## CS & IT ENGINEERING

Theory of Computation (Finite Automata)

**DPP 12** Discussion



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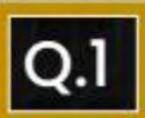




TOPICS TO BE COVERED

01 Question

02 Discussion



## Which of the following language is not regular?

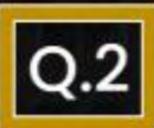


A. 
$$L = \{w \mid w \in \{a, b\}^*\} = (a+b)^*$$

B. 
$$L = \{xy \mid x, y \in \{a, b\}^*\} - (\alpha + b)^*$$

C. 
$$L = \{xy \mid |x| = |y|, x, y \in \{a, b\}^*\} = \left(a + b^2\right)^T$$

D. None of these



## Which of the following language is/are regular?





$$L = \{ww^R | w \in \{0, 1\}^*\}. \longrightarrow Set of even trook patindentes$$



L = {Set of all palindrome}.



 $L = \{Number of a's equal to number of b's\}.$ 



L = {
$$\text{wwp} \mid \text{w, p} \in \{0, 1\}^*$$
} =  $\left(0+1\right)^*$ 



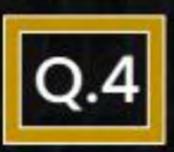
Consider the following given language L.

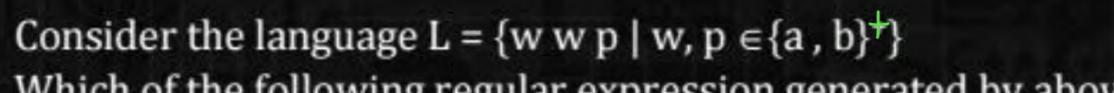
L = {p q w w r | w, p, q, r  $\in$  {a, b}\*}  $= (a+b)^*$ The regular expression generated by above language is?

A. 
$$(a + b)^2 (aa + bb) (a + b)$$

B. 
$$[(a + b)^2]^* (aa + bb) (a + b)^*$$

D. None of these

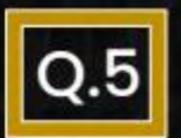






Which of the following regular expression generated by above language?

B. 
$$(a + b)^+ (a + b)^+$$



Consider the following language L:



 $L = \{xw \mid | x | = 2, w \in \{a, b\}^*\}$ 

For the above language L, how many equivalence classes are possible?\_\_\_\_.

$$\frac{2}{2},\frac{3}{70}$$

$$\frac{2}{70}$$

$$\frac{3}{2}$$

$$\frac{3}{70}$$

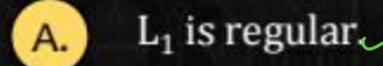


Consider the following languages.

$$L_1 = \{w \times w^R\} \mid w, x \in \{a, b\}^{\dagger}\} \longrightarrow \text{Regular}$$

 $L_2 = \{ w \ w^R x \mid w, x \in \{a, b\}^+ \}$ 

Which of the following language is regular?



- B. L<sub>2</sub> is regular.
- C. Both  $L_1$  and  $L_2$  are regular.
- D. None of these.





