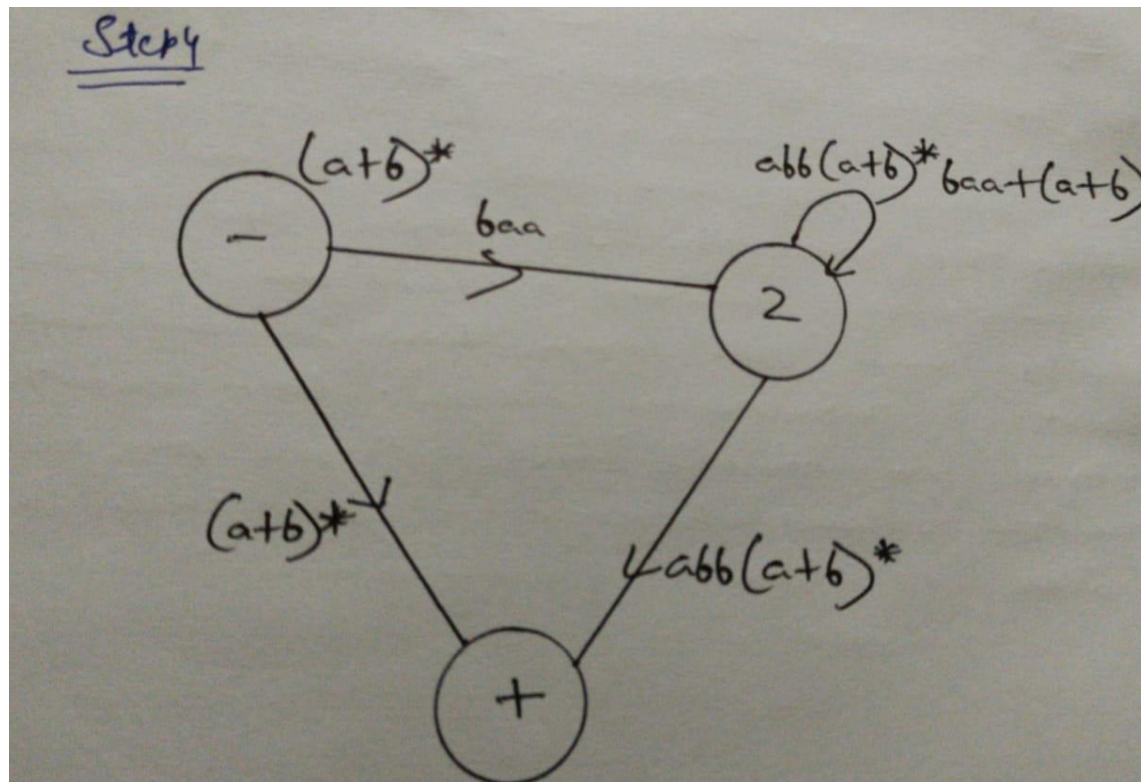


Here \rightarrow - initial state

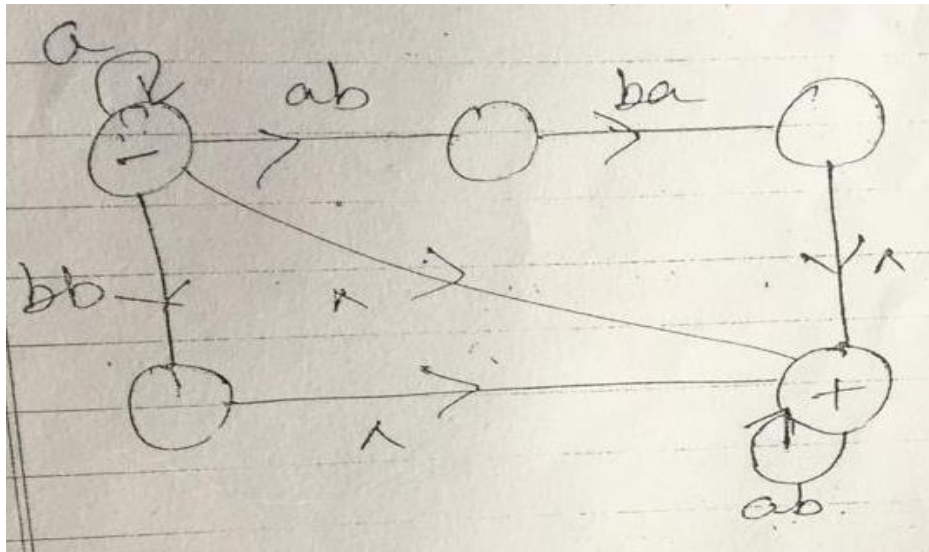
+ final state



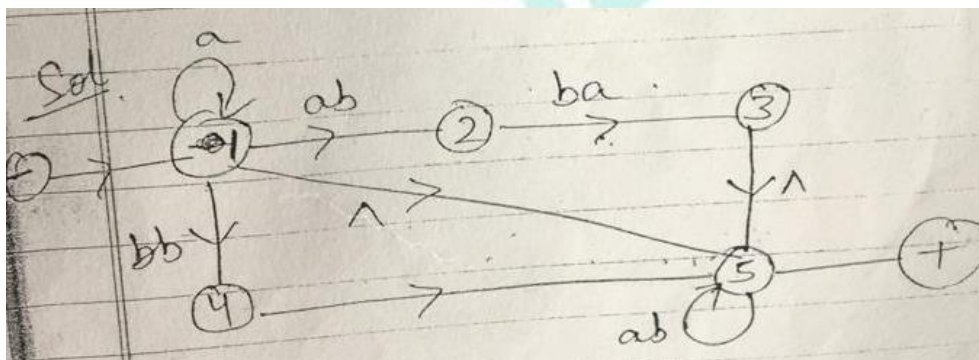




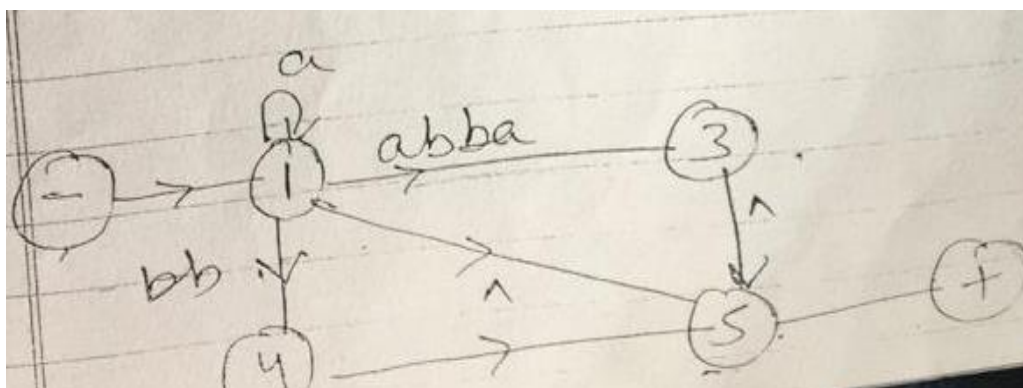
Q. Solve the below question:



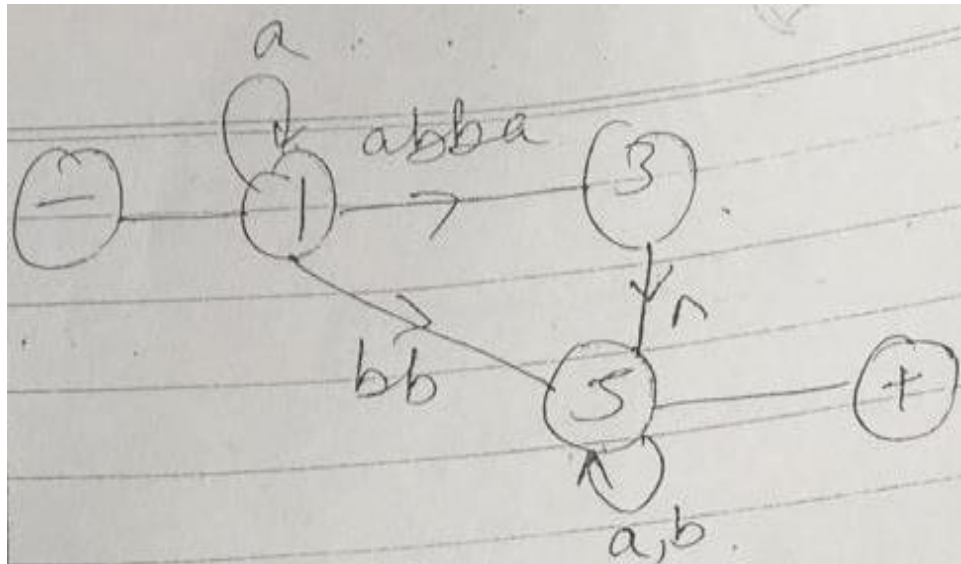
Sol.



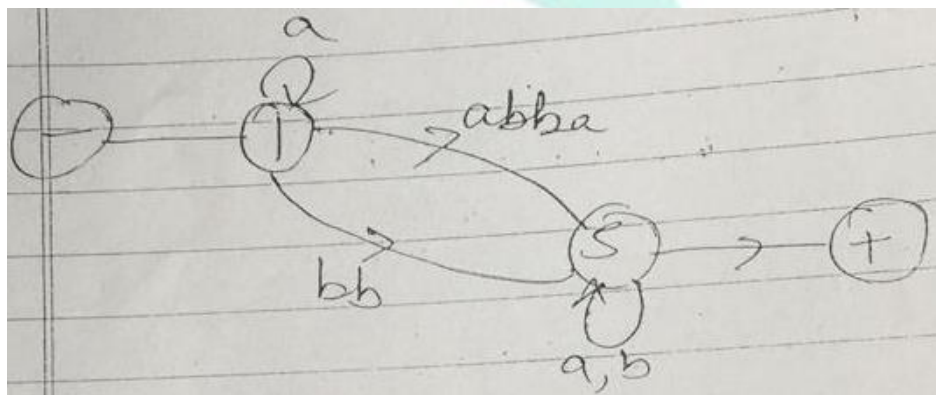
Step 1:



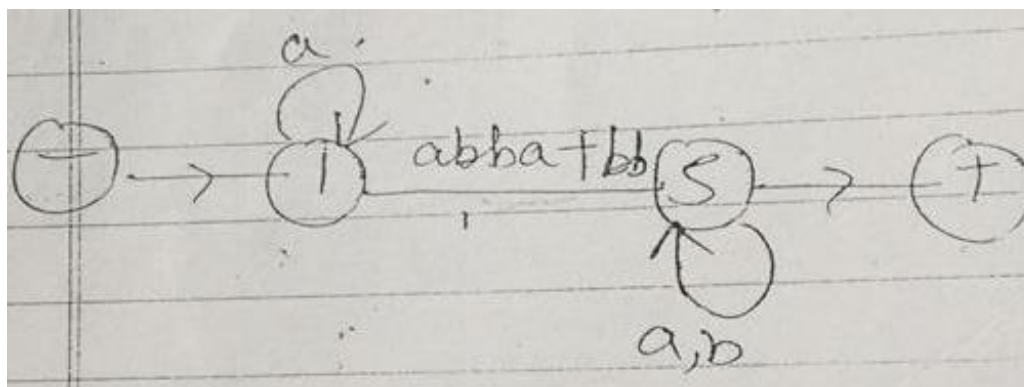
Step:2



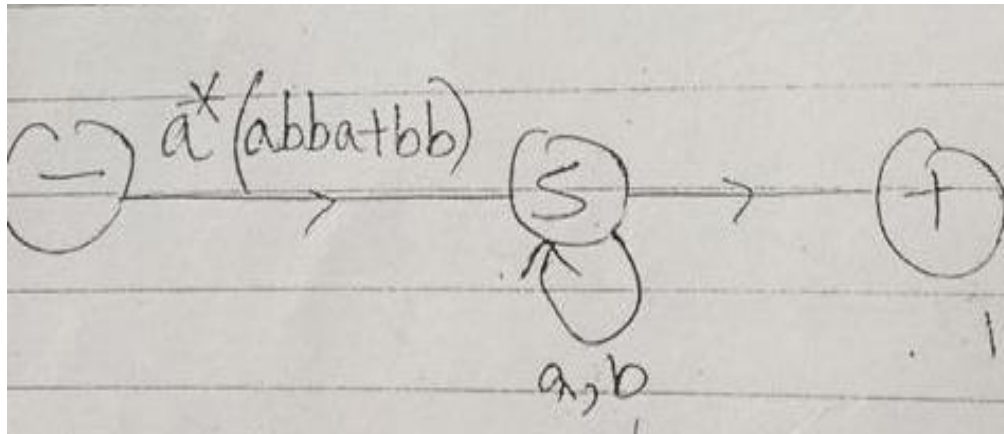
Step3:



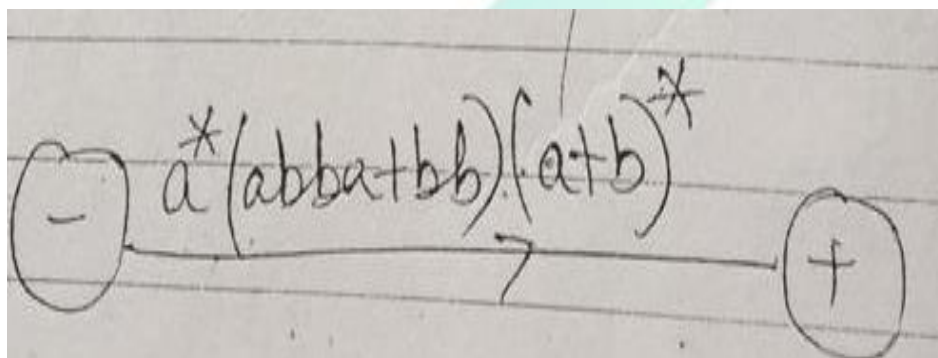
Step4:



Step 5:



Step 6:





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