



Grand Quiz Spring 2021

Subject Code CS402 lecture 1 to 22

Solved by Riz Mughal

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I'm providing 100% correct quiz solution. You can visit my YouTube channel and get more information about all other subjects' quizzes and final year project (CS619).



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RIZ MUGHAL (SQA ENGINEER)



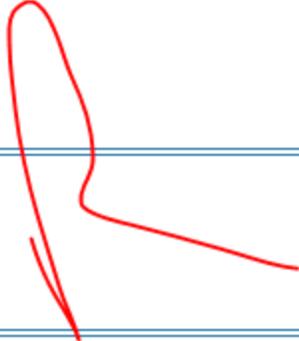
RIZ MUGHAL (SQA ENGINEER)



Question # 1 of 30 (Start time: 09:13:34 AM, 23 June 2021)

FA of EVEN language shows null string when _____.

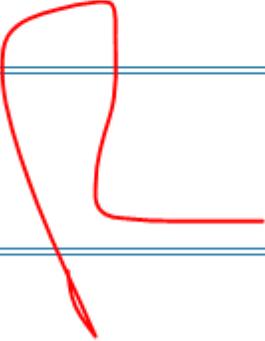
Select the correct option

- None of the these
 - EVEN does not accept null
 - Initial state is final as well
 - One state is declared null
- 

Question # 2 of 30 (Start time: 09:13:56 AM, 23 June 2021)

When even length language is expressed by an FA, then it will have minimum _____ states.

Select the correct option

- | | |
|----------------------------------|-------|
| <input type="radio"/> | four |
| <input checked="" type="radio"/> | two |
| <input type="radio"/> | one |
| <input type="radio"/> | three |
- 

Question # 3 of 30 (Start time: 09:14:11 AM, 23 June 2021)

Which of the following regular expressions represent same language?

1. $(a+ab)^*$
2. $(ba+a)^*$
3. $a^*(aa^*b)^*$
4. $(a^*b^*)^*$

Select the correct option

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



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Question # 4 of 30 (Start time: 09:14:27 AM, 23 June 2021)

FA stands for _____.

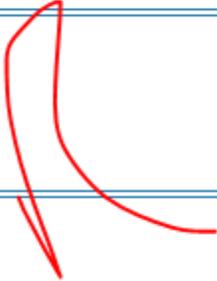
Select the correct option

- | | |
|----------------------------------|----------------------|
| <input checked="" type="radio"/> | Finite Automaton |
| <input type="radio"/> | Functional Automaton |
| <input type="radio"/> | False Automaton |
| <input type="radio"/> | Fixed Automaton |
- 

Question # 5 of 30 (Start time: 09:14:44 AM, 23 June 2021)

If an alphabet has "2" number of letters, then total number of strings of length "3" will be _____.

Select the correct option

- | | |
|----------------------------------|---|
| <input type="radio"/> | 9 |
| <input type="radio"/> | 6 |
| <input type="radio"/> | 5 |
| <input checked="" type="radio"/> | 8 |
- 

Question # 6 of 30 (Start time: 09:14:59 AM, 23 June 2021)

Which of the following is the bypass and state elimination step in the context of Kleene's theorem part II proof?

Select the correct option

- 2
 - 3
 - 4
 - 1
- 

Question # 7 of 30 (Start time: 09:15:15 AM, 23 June 2021)

Which of the following is free of non-determinism?

Select the correct option

<input type="radio"/>	NFA-^
<input type="radio"/>	NFA
<input type="radio"/>	TG
<input checked="" type="radio"/>	FA



Question # 8 of 30 (Start time: 09:15:30 AM, 23 June 2021)

Let FA3 be an FA corresponding to FA1FA2, then the initial state of FA3 must correspond to the initial state of

Select the correct option

- | | |
|----------------------------------|-------------|
| <input type="radio"/> | FA1 or FA2 |
| <input checked="" type="radio"/> | FA1 only |
| <input type="radio"/> | FA1 and FA2 |
| <input type="radio"/> | FA2 only |
- 

Question # 9 of 30 (Start time: 09:15:46 AM, 23 June 2021)

If we have only one state, having no transition for input letters, then it is an example of:

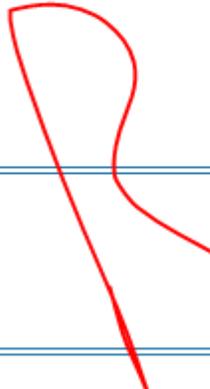
Select the correct option

- | | |
|----------------------------------|-----|
| <input type="radio"/> | TG |
| <input checked="" type="radio"/> | NFA |
| <input type="radio"/> | RE |
| <input type="radio"/> | FA |
- 

Question # 10 of 30 (Start time: 09:16:02 AM, 23 June 2021)

Let $S = \{a, bb, bab, baabb\}$ be a set of strings, which one of the following will not be included in S^* ?

Select the correct option

- | | |
|----------------------------------|------------|
| <input type="radio"/> | bbaaabb |
| <input type="radio"/> | baabbabb |
| <input checked="" type="radio"/> | bbbaabaabb |
| <input type="radio"/> | baba |
- 

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Question # 11 of 30 (Start time: 09:16:21 AM, 23 June 2021)

Consider the following RE:

$a(a + b)b^*$

All of the following words are accepted except _____.

Select the correct option

<input type="radio"/>	abb
<input type="radio"/>	aab
<input checked="" type="radio"/>	aba
<input type="radio"/>	aa

Question # 12 of 30 (Start time: 09:16:36 AM, 23 June 2021)

Consider we have languages L_7 and L_6 . Which of the following represents their concatenation?

Select the correct option

<input type="radio"/>	L_7/L_6
<input type="radio"/>	L_7+L_6
<input checked="" type="radio"/>	L_7L_6
<input type="radio"/>	$L_6^*L_7$

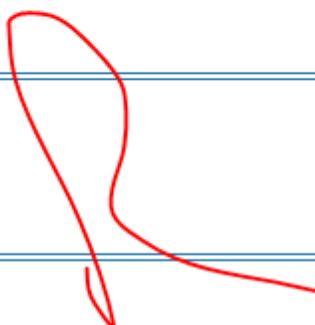


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Question # 13 of 30 (Start time: 09:16:52 AM, 23 June 2021)

----- state is not important in Moore machine.

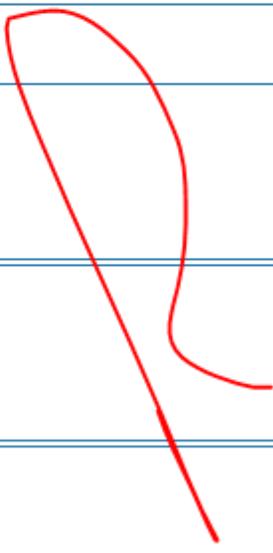
Select the correct option

- | | |
|----------------------------------|----------------|
| <input type="radio"/> | Combination of |
| <input type="radio"/> | Empty |
| <input checked="" type="radio"/> | Initial |
| <input type="radio"/> | Final |
- 
- A red handwritten mark, resembling a stylized 'P' or a scribble, is located to the right of the radio button options.

Question # 14 of 30 (Start time: 09:17:06 AM, 23 June 2021)

All possible combinations of strings of a language including null string is referred as:

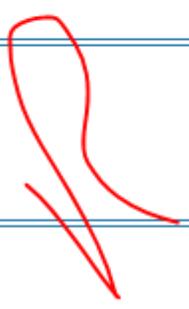
Select the correct option

- | | |
|----------------------------------|--|
| <input type="radio"/> | Multiplication of a language with itself |
| <input checked="" type="radio"/> | Kleene star closure of a language |
| <input type="radio"/> | Concatenation of a language with itself |
| <input type="radio"/> | Addition of a language with itself |
- 

Question # 15 of 30 (Start time: 09:17:22 AM, 23 June 2021)

A transition graph is converted into a(n) _____ in order to obtain regular expression.

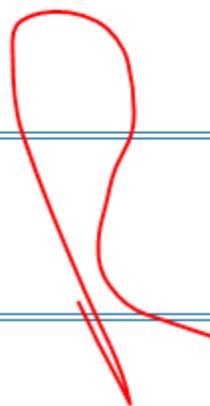
Select the correct option

- | | |
|----------------------------------|-------------------|
| <input checked="" type="radio"/> | GTG |
| <input type="radio"/> | NFA |
| <input type="radio"/> | NFA- [^] |
| <input type="radio"/> | FA |
- 

Question # 16 of 30 (Start time: 09:17:38 AM, 23 June 2021)

If an FA has 3 states and 2 letters in the alphabet set, then it will have total _____ number of transitions.

Select the correct option

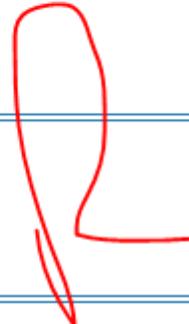
- | | |
|----------------------------------|---|
| <input type="radio"/> | 5 |
| <input type="radio"/> | 7 |
| <input checked="" type="radio"/> | 6 |
| <input type="radio"/> | 4 |
- 

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Question # 17 of 30 (Start time: 09:17:53 AM, 23 June 2021)

Formal is also known as _____.

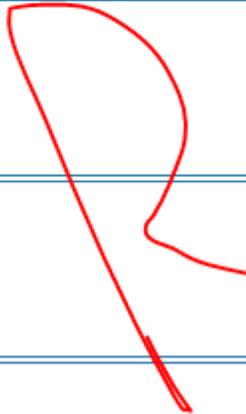
Select the correct option

- | | |
|----------------------------------|--------------------|
| <input type="radio"/> | Infomal language |
| <input type="radio"/> | None of these |
| <input type="radio"/> | Semantic language |
| <input checked="" type="radio"/> | Syntactic language |
- 

Question # 18 of 30 (Start time: 09:18:09 AM, 23 June 2021)

Suppose we have FA3 which is equal to the union of FA1 and FA2. Now the initial state of the FA3 will be equal to:

Select the correct option

- | | |
|----------------------------------|-----------------------------|
| <input type="radio"/> | Only initial state of FA2 |
| <input type="radio"/> | Only initial state of FA1 |
| <input checked="" type="radio"/> | Initial state of FA1 or FA2 |
| <input type="radio"/> | Final state of FA2 |
- 

CS402:Grand Quiz

Question # 19 of 30 (Start time: 09:18:37 AM, 23 June 2021)

GTG for the expression $(aa+aba)^*$ may have minimum number of states:

Select the correct option

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

CS402:Grand Quiz

Question # 20 of 30 (Start time: 09:18:54 AM, 23 June 2021)

Which of the following machine has only one initial state and no final state?

Select the correct option

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

Question # 21 of 30 (Start time: 09:19:09 AM, 23 June 2021)

Total Marks

In proving Kleene Theorem II, if three states are connected then middle state is removed by connecting first and third state and writing corresponding RE in:

Select the correct option

<input type="radio"/>	Asterisk
<input type="radio"/>	Difference
<input type="radio"/>	Sum
<input checked="" type="radio"/>	Concatenation



Question # 22 of 30 (Start time: 09:19:25 AM, 23 June 2021)

To

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

Select the correct option

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

CS402:Grand Quiz

Question # 23 of 30 (Start time: 09:19:43 AM, 23 June 2021)

Non-Determinism is present in:

Select the correct option

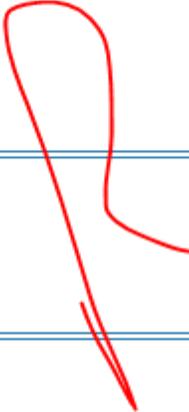
- | | |
|----------------------------------|-----------------|
| <input checked="" type="radio"/> | Both TG and GTG |
| <input type="radio"/> | GTG |
| <input type="radio"/> | TG |
| <input type="radio"/> | FA |
- 

CS402:Grand Quiz

Question # 24 of 30 (Start time: 09:20:01 AM, 23 June 2021)

Melay machine can have ----- final states.

Select the correct option

- | | |
|----------------------------------|----------------------------|
| <input type="radio"/> | One |
| <input type="radio"/> | More than one but finite |
| <input type="radio"/> | More than one but infinite |
| <input checked="" type="radio"/> | Zero |
- 

Question # 25 of 30 (Start time: 09:20:17 AM, 23 June 2021)

FA corresponding to an NFA can be built by introducing an empty state for a letter having

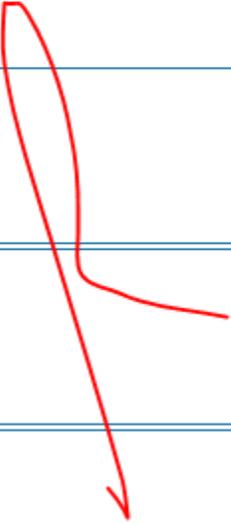
Select the correct option

- | | |
|----------------------------------|--|
| <input checked="" type="radio"/> | no transition at certain state |
| <input type="radio"/> | more than two transitions at certain state |
| <input type="radio"/> | one transition at certain state |
| <input type="radio"/> | two transitions at certain state |
- 

Question # 26 of 30 (Start time: 09:20:32 AM, 23 June 2021)

If $r1$ is a regular expression then $(r1)^*$ is _____.

Select the correct option

- | | |
|----------------------------------|--------------------------------------|
| <input type="radio"/> | a finite automaton |
| <input type="radio"/> | a non-deterministic finite automaton |
| <input checked="" type="radio"/> | also a regular expression |
| <input type="radio"/> | a generalized transition graph |
- 

Question # 27 of 30 (Start time: 09:20:47 AM, 23 June 2021)

Which one of the following word is not accepted by the given regular expression?
 $(a+b)^*(aaa+bbb)(a+b)^*$

Select the correct option

<input checked="" type="radio"/>	baabaabba
<input type="radio"/>	abbaaabba
<input type="radio"/>	bababbbba
<input type="radio"/>	ababaaaab



Question # 28 of 30 (Start time: 09:21:01 AM, 23 June 2021)

If $S = \{a, b\}$ then which of the following RE will generate all possible strings?

Select the correct option

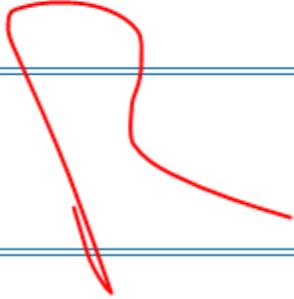
- | | |
|----------------------------------|---------------|
| <input type="radio"/> | $(ab)^*$ |
| <input type="radio"/> | $a^* + b^*$ |
| <input checked="" type="radio"/> | $(a + b)^*$ |
| <input type="radio"/> | $(ab + ba)^*$ |
- 

Question # 29 of 30 (Start time: 09:21:20 AM, 23 June 2021)

Every NFA can be considered to be a ----- as well, but the converse may not be true.

Select the correct option

<input type="radio"/>	GTG
<input type="radio"/>	FA
<input type="radio"/>	PDA
<input checked="" type="radio"/>	TG



Question # 30 of 30 (Start time: 09:21:37 AM, 23 June 2021)

If "r1" and "r2" are regular expressions, then which of the following is not a regular expression?

Select the correct option

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