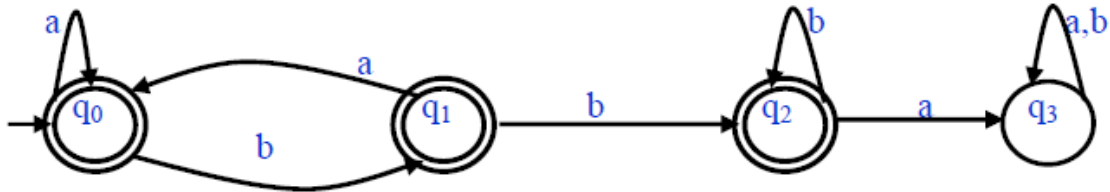


Solution Sheet 2

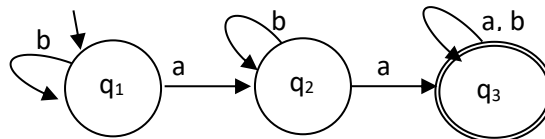
I. Choose the correct answer:

1.



- a. $L = \{w \in \{a, b\}^* : w \text{ contains all strings that begin with } a\}$.
- b. $L = \{w \in \{a, b\}^* : w \text{ contains all strings that end with } abb \text{ or } ab\}$.
- c. $L = \{w \in \{a, b\}^* : w \text{ contains all strings that do not contain } bba\}$.
- d. $L = \{w \in \{a, b\}^* : w \text{ contains all strings that do not contain } abbb\}$.

2. What is the language defined by the following DFA:



- a. $\{babab\}$
- b. $\{b^n a b^n a b^n, n \geq 0\}$
- c. $\{b^n a b^m a, m, n \geq 0\}$
- d. $\{b^n a b^m a b^k, m, n, k \geq 0\}$

3. If $A = \{a, ba\}$, which of the following strings is NOT in A^* :

- a. **bb**
- b. λ
- c. aa
- d. baa

4. If $L = \{a, aa, aaa, \dots\}$ and $M = \{\lambda, b, bb, bbb, \dots\}$, which of the following strings is in $L.M$:

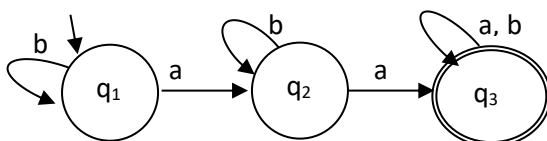
- a. **ab**
- b. abba
- c. baa
- d. λ

5. If $\Sigma = \{ab, c\}$, $u = abcc$ and $v = cab$, then $|u^2 v|$ equals

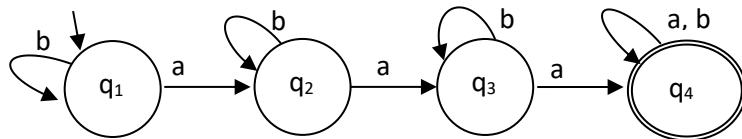
- a. 11
- b. **8**
- c. 7
- d. 5

IV.

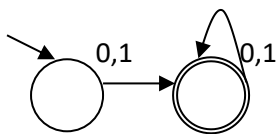
1.



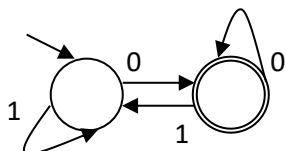
2.



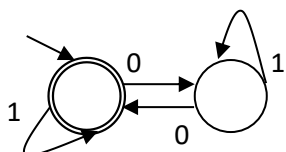
V.



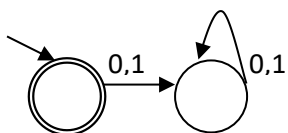
1.



2.

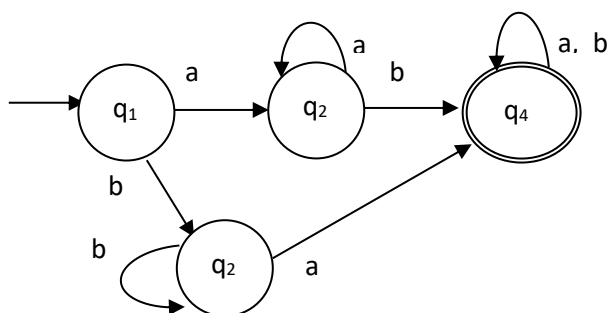


3.

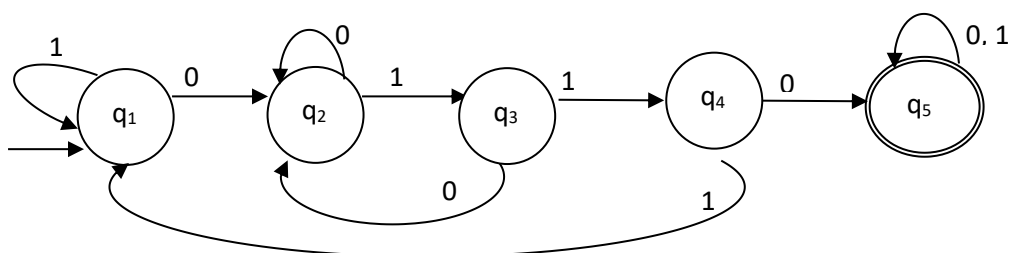


VI.

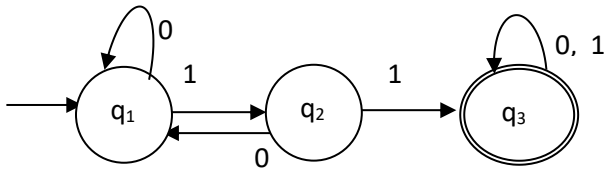
1.



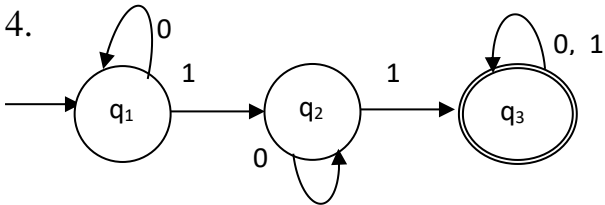
2.



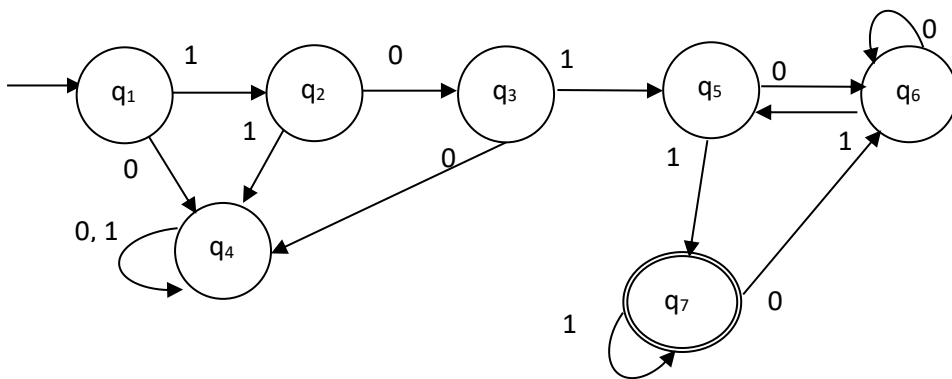
3.



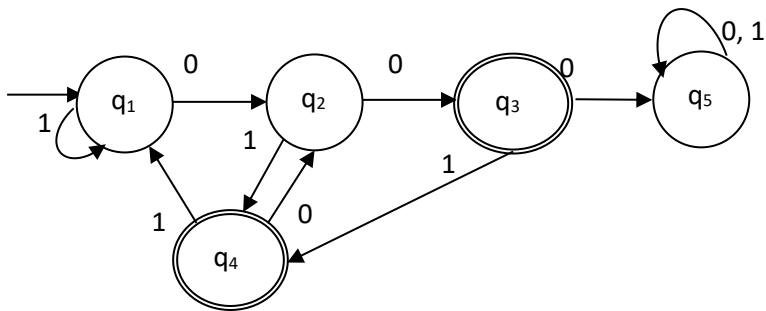
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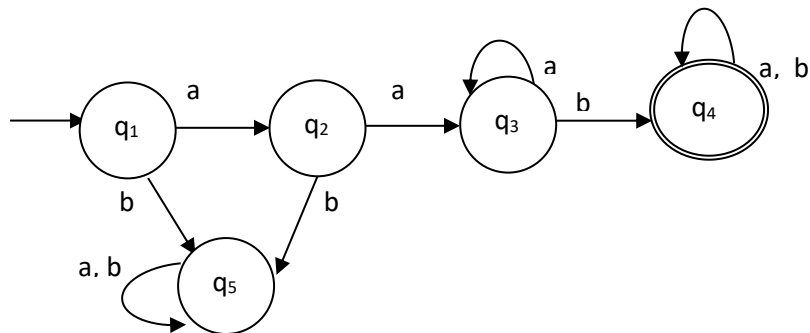
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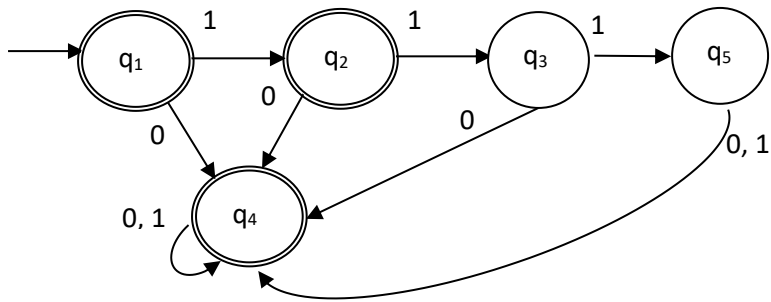
6.



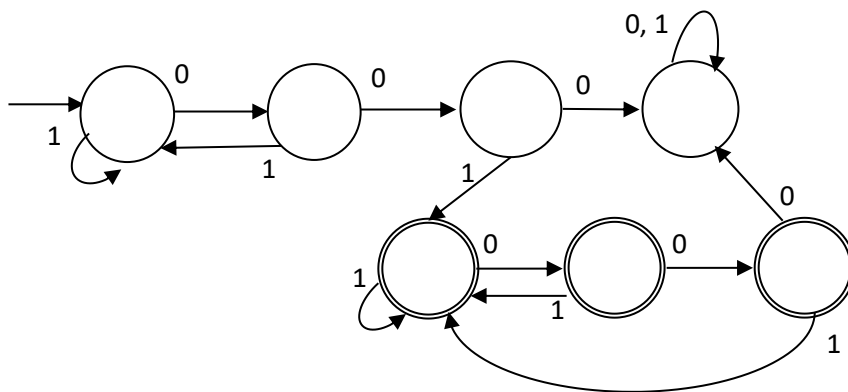
7.



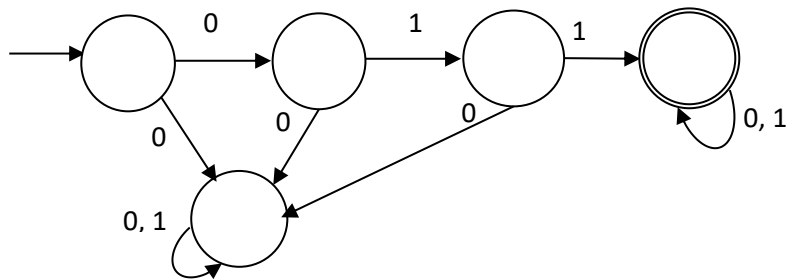
8.



9.



10.



11.

