

2 Lecture - CS402

Important Mcqs

1. Which of the following is the notation used for Kleene star closure?

- a) *
- b) \$
- c) +
- d) #

Answer: a) *

What is the result of applying Kleene star closure to the empty set?

- a) The empty set
- b) The set containing the empty string
- c) The set containing the null character
- d) The set containing the epsilon symbol

Answer: b) The set containing the empty string

Which of the following is an example of a language that can be represented using Kleene star closure?

- a) {0, 1, 2, 3}
- b) {0, 00, 000, ...}
- c) {a, b, c}
- d) {1, 2, 3, ..., n}

Answer: b) {0, 00, 000, ...}

Which of the following is equivalent to applying Kleene star closure to a set of strings?

- a) Concatenating all the strings in the set
- b) Taking the union of all the strings in the set
- c) Taking the intersection of all the strings in the set
- d) Taking the complement of all the strings in the set

Answer: a) Concatenating all the strings in the set

Which of the following is an example of a regular expression that uses Kleene star closure?

- a) $(0+1)^*$
- b) 01
- c) $(00+11)^*$
- d) $(0+1)\#$

Answer: a) $(0+1)^*$

What is the Kleene star closure of the set {a}?

- a) {a}
- b) {aa}
- c) {a, aa}
- d) {epsilon}

Answer: c) {a, aa}

What is the Kleene star closure of the set {epsilon}?

- a) {epsilon}

b) $\{e\}$

c) $\{0\}$

d) $\{\}$

Answer: a) $\{\epsilon\}$

Which of the following is true about the Kleene star closure operation?

a) It is distributive over union

b) It is distributive over concatenation

c) It is commutative

d) It is associative

Answer: d) It is associative

Which of the following is an example of a language that cannot be represented using Kleene star closure?

a) $\{\epsilon\}$

b) $\{a^n b^n \mid n \geq 0\}$

c) $\{a, aa, aaa, \dots\}$

d) $\{a^n \mid n \text{ is prime}\}$

Answer: b) $\{a^n b^n \mid n \geq 0\}$

Which of the following is an example of a regular expression that uses Kleene star closure and concatenation?

a) $(0+1)^*$

b) 01

c) $(00+11)^*$

d) $(0+1)\#(0+1)^*$

Answer: d) $(0+1)\#(0+1)^*$