

Question No : 1 of 26

Marks: 1 (Budgeted Time 1 Min)

If L_1 is expressed by r_1 , then the language expressed by r_1^* will be _____

Answer (Please select your correct option)

Regular

Ir-regular

Infinite

Such language does not exist

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Question No : 2 of 26

Marks: 1 (Budgeted Time 1 Min)

“One language can be expressed by _____ FA”.

Answer (Please select your correct option)

only one

any

more than one

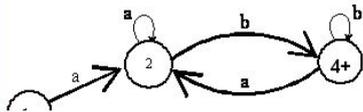
only two

Made By: Waqar Siddhu

Question No : 3 of 26

Marks: 1 (Budgeted Time 1 Min)

Below given FA can be expressed by the _____ RE.



Answer (Please select your correct option)

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

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

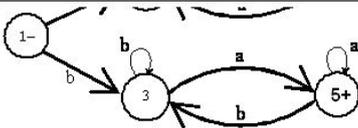
$a(a+b)^*b+b(a+b)^*a$

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

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Question No : 3 of 26

Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

$(a+b)+a(a+b)*a+b(a+b)*b$

$a(a+b)*a+b(a+b)*b$

$a(a+b)*b+b(a+b)*a$

$b(a+b)*a+a(a+b)*b$

Made By: Waqar Siddhu

Question No : 4 of 26

Marks: 1 (Budgeted Time 1 Min)

In TG there may exist _____ paths for certain string.

Answer (Please select your correct option)

only one

only two

only three

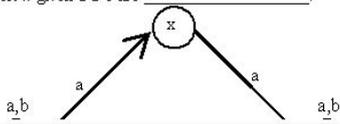
no

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Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)

Below given TG's are _____.



Answer (Please select your correct option)

Equivalent

Non-equivalent

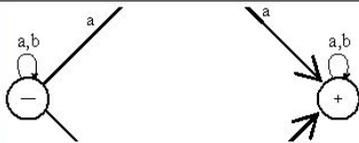
Not valid

There is no way to determine this condition

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Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

Equivalent

Non-equivalent

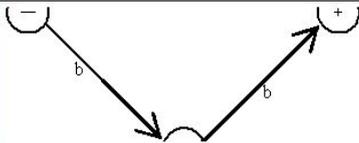
Not valid

There is no way to determine this condition

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Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)



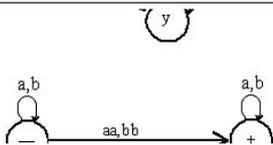
Answer (Please select your correct option)

- Equivalent
- Non-equivalent
- Not valid
- There is no way to determine this condition

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Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)



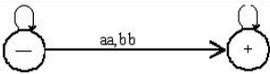
Answer (Please select your correct option)

- Equivalent
- Non-equivalent
- Not valid
- There is no way to determine this condition

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Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

- Equivalent
- Non-equivalent
- Not valid
- There is no way to determine this condition

Made By: Waqar Siddhu

Question No : 6 of 26

Marks: 1 (Budgeted Time 1 Min)

GTG can have _____ final state.

Answer (Please select your correct option)

0

1

More than 1

More than 2

Made By: Waqar Siddhu

Question No : 7 of 26

Marks: 1 (Budgeted Time 1 Min)

If r_1 and r_2 are regular expressions then r_1+r_2 is a _____.

Answer (Please select your correct option)

RE

FA

TG

GTG

Made By: Waqar Siddhu

Question No : 8 of 26

Marks: 1 (Budgeted Time 1 Min)

Alphabet $\Sigma = \{a, bc, cc\}$ has number of letters equal to _____.

Answer (Please select your correct option)

One

Two

Three

Four

Made By: Waqar Siddhu

Question No : 9 of 26

Marks: 1 (Budgeted Time 1 Min)

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

Answer (Please select your correct option)

GTG

NFA

FA

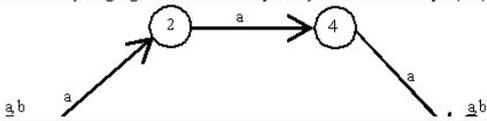
RE

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Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)

Show that any language that can be accepted by a Transition Graph (TG) can also be accepted by another TG with an even number of states.



Answer (Please select your correct option)

bababa

ababab

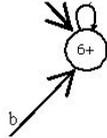
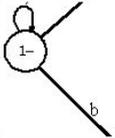
aaaab

bbaabb

Made By: Waqar Siddhu

Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

bababa

ababab

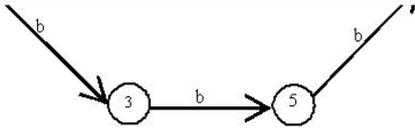
aaaab

bbaabb

Made By: Waqar Siddhu

Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

bababa

ababab

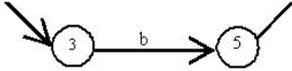
aaaab

bbaabb

Made By: Waqar Siddhu

Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)



Above given TG accepts the _____ string.

Answer (Please select your correct option)

bababa

ababab

aaaab

bbaabb

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Question No : 11 of 26

Marks: 1 (Budgeted Time 1 Min)

In _____ there must be transition for all letters.

Answer (Please select your correct option)

NFA

FA

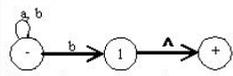
TG

GTG

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Question No : 12 of 26

Marks: 1 (Budgeted Time 1 Min)



Above given structure is a _____.

Answer (Please select your correct option)

FA

NFA

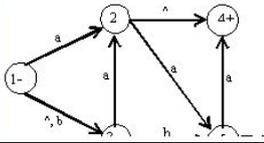
NFA - ^

RE

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Question No : 13 of 26

Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

FA

NFA

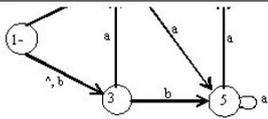
NFA - Λ

TG

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Question No : 13 of 26

Marks: 1 (Budgeted Time 1 Min)



Above given structure is a _____.

Answer (Please select your correct option)

FA

NFA

NFA - Λ

TG

Made By: Waqar Siddhu

Question No : 14 of 26

Marks: 1 (Budgeted Time 1 Min)

If we want to make a Moore machine equivalent to Mealy machine then _____

Answer (Please select your correct option)

We should ignore the extra character printed by the Moore machine.

We should ignore the extra character printed by the Mealy machine.

We will make the initial state as a no carry state.

We should not ignore the extra character printed by the Moore machine.

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Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

Choose the correct word produced by the RE (a*b*)ab:

Answer (Please select your correct option)

aaaa

bbbb

abab

Null

Made By: Waqar Siddhu

Question No : 16 of 26

Marks: 1 (Budgeted Time 1 Min)

The _____ machine helps in building a machine that can perform the addition of binary numbers.

Answer (Please select your correct option)

Incrementing

Complementing

Decrementing

Multiplication

Made By: Waqar Siddhu



- 1 $r_1^* r_2 r_3^*$
- 2 $(r_1 r_2 r_3)^*$
- 3 $r_1^* r_2^* r_3^*$
- 4 None of the given

Question No : 17 of 26

Marks: 1 (Budgeted Time 1 Min)



Considering Kleene's theorem, what RE should be in place of X in the 2nd GTG.

Answer (Please select your correct option)

$r1*r2.r3^*$

$(r1r2r3)^*$

$r1*r2^*r3^*$

None of the given

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Question No : 18 of 26

Marks: 1 (Budgeted Time 1 Min)

There are _____ steps in the recursive definition of languages.

Answer (Please select your correct option)

1

2

3

4

Made By: Waqar Siddhu

Question No : 19 of 26

Marks: 1 (Budgeted Time 1 Min)

Consider the following Regular Expression (RE): $a(a+b)^*b + b(a+b)a$.
All of the following words are accepted except _____.

Answer (Please select your correct option)

aab

abaab

bab

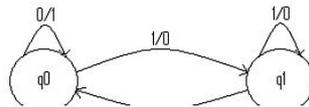
bba

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Question No : 20 of 26

Marks: 1 (Budgeted Time 1 Min)

Consider the following machine:



Answer (Please select your correct option)

1000110010

1000110010

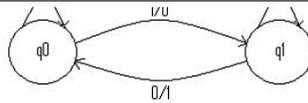
1000111010

0111000110

Made By: Waqar Siddhu

Question No : 20 of 26

Marks: 1 (Budgeted Time 1 Min)



Which of the following will be the output for input string "0111000101".

Answer (Please select your correct option)

1000110010

1000110010

1000111010

0111000110

Made By: Waqar Siddhu

Question No : 21 of 26

Marks: 2 (Budgeted Time 4 Min)

Read the following statements carefully. If the statement is true write true otherwise write false.

- a) Kleene's star and Kleene's closure are different
- b) Length of output string is one less than that of input string in mealy machine.

Answer ([Please click here to Add Answer](#))

Normal Arial 12 B I U

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Question No : 22 of 26

Marks: 2 (Budgeted Time 4 Min)

Let us consider incrementing mealy machine. What operations could be performed using the incrementing Mealy machine?

Answer ([Please click here to Add Answer](#))

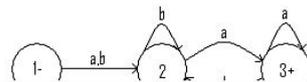
Normal Arial 12 B I U

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Question No : 24 of 26

Marks: 3 (Budgeted Time 6 Min)

Take closure of the given Finite Automaton (FA):



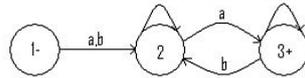
Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for undo, redo, bold, italic, underline, text color, background color, bulleted list, numbered list, link, unlink, and a 100% zoom level.

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Question No : 24 of 26

Marks: 3 (Budgeted Time 6 Min)



Answer ([Please click here to Add Answer](#))

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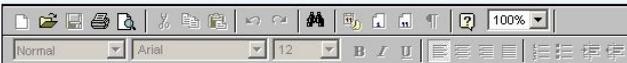
Question No : 25 of 26

Marks: 5 (Budgeted Time 10 Min)

Suppose a Maze of 20 boxes, 1 box for initial and 1 for the final state. There are 5 boxes for non-moveable states while the rest of boxes are used for transitions. Draw a Nondeterministic Finite Automaton (NFA) for the given Maze.

Marks [2.5+2.5]

Answer ([Please click here to Add Answer](#))

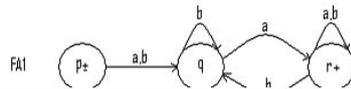


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Question No : 26 of 26

Marks: 5 (Budgeted Time 10 Min)

Concatenate the following two FA's:



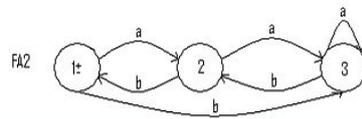
Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for undo, redo, bold, italic, underline, link, unlink, list, and table, along with a font size dropdown set to 12 and a zoom level dropdown set to 100%.

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Question No : 26 of 26

Marks: 5 (Budgeted Time 10 Min)



Answer ([Please click here to Add Answer](#))

Rich text editor toolbar with icons for undo, redo, bold, italic, underline, link, unlink, list, and table. The text area below is empty.

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Q.No=answer	page
1=a	10
2=c	14
3=no idea	
4=d	19
5=no idea	
6=more than 1	
7=a	9
8=c	moazz
9=d	9
10=c	repeat
11=NFA	45
12=b	43
13=c	42
14=a	repeat
15=c	idea
16=a	60
17=d	
18=c	7
19=bab	
20=noidea	