

**RIZ MUGHAL**

# QUIZ MASTER

## Grand Quiz(CS402)

100% correct solution.

For more information you can visit my channel and for any type of help related to CS619 you can contact me.



### **YOUTUBE CHANNEL:**

<https://www.youtube.com/channel/UCINsFwDiB62SValCcPDZbRQ/playlists>

### **FACEBOOK GROUP:**

<https://www.facebook.com/groups/923887914750307>

Question # 1 of 30 ( Start time: 01:08:19 AM, 30 December 2020 )

Total |

Which of the following steps replaces multiple incoming transition edges with a single one in proving Kleene's theorem part II?

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | 1 |
| <input type="radio"/>            | 2 |
| <input checked="" type="radio"/> | 3 |
| <input type="radio"/>            | 4 |

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Question # 2 of 30 ( Start time: 01:08:40 AM, 30 December 2020 )

Let FA1 accepts many strings and FA2 accepts no string, then  $FA1+FA2$  will be equal to:

Select the correct option

- |                                  |         |
|----------------------------------|---------|
| <input checked="" type="radio"/> | FA1     |
| <input type="radio"/>            | FA2     |
| <input type="radio"/>            | FA2-FA1 |
| <input type="radio"/>            | (FA2)*  |

Click to Save

Question # 3 of 30 ( Start time: 01:08:52 AM, 30 December 2020 )

Total Marks: 1

Let  $L$  be the language of all strings, defined over  $\Sigma = \{0,1\}$ , ending in 10. Which of the following strings are indistinguishable with respect to  $L$  with  $z$  being 0?

Select the correct option

- |                                  |          |    |
|----------------------------------|----------|----|
| <input type="radio"/>            | 100, 101 | // |
| <input checked="" type="radio"/> | 111, 101 | // |
| <input type="radio"/>            | 110, 101 | // |
| <input type="radio"/>            | 010, 101 | // |



Question # 4 of 30 ( Start time: 01:09:13 AM, 30 December 2020 )

If  $r1 = (aa + bb)$  and  $r2 = (a + b)$  then the language  $(aa + bb)(a + b)$  will be generated by \_\_\_\_\_

Select the correct option

- |                                  |             |
|----------------------------------|-------------|
| <input checked="" type="radio"/> | $(r1)(r2)$  |
| <input type="radio"/>            | $(r1 + r2)$ |
| <input type="radio"/>            | $(r2)(r1)$  |
| <input type="radio"/>            | $(r1)^*$    |

Question # 5 of 30 ( Start time: 01:09:25 AM, 30 December 2020 )

Total

Introducing new start state in case of multiple start states is the step no. \_\_\_\_\_ of proving Kleene's theorem part II.

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input checked="" type="radio"/> | 1 |
| <input type="radio"/>            | 2 |
| <input type="radio"/>            | 3 |
| <input type="radio"/>            | 4 |

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Question # 6 of 30 ( Start time: 01:09:37 AM, 30 December 2020 )

The language having even number of a's and even number of b's defined over  $S = \{a, b\}$  is called \_\_\_\_\_

Select the correct option

<input checked="" type="radio"/>	EVEN-EVEN
<input type="radio"/>	ODD-ODD
<input type="radio"/>	PALINDROME
<input type="radio"/>	FACTORIAL

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Question # 7 of 30 ( Start time: 01:10:13 AM, 30 December 2020 )

In NFA having no transition at certain state, FA can be built by introducing:

Select the correct option

<input checked="" type="radio"/>	Empty state
<input type="radio"/>	Combination of states
<input type="radio"/>	Initial state
<input type="radio"/>	Final state

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## Question # 8 of 30 ( Start time: 01:10:27 AM, 30 December 2020 )

For every three regular expressions R, S, and T, the languages denoted by  $R(S \cup T)$  and  $(RS) \cup (RT)$  are the \_\_\_\_\_.

Select the correct option

<input checked="" type="radio"/>	Same
<input type="radio"/>	Different
<input type="radio"/>	$R(S \cup T)$ is Greater
<input type="radio"/>	None of the given options

Question # 9 of 30 ( Start time: 01:11:19 AM, 30 December 2020 )

Which of the following string belongs to the language of the regular expression  $(aa^*b)^*$ ?

Select the correct option

- |                                  |        |
|----------------------------------|--------|
| <input type="radio"/>            | baabab |
| <input type="radio"/>            | abbbaa |
| <input type="radio"/>            | aaaaaa |
| <input checked="" type="radio"/> | aabaab |

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Question # 10 of 30 ( Start time: 01:11:34 AM, 30 December 2020 )

If  $L_1'$  and  $L_2'$  are regular languages, then  $L_1.L_2$  will be

Select the correct option



regular



non regular



may be regular



none of the mentioned

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Question # 11 of 30 ( Start time: 01:11:45 AM, 30 December 2020 )

Total Marks: 1

Suppose a language  $L_1$  has 2 states and  $L_2$  has 2 states. If we have a machine  $M$  that accepts  $L_1 \cap L_2$ . Then, the total number of states in  $M$  is equal to \_\_\_\_\_.

Select the correct option

- |                                  |   |    |
|----------------------------------|---|----|
| <input type="radio"/>            | 2 | // |
| <input checked="" type="radio"/> | 4 | // |
| <input type="radio"/>            | 6 | // |
| <input type="radio"/>            | 8 | // |



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Question # 12 of 30 ( Start time: 01:12:00 AM, 30 December 2020 )

If  $L_1$  and  $L_2$  are regular languages,  $L_1 \cap (L_2 \cup L_1)$  will be

Select the correct option

- |                                  |                       |
|----------------------------------|-----------------------|
| <input checked="" type="radio"/> | regular               |
| <input type="radio"/>            | non regular           |
| <input type="radio"/>            | may be regular        |
| <input type="radio"/>            | none of the mentioned |

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Question # 13 of 30 ( Start time: 01:12:11 AM, 30 December 2020 )

In Mealy machine the output depends on \_\_\_\_\_

Select the correct option

- Only present state
- Present state and Present input
- Nothing
- Type of input

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Question # 14 of 30 ( Start time: 01:12:23 AM, 30 December 2020 )

Strings  $x,y,z$  belongs to  $\Sigma^*$  such that  $xz \in L$  but  $yz \notin L$  where  $L \subseteq \Sigma^*$  are:

Select the correct option

<input checked="" type="radio"/>	Distinguishable
<input type="radio"/>	Indistinguishable
<input type="radio"/>	Both distinguishable and indistinguishable
<input type="radio"/>	Undetermined

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Question # 15 of 30 ( Start time: 01:12:35 AM, 30 December 2020 )

Melay machine to increase the output string in magnitude by 1 is called:

Select the correct option

- |                                  |                       |
|----------------------------------|-----------------------|
| <input type="radio"/>            | Complementing machine |
| <input checked="" type="radio"/> | Incrementing machine  |
| <input type="radio"/>            | Decrementing machine  |
| <input type="radio"/>            | Converting machine    |

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## Question # 16 of 30 ( Start time: 01:12:48 AM, 30 December 2020 )

Suppose we have FA3 (which is equal to FA1 + FA2), then the final state of FA3 will be declared final if:

## Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | It corresponds to final states of both FA1 and FA2      |
| <input type="radio"/>            | It corresponds to final states of FA1 only              |
| <input type="radio"/>            | It corresponds to final states of FA2 only              |
| <input checked="" type="radio"/> | It corresponds to any of the final states in FA1 or FA2 |

Question # 17 of 30 ( Start time: 01:13:06 AM, 30 December 2020 )

Total

If we have a finite language and the number of states in the FA is  $n$  then the maximum number of letters in the each word of the language that will be accepted by the given FA will be:

Select the correct option

- |                                  |       |
|----------------------------------|-------|
| <input type="radio"/>            | 1     |
| <input type="radio"/>            | $n-1$ |
| <input checked="" type="radio"/> | $n+1$ |
| <input type="radio"/>            | $n$   |

Question # 18 of 30 ( Start time: 01:13:20 AM, 30 December 2020 )

Which of the following state is introduced while developing NFA for the closure of an FA?

Select the correct option

- |                                  |  |
|----------------------------------|--|
| <input type="radio"/>            | Simply an initial state                        |
| <input type="radio"/>            | Final state                                    |
| <input checked="" type="radio"/> | An initial state which should be final as well |
| <input type="radio"/>            | An initial state with loop for all letters     |

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Question # 19 of 30 ( Start time: 01:13:33 AM, 30 December

Length of EVEN-EVEN language is \_\_\_\_\_.

Select the correct option

<input checked="" type="radio"/>	Even
<input type="radio"/>	Odd
<input type="radio"/>	Sometimes even & sometimes odd
<input type="radio"/>	Such language doesn't exist

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Question # 20 of 30 ( Start time: 01:13:49 AM, 30 December 2020 )

If FA1 corresponds to  $(a+b)^*$  then FA1 must accept \_\_\_\_\_ string/strings.

Select the correct option

<input type="radio"/>	No
<input type="radio"/>	Odd length
<input type="radio"/>	Even length
<input checked="" type="radio"/>	Every

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Question # 21 of 30 ( Start time: 01:14:02 AM, 30 Decembe

In FA, initial state can be represented by:

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input checked="" type="radio"/> | drawing an arrow head before that state |
| <input type="radio"/>            | drawing a circle in that state          |
| <input type="radio"/>            | drawing '+' sign in the state           |
| <input type="radio"/>            | leaving the state empty                 |

Question # 22 of 30 ( Start time: 01:14:15 AM, 30 December 2020 )

Total Marks: 1

Which one of the following machine is represented as a pictorial representation with states and directed edges labeled by an input letter along with an output character?

Select the correct option

- |                                  |                                    |    |
|----------------------------------|------------------------------------|----|
| <input type="radio"/>            | Moore machine                      | // |
| <input checked="" type="radio"/> | Mealy machine                      | // |
| <input type="radio"/>            | Finite state machine               | // |
| <input type="radio"/>            | Deterministic finite state machine | // |

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Question # 23 of 30 ( Start time: 01:14:32 AM, 30 December 2020 )

The length of string "AbBAbcd" defined over  $\Sigma = \{A,b,B,c,d\}$  is \_\_\_\_\_.

Select the correct option

- |                                  |       |
|----------------------------------|-------|
| <input type="radio"/>            | three |
| <input type="radio"/>            | four  |
| <input checked="" type="radio"/> | five  |
| <input type="radio"/>            | six   |

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Question # 24 of 30 ( Start time: 01:14:44 AM, 30 December 2020 )

An FA is a collection of:

Select the correct option

- |                                  |  |
|----------------------------------|--|
| <input checked="" type="radio"/> | Finite states, finite transitions and finite input letters       |
| <input type="radio"/>            | Infinite states, infinite transitions and infinite input letters |
| <input type="radio"/>            | Only finite states and finite transitions                        |
| <input type="radio"/>            | Only infinite states and infinite transitions                    |

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Question # 25 of 30 ( Start time: 01:14:58 AM, 30 December 2020 )

Given the language  $L = \{ab, aa, baa\}$ , which of the following strings are in  $L^*$ ?

- 1) abaabaaabaa
- 2) aaaaabaaaa
- 3) baaaaabaaaab
- 4) baaaaabaa

Select the correct option

<input type="radio"/>	1, 2 and 3
<input type="radio"/>	2, 3 and 4
<input checked="" type="radio"/>	1, 2 and 4
<input type="radio"/>	1, 3 and 4

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Question # 26 of 30 ( Start time: 01:15:10 AM, 30 December 2020 )

Total Marks:

In the context of make NFA for the concatenation of FA1 and FA2 (FA1 accepting null string), which of the following option is correct?

Select the correct option

- |                                  |                               |    |
|----------------------------------|-------------------------------|----|
| <input type="radio"/>            | Initial states in both FAs    | // |
| <input type="radio"/>            | FA2 having initial state only | // |
| <input type="radio"/>            | FA2 having final state only   | // |
| <input checked="" type="radio"/> | Final states in both FAs      | // |

Question # 27 of 30 ( Start time: 01:15:26 AM, 30 December 2020 )

Every \_\_\_\_\_ is a \_\_\_\_\_ as well, but the converse may not be true.

Select the correct option

- |                                  |         |
|----------------------------------|---------|
| <input type="radio"/>            | TG, FA  |
| <input checked="" type="radio"/> | FA, TG  |
| <input type="radio"/>            | TG, GTG |
| <input type="radio"/>            | FA,GTG  |

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Question # 28 of 30 ( Start time: 01:15:39 AM, 30 December 2020

NFA with null string has ----- initial state(s).

Select the correct option

- |                                  |       |
|----------------------------------|-------|
| <input checked="" type="radio"/> | One   |
| <input type="radio"/>            | Two   |
| <input type="radio"/>            | Three |
| <input type="radio"/>            | Many  |

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Question # 29 of 30 ( Start time: 01:15:53 AM, 30 December 2020 )

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While finding RE corresponding to a TG, we connect the new start state with the old start state by \_\_\_\_\_ transition.

Select the correct option

- |                                  |      |
|----------------------------------|------|
| <input type="radio"/>            | a    |
| <input type="radio"/>            | b    |
| <input checked="" type="radio"/> | null |
| <input type="radio"/>            | RE   |

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Question # 30 of 30 ( Start time: 01:16:11 AM, 30 December 2020

If  $S = \{x\}$ , then  $S^*$  will be \_\_\_\_\_.

Select the correct option

- |                                  |  |
|----------------------------------|--|
| <input type="radio"/>            | $\{\hat{\ }x,xxx,xxxx,xxxxx,\dots\}$       |
| <input checked="" type="radio"/> | $\{\hat{\ }x,xx,xxx,xxxx,\dots\}$          |
| <input type="radio"/>            | $\{\hat{\ }x,xxx,xxxxx,xxxxxxx,\dots\}$    |
| <input type="radio"/>            | $\{\hat{\ }xx,xxx,xxxxxx,xxxxxxxx,\dots\}$ |

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