CS & IT

Pw

ENGINERING

Theory of computation

Finite automata



DPP 03 Discussion Notes



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TOPICS TO BE COVERED

01 Question

02 Discussion



For L = $\{a^nb^m \mid n,m \ge 0\} = \{\varepsilon,\alpha,\alpha\alpha,\dots,b,bb,\dots,ab\}$ $\sqrt{2}$ What will be the regular expression?



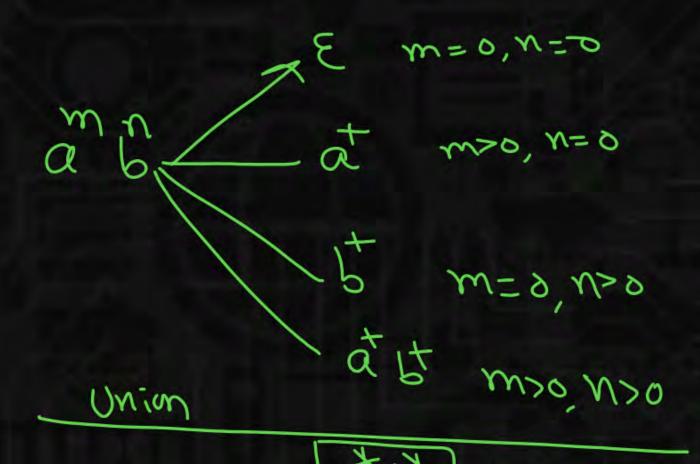
[MCQ]

$$(a*b*)* = (a+b)^{*} \times$$









Consider the following regular expressions:



(aa + aaa)* =
$$\underline{aa}$$
+

(H)
$$(a*b(a+b)* + (a*b*)*) = (a+b)*$$

(H1)
$$(\varepsilon + aaa (aaa)^*) (\varepsilon + a + aa) = (a + aa + aaa)^*$$

Which the following is correct?

- A. (I) and (III) only.
- B. (II) And (III) only.
- C. All are correct.
- D. None of them are correct.

$$(aa+aaa) = aa$$
 [MCQ]

$$\frac{1}{min=\epsilon}$$

$$\frac{\pi}{a^*b(a+b)^*} + (a^*b^*)^* = (a+b)^*$$

$$\frac{\pi}{a^*b(a+b)^*} + (a+b)^*$$

$$\frac{\pi}{a^*b(a+b)^*} + (a+b)^*$$
Trect

Which of the following is/are regular expression for the language:



L = {Containing ab as a substring}





b* aa*b (a*b*)* =
$$b^*aa^*b(a+b)^*$$

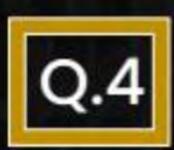




(a* b*)* ab (a* + b*)* =
$$(a+b)^*ab(a+b)^*$$



$$(a + b)^* ab (a + b)^*$$



What will be the regular expression for $L = \{a^{2n} | n \ge 15\}$ over



$$\Sigma = \{a\} \quad ?$$

A.
$$a^{15}(aa)^*$$

(aa)*
$$a^{15}$$

$$L = \begin{cases} \frac{2n}{a} & n \ge 15 \end{cases}$$

$$L = \begin{cases} \frac{30}{a}, & \frac{32}{a}, & \frac{34}{a}, & \frac{36}{a} \end{cases}$$

$$= \begin{cases} \frac{30}{a} \in \frac{30}{a}, & \frac{30}{a}, & \frac{4}{a}, & \frac{30}{a} \end{cases}$$

$$= \begin{cases} \frac{30}{a} (aa)^{\frac{1}{2}} = (aa)^{\frac{1}{2}} a^{\frac{1}{2}} \end{cases}$$

Which of the following string does not belong to (ab*)*?



[MCQ]

- A. aaabbaa
- baaaabb not possible
- c. <u>aaabbb</u>
- D. ababa

$$L = \left(ab^*\right)^*$$

$$= \left(\varepsilon, a, ab, aa, \dots\right)$$



