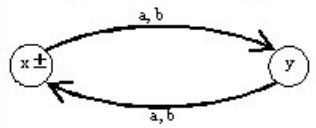


Question No : 2 of 52 Marks: 1 (Budgeted Time 1 Min)

Below given FA can be represented by



Answer (Please select your correct option)

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

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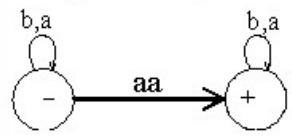


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Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given TG has _____ RE.



Answer (Please select your correct option)

- (b+a) (aa) (b+a)*
- (a+b) (aa) (a+b)*
- (a+b)* (aa) (a+b)*
- (a+b)* (aa) (a+b)

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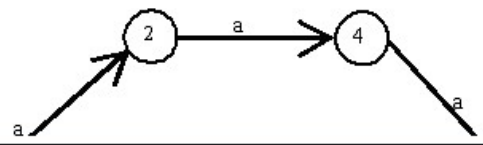
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Question No : 4 of 52 Marks: 1 (Budgeted Time 1 Min)

Below given TG's are _____.



Answer (Please select your correct option)

- non-symmetric
- Equivalent
- Non-equivalent
- TG's are not valid

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Question No : 5 of 52 **Marks: 1 (Budgeted Time 1 Min)**

"One GTG can generate _____ language".

Answer (Please select your correct option)

- more than one
- only one
- only two
- only three

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Question No : 6 of 52 Marks: 1 (Budgeted Time 1 Min)

Even-palindrome is a _____ language

Answer (Please select your correct option)

- non-regular
- regular
- regular but infinite
- regular but finite

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Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are two regular languages, then _____ is/are also regular.

Answer (Please select your correct option)

- Both $L_1 \cup L_2, L_1 \cap L_2$
- $L_1 \cap L_2$
- $L_1 \cup L_2$
- $L_1 \cap L_2$

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Question No : 8 of 52 **Marks: 1 (Budgeted Time 1 Min)**

If the FA has N states, then test the words of length less than N. If any one word is accepted by this FA, then it will accept ____ word.

Answer (Please select your correct option)

- All
- No
- One
- Two

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8



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Question No : 9 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are equivalent?

Answer (Please select your correct option)

- 1(001)* and (10)*10
- x(xx)* and (x)*x
- x⁺ and x*
- x⁺ and x*x⁺

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Question No : 10 of 52 Marks: 1 (Budgeted Time 1 Min)

An alphabet of Σ is valid if

Answer (Please select your correct option)

- No letter of Σ appears in middle of any other letter
- No letter of Σ appears at end of any other letter
- No letter of Σ appears at start of any other letter
- No letter of Σ appears at end or middle of any other letter

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Question No : 11 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are not equivalent?

Answer (Please select your correct option)

- $(ab)^*$ and a^*b^*
- $x(xx)^*$ and $(xx)^*x$
- x^+ and x^*x^+
- $x(x)^*$ and $(x)^*x$

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11



MADE BY WAQAR SIDDHU

Question No : 12 of 52 Marks: 1 (Budgeted Time 1 Min)

There exist _____ derivations of a certain word in ambiguous grammar.

Answer (Please select your correct option)

- more than one
- Exactly one
- exactly two
- no

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12



MADE BY WAQAR SIDDHU

Question No : 13 of 52 Marks: 1 (Budgeted Time 1 Min)

Regular languages are closed under _____

Answer (Please select your correct option)

- Union and Concatenation
- Union and Division
- Union and Exponent
- Union and Factorial

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13



MADE BY WAQAR SIDDHU

Question No : 14 of 52 Marks: 1 (Budgeted Time 1 Min)

Which one of the following statements is INCORRECT:

Answer (Please select your correct option)

- A language consisting of all strings over $\Sigma=(a,b)$ having equal number of a's and b's is a regular language
- Every language that can be expressed by FA can also be expressed by RE
- None of these
- $(a+b)^*aa(a+b)^*$ generates Regular language.

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14



MADE BY WAQAR SIDDHU

Question No : 15 of 52 Marks: 1 (Budgeted Time 1 Min)

TM is more powerful than FSM because

Answer (Please select your correct option)

- The tape movement is confined to one direction
- It has no finite state control
- It has the capability to remember arbitrary long sequences of input symbols
- The tape movement is confined to more than one directions

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MADE BY WAQAR SIDDHU

Question No : 16 of 52 Marks: 1 (Budgeted Time 1 Min)

CYK algorithm was invented by John Cocke and later was published by ____

Answer (Please select your correct option)

- Talik Khon and Daniel H
- Tandao Kasami and Daniel H
- Tandao Dagger and Daniel H
- Talik Khon

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Question No : 17 of 52 Marks: 1 (Budgeted Time 1 Min)

The process of finding the derivation of word generated by particular grammar is called _____

Answer (Please select your correct option)

- Processing
- Parsing
- Programming
- Planing

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Question No : 18 of 52 Marks: 1 (Budgeted Time 1 Min)

There are different parsing techniques, including _____

Answer (Please select your correct option)

- Top down parsing
- Bottom up parsing
- Parsing technique for particular grammar of arithmetic expression
- All of these

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18



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Question No : 19 of 52 Marks: 1 (Budgeted Time 1 Min)

$\Sigma = (a, Aa, Abb)$, then string $aAaAbbAa$ has length equal to _____.

Answer (Please select your correct option)

- Three
- Four
- One
- Two

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19



MADE BY WAQAR SIDDHU

Question No : 20 of 52 Marks: 1 (Budgeted Time 1 Min)

The language generated by CFG is called _____.

Answer (Please select your correct option)

- Infinite
- Context Free Language (CFL)
- Regular
- Finite

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Question No : 21 of 52 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 : 22 of 52 Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

- $r_1^* r_2 r_3^*$
- $(r_1 r_2 r_3)^*$
- $r_1^* r_2^* r_3^*$
- None of the given

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Question No : 23 of 52 Marks: 1 (Budgeted Time 1 Min)

A regular language _____ .

Answer (Please select your correct option)

- Must be finite
- Must be infinite
- Can be finite or infinite
- Complex Language

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Question No : 24 of 52 Marks: 1 (Budgeted Time 1 Min)

If a language can be expressed by a regular expression, then its complement is _____.

Answer (Please select your correct option)

- Regular
- Non Regular
- Finite
- Infinite

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MADE BY WAQAR SIDDHU

Question No : 25 of 52 Marks: 1 (Budgeted Time 1 Min)

For every Context Free Grammar (CFG), we can make the corresponding _____.

Answer (Please select your correct option)

- FA
- TG
- PDA
- Regular Grammar

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Question No : 26 of 52 Marks: 1 (Budgeted Time 1 Min)

Look at the following diagram and select the correct option:

```
graph LR; START([START]) --> POP{POP}; POP -- $ --> PUSH[PUSH $]; PUSH --> HERE{HERE}; HERE --> End[ ];
```

Answer (Please select your correct option)

- The PDA must not begin with the sequence
- The PDA may begin with the sequence
- The PDA must begin with the sequence
- The PDA may not begin with the sequence

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Question No : 27 of 52 **Marks: 1 (Budgeted Time 1 Min)**

Consider the following Context Free Grammar (CFG) and select the correct choice
 $S \rightarrow AB$
 $A \rightarrow BSB \mid a \mid b$
 $B \rightarrow CC$
 $C \rightarrow SS \mid b \mid bb$

Answer (Please select your correct option)

- abb is a word in the corresponding CFL.
- abb is not the word of corresponding CFL.
- Any word can be accepted from the corresponding CFL.
- b is a word in the corresponding CFL.

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Question No : 28 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following statement(s) is/are true or false?

- 1) The turing machine is similar to a finite automaton but with an unlimited and unrestricted memory.
- 2) A Turing machine is a much more accurate model of a general purpose computer.

Answer (Please select your correct option)

- Statement 1 is true
- Statement 2 is true
- Both statements (1 & 2) are false
- Statement 2 is false

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Question No : 29 of 52 Marks: 1 (Budgeted Time 1 Min)

Language of strings having even number of a's is considered to be:

Answer (Please select your correct option)

- Regular
- Irrelgular
- Irregular and infinite
- Irregular and finite

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29



MADE BY WAQAR SIDDHU

Question No : 30 of 52 Marks: 1 (Budgeted Time 1 Min)

If we have two transition graphs then their union will be expressed by:

Answer (Please select your correct option)

- taking a common start state and joining them by two null transitions
- just connecting both start states by null transitions
- connecting final state of first TG to the initial state of second TG
- connecting the final state of first TG to the final state of second TG

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Question No : 31 of 52 Marks: 1 (Budgeted Time 1 Min)

A language of strings of prime length is considered to be:

Answer (Please select your correct option)

- regular but infinite
- regular
- irregular
- regular but finite

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Question No : 32 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ and _____ are removed in order to make a CFG in Chomsky Normal Form (CNF).

Answer (Please select your correct option)

- Null, nullable productions
- Nullable, unit productions
- Null, unit productions
- Strings of length 0, null

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Question No : 33 of 52 Marks: 1 (Budgeted Time 1 Min)

The languages are supposed to be _____ in case of testing pumping lemma.

Answer (Please select your correct option)

- context free
- irregular
- both regular and irregular
- regular

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33



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Question No : 34 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following refers to an effectively solvable problem having answer in "Yes" or "No"?

Answer (Please select your correct option)

- Decision procedure
- Logical problem
- Analytical problem
- Binary procedure

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34



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Question No : 35 of 52 **Marks: 1 (Budgeted Time 1 Min)**

Consider the following Context Free Grammar (CFG):

S ----> SX|XY
X ----> ZZ
Y ----> 0
Z ----> 1

Answer (Please select your correct option)

- 110
- 11011
- 1101111
- 11101

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35



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Question No : 36 of 52 Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$$\begin{aligned} S &\rightarrow SX|XY \\ X &\rightarrow ZZ \\ Y &\rightarrow 1 \\ Z &\rightarrow 0 \end{aligned}$$

Answer (Please select your correct option)

- 001
- 00010
- 0010000
- 00100

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36



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Question No : 37 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following is a regular Context Free Grammar:

Answer (Please select your correct option)

- $S \rightarrow abS \mid baS \mid \wedge$
- $S \rightarrow aSb \mid baS \mid \wedge$
- $S \rightarrow abS \mid bSa \mid \wedge$
- $S \rightarrow aSb \mid Sa \mid \wedge$

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Question No : 38 of 52 Marks: 1 (Budgeted Time 1 Min)

Concatenation of r1 and r2 will be shown as:

Answer (Please select your correct option)

- r1+r2
- r2+r1
- r2r1
- r1r2

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Question No : 39 of 52 Marks: 1 (Budgeted Time 1 Min)

A nonterminal is said to be self-embedded, if in a given derivation of a word, it ever occurs as a tree _____ of itself.

Answer (Please select your correct option)

- ascendant
- descendant
- top
- bottom

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39



MADE BY WAQAR SIDDHU

Question No : 40 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ is always Deterministic.

Answer (Please select your correct option)

- Finite Automaton
- Transition Graph
- Generalize Transition Graph
- Non-deterministic finite automaton

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Question No : 41 of 52 Marks: 2 (Budgeted Time 4 Min)

Write alternative form of this production.
 $S \rightarrow aS, S \rightarrow bS, S \rightarrow \Lambda$

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

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Question No : 42 of 52 Marks: 2 (Budgeted Time 4 Min)

What are the uses of Push Down Automata (PDA) in computing?

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

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Question No : 43 of 52 Marks: 2 (Budgeted Time 4 Min)

What is meant by Row language?

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

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Question No : 44 of 52 Marks: 2 (Budgeted Time 4 Min)

Write down regular expression for a language L of strings defined over $\Sigma = \{a, b\}$ that neither ends in "a" nor with "b".

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

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Question No : 45 of 52 Marks: 3 (Budgeted Time 6 Min)

What are the steps of Recursive Definition of Languages?

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

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Question No : 46 of 52 Marks: 3 (Budgeted Time 6 Min)

What does the following arbitrary summary table show?

FROM Where	TO Where	READ What	POP What	PUSH What	ROW Number
READ ₀	READ ₃	b	b	abb	11

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

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Question No : 47 of 52 Marks: 3 (Budgeted Time 6 Min)

Write down Context Free Grammar (CFG) for the language of strings expressed by the following regular expression:
 $(a + b)^*(a + b)^+$

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

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Question No : 48 of 52 Marks: 3 (Budgeted Time 6 Min)

Let us consider the following Finite Automaton (FA):

```
graph LR; S((1-)) -- b --> S; S -- a --> 2((2)); 2 -- b --> S; 2 -- a --> 3+((3+)); 3+ -- "a,b" --> 3+; style S stroke-width:2px; style 3+ stroke-width:2px;
```

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

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Question No : 49 of 52 Marks: 5 (Budgeted Time 10 Min)

Write the CFG for EVEN-EVEN language?

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

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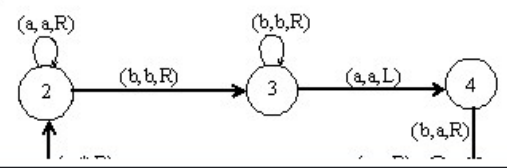
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Question No : 50 of 52 Marks: 5 (Budgeted Time 10 Min)

Consider the following TM



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

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Question No : 51 of 52 Marks: 5 (Budgeted Time 10 Min)

Using suitable examples, differentiate between Kleene star closure and plus operation?

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

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Question No : 52 of 52 Marks: 5 (Budgeted Time 10 Min)

- a. Construct Context Free Grammar (CFG) for the language defined by the regular expression:
 $(ab + ba)^*(a + b)^*$
- b. Remove null productions from the CFG constructed in part i.

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

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Question No : 1 of 52 **Marks: 1 (Budgeted Time 1 Min)**

Which statement is true?

Answer (Please select your correct option)

- All words are strings
- All strings are words
- Both are always same
- All letter are string

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Question No : 2 of 52 Marks: 1 (Budgeted Time 1 Min)

If L1 and L2 are expressed by r1 and r2, respectively then the language expressed by $(r1)(r2)$ will be _____

Answer (Please select your correct option)

- Regular
- Ir-regular
- Undermined
- Such language does not exist

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Question No : 3 of 52 Marks: 1 (Budgeted Time 1 Min)

Below given FA generates the language having strings of _____

```
graph LR; Start(( )) --> 1-((1-)); 1- -- "a,b" --> 2+(((2+))); 2+ -- "a,b" --> 1-;
```

Answer (Please select your correct option)

- ODD length
- EVEN length
- Equal number of a's and b's
- Odd number of a's and b's

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Question No : 4 of 52 Marks: 1 (Budgeted Time 1 Min)

If an FA accepts no string, then language is denoted by _____

Answer (Please select your correct option)

- $\{\}$
- \emptyset
- Both $\{\}$ and \emptyset
- Null

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Question No : 5 of 52 **Marks: 1 (Budgeted Time 1 Min)**

Using tree structure, initial state can be represented by_____

Answer (Please select your correct option)

- An arrow
- +
-
- *

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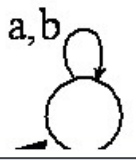
5 [Progress Bar] [Info] [Back] [Next] [Print]

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Question No : 6 of 52 Marks: 1 (Budgeted Time 1 Min)

Below given FA accepts _____ language.

a, b



Answer (Please select your correct option)

- Finite
- Infinite
- No
- All

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Question No : 7 of 52 Marks: 1 (Budgeted Time 1 Min)

Even-palindrome is a _____ language

Answer (Please select your correct option)

- non-regular
- regular
- regular but infinite
- regular but finite

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Question No : 8 of 52 Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are two regular languages, then _____ is/are also regular.

Answer (Please select your correct option)

- Both $L_1 \cup L_2, L_1 \cap L_2$
- $L_1 \cap L_2$
- $L_1 \cup L_2$
- $L_1 \cap L_2$

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Question No : 9 of 52 Marks: 1 (Budgeted Time 1 Min)

Consider the language L of strings, defined over $\Sigma = \{a,b\}$, ending in a

Answer (Please select your correct option)

- There are finite many classes generated by L, so L is regular
- There are infinite many classes generated by L, so L is regular
- There are finite many classes generated by L, so L is non-regular
- There are infinite many classes generated by L, so L is non-regular

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Question No : 10 of 52 Marks: 1 (Budgeted Time 1 Min)

Pumping lemma is generally used to prove that:

Answer (Please select your correct option)

- A given language is infinite
- A given language is not regular
- Whether two given regular expressions of a regular language are equivalent or not
- A given language is finite

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Question No : 11 of 52 **Marks: 1 (Budgeted Time 1 Min)**

If the FA has N states, then test the words of length less than N. If any one word is accepted by this FA, then it will accept ____ word.

Answer (Please select your correct option)

- All
- No
- One
- Two

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11



MADE BY WAQAR SIDDHU

Question No : 12 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are equivalent?

Answer (Please select your correct option)

- 1(001)* and (10)*10
- x(xx)* and (x)*x
- x+ and x*
- x+ and x*x+

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MADE BY WAQAR SIDDHU

Question No : 13 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are not equivalent?

Answer (Please select your correct option)

- $(ab)^*$ and a^*b^*
- $x(xx)^*$ and $(xx)^*x$
- x^+ and x^*x^+
- $x(x)^*$ and $(x)^*x$

Start Time: 3:52 AM
120:00
Time Left

13



MADE BY WAQAR SIDDHU

Question No : 14 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following statement is correct?

Answer (Please select your correct option)

- The length of output string is greater than length of input string in moore machine.
- The length of output string is greater than length of input string in mealy machine.
- The length of output string is equal to length of input string in moore machine.
- The length of output string is less than length of input string in mealy machine.

Start Time: 3:52 AM
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Time Left

14



MADE BY WAQAR SIDDHU

Question No : 15 of 52 **Marks: 1 (Budgeted Time 1 Min)**

There exist _____ derivations of a certain word in ambiguous grammar.

Answer (Please select your correct option)

- more than one
- Exactly one
- exactly two
- no

Start Time: 3:52 AM
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Time Left

15



MADE BY WAQAR SIDDHU

Question No : 16 of 52 Marks: 1 (Budgeted Time 1 Min)

Which one of the following statements is INCORRECT:

Answer (Please select your correct option)

- $(a+b)^*aa(a+b)^*$ generates Regular language.
- A language consisting of all strings over $\Sigma=(a,b)$ having equal number of a's and b's is a regular language
- Every language that can be expressed by FA can also be expressed by RE
- None of these

Start Time: 3:52 AM
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16



MADE BY WAQAR SIDDHU

Question No : 17 of 52 **Marks: 1 (Budgeted Time 1 Min)**

We can also represent an FA using different states e.g. Accept state, Reject state, Read State etc.
The _____ state behaves as final state of an FA.

Answer (Please select your correct option)

- Accept
- Pop
- Push
- Reject

Start Time: 3:52 AM
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Time Left



Question No : 18 of 52 Marks: 1 (Budgeted Time 1 Min)

CYK algorithm was invented by John Cocke and later was published by ____

Answer (Please select your correct option)

- Talik Khon and Daniel H
- Tandao Kasami and Daniel H
- Tandao Dagger and Daniel H
- Talik Khon

Start Time: 3:52 AM
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Time Left

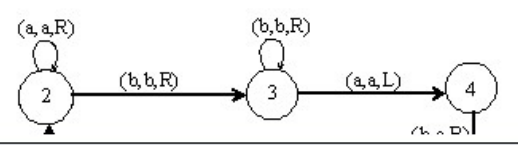
18



MADE BY WAQAR SIDDHU

Question No : 19 of 52 Marks: 1 (Budgeted Time 1 Min)

Consider the following TM



Answer (Please select your correct option)

- Above TM accepts the non-CFL { a b c }.
- Above TM accepts the non-CFL { a^n b^n a^n }.
- Above TM accepts the non-CFL { a^n b^n + 2a^n }.
- Above TM accepts the non-CFL { a^n + 2b^n a^n }.

Start Time: 3:52 AM
120:00
Time Left

Question No : 20 of 52 Marks: 1 (Budgeted Time 1 Min)

$\Sigma = \{a,b\}$ then string abbabb has length equal to _____.

Answer (Please select your correct option)

- Three
- Four
- Five
- Six

Start Time: 3:52 AM
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Time Left

20



MADE BY WAQAR SIDDHU

Question No : 21 of 52 Marks: 1 (Budgeted Time 1 Min)

The language generated by CFG is called _____.

Answer (Please select your correct option)

- Infinite
- Context Free Language (CFL)
- Regular
- Finite

Start Time: 3:52 AM
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Time Left

21



MADE BY WAQAR SIDDHU

Question No : 22 of 52 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
- TG
- FA
- GTG

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22



MADE BY WAQAR SIDDHU

Question No : 23 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following is RE for a language defined over $\Sigma=\{a,b\}$ having words starting with a:

Answer (Please select your correct option)

- (a + b)*
- aa(a + b)+
- a(a + b)*
- a*(a + b)

Start Time: 3:52 AM
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Time Left

23



MADE BY WAQAR SIDDHU

Question No : 24 of 52 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

Start Time: 3:52 AM
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Time Left

24



MADE BY WAQAR SIDDHU

Question No : 25 of 52 Marks: 1 (Budgeted Time 1 Min)

Left hand side of a production in Context free grammar (CFG) consists of _____.

Answer (Please select your correct option)

- One terminal
- More than one terminal
- One non-terminal
- Terminals and non-terminals

Start Time: 3:52 AM
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Time Left

25



MADE BY WAQAR SIDDHU

Question No : 26 of 52 Marks: 1 (Budgeted Time 1 Min)

A regular language _____ .

Answer (Please select your correct option)

- Must be finite
- Must be infinite
- Can be finite or infinite
- Complex Language

Start Time: 3:52 AM
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Time Left

26



MADE BY WAQAR SIDDHU

Question No : 27 of 52 Marks: 1 (Budgeted Time 1 Min)

If a language can be expressed by a regular expression, then its complement is _____.

Answer (Please select your correct option)

- Regular
- Non Regular
- Finite
- Infinite

Start Time: 3:52 AM
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Time Left

27



MADE BY WAQAR SIDDHU

Question No : 28 of 52 Marks: 1 (Budgeted Time 1 Min)

If a given Context Free grammar (CFG) contains a production of the form $S \rightarrow \Lambda$, then _____

Answer (Please select your correct option)

- The corresponding CFL is not empty.
- The corresponding CFL is empty.
- The corresponding CFL is not empty if the language is regular
- The corresponding CFL is empty and non regular.

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28



MADE BY WAQAR SIDDHU

Question No : 29 of 52 Marks: 1 (Budgeted Time 1 Min)

Can a turing machine's head ever be in the same location in two successive steps?

Answer (Please select your correct option)

- Yes
- Yes but only in finite languages
- No
- Yes but only in infinite langauges

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29



MADE BY WAQAR SIDDHU

Question No : 30 of 52 Marks: 1 (Budgeted Time 1 Min)

In _____ there are Finite set of states containing exactly one START state and some (may be none) HALT states that cause execution to terminate, when the HALT states are entered.

Answer (Please select your correct option)

- TG
- Turing Machine
- GTG
- Finite Automata

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30



MADE BY WAQAR SIDDHU

Question No : 31 of 52 **Marks: 1 (Budgeted Time 1 Min)**

Which of the following statement(s) is/are true or false?

- 1) The turing machine is similar to a finite automaton but with an unlimited and unrestricted memory.
- 2) A Turing machine is a much more accurate model of a general purpose computer.

Answer (Please select your correct option)

- Statement 1 is true
- Statement 2 is true
- Both statements (1 & 2) are false
- Statement 2 is false

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31



MADE BY WAQAR SIDDHU

Question No : 32 of 52 Marks: 1 (Budgeted Time 1 Min)

We can have more than one parse trees for a given string in case of _____ Context Free Grammar (CFG).

Answer (Please select your correct option)

- vague
- ambiguous
- hazy
- simple

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32



MADE BY WAQAR SIDDHU

Question No : 33 of 52 Marks: 1 (Budgeted Time 1 Min)

The language of a^*b^* can be expressed by:

Answer (Please select your correct option)

- FA
- TG
- GTG
- PDA

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33



MADE BY WAQAR SIDDHU

Question No : 34 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following theorem partitions Σ^* into distinct classes?

Answer (Please select your correct option)

- Decidability theorem
- Myhill Nerode theorem
- Kleen's theorem
- Emptiness theorem

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34



MADE BY WAQAR SIDDHU

Question No : 35 of 52 Marks: 1 (Budgeted Time 1 Min)

The languages are supposed to be _____ in case of testing pumping lemma.

Answer (Please select your correct option)

- context free
- irregular
- both regular and irregular
- regular

Start Time: 3:52 AM
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35



MADE BY WAQAR SIDDHU

Question No : 36 of 52 Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$
 $X \rightarrow ZZ$
 $Y \rightarrow 1$
 $Z \rightarrow 0$

Answer (Please select your correct option)

- 00100
- 0010000
- 001
- 00010

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36



MADE BY WAQAR SIDDHU

Question No : 37 of 52 Marks: 1 (Budgeted Time 1 Min)

A read state can have _____ outgoing edge/ edges.

Answer (Please select your correct option)

- 1
- 2
- 3
- Any number of

Start Time: 3:52 AM
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37



MADE BY WAQAR SIDDHU

Question No : 38 of 52 Marks: 1 (Budgeted Time 1 Min)

Which of the following states do not have outgoing edges:

Answer (Please select your correct option)

- Start
- Read
- Pop
- Accept

Start Time: 3:52 AM
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38



MADE BY WAQAR SIDDHU

Question No : 39 of 52 Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):
S---->01A
A---->10B
B---->0A|11

Answer (Please select your correct option)

- 011011
- 011011011
- 011001011
- 011001001011

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39



MADE BY WAQAR SIDDHU

Question No : 40 of 52 Marks: 1 (Budgeted Time 1 Min)

Let us consider the following Turing machine (T_M):

(y, Y, R)	(f, f, L)
(f, f, R)	(v, v, L)

Answer (Please select your correct option)

- fffgggg
- fffgggff
- fffggg
- fffggg

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40



MADE BY WAQAR SIDDHU

Question No : 41 of 52 Marks: 2 (Budgeted Time 4 Min)

What is meant by "Left most Derivation" in context of CFG?

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

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41



MADE BY WAQAR SIDDHU

Question No : 43 of 52 Marks: 2 (Budgeted Time 4 Min)

Consider the language defined by the following regular expression:
 $b(a + b)^+a$
What will be the corresponding Context Free Grammar (CFG)?

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

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Question No : 44 of 52 Marks: 2 (Budgeted Time 4 Min)

Consider live productions to be applied during derivation of a word. In your point of view what will be the ultimate result?

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

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Time Left

44



MADE BY WAQAR SIDDHU

Question No : 45 of 52 Marks: 3 (Budgeted Time 6 Min)

What is meant by the following statement ?
"LANGUAGE IS CLOSED"

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

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Navigation icons: Information, Previous, Home, Next, Print

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Question No : 46 of 52 Marks: 3 (Budgeted Time 6 Min)

Write three different parsing techniques.

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

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46



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Question No : 47 of 52 Marks: 3 (Budgeted Time 6 Min)

Illustrate Decidable Problem with the help of an example.
Marks [1+2]

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

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Time Left

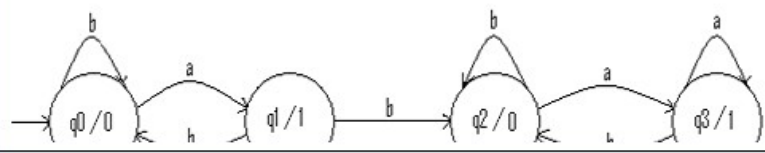
47



MADE BY WAQAR SIDDHU

Question No : 48 of 52 Marks: 3 (Budgeted Time 6 Min)

Consider the following Moore machine:



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

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48



MADE BY WAQAR SIDDHU

Question No : 49 of 52 Marks: 5 (Budgeted Time 10 Min)

Consider the language L which is EVEN-EVEN, defined over $\Sigma = \{a,b\}$. In how many classes does L may partition Σ^* . Explain briefly.

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

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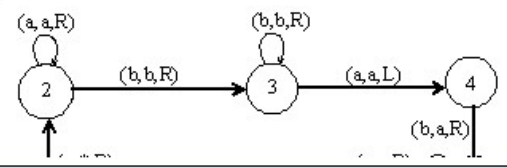
Start Time: 3:52 AM
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Navigation controls including a question number '49', a progress slider, and buttons for Home, Previous, Next, and Last.

MADE BY WAQAR SIDDHU

Question No : 50 of 52 Marks: 5 (Budgeted Time 10 Min)

Consider the following TM



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

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Time Left

50 i ⏪ ⏩ ⏴ ⏵

MADE BY WAQAR SIDDHU

Question No : 51 of 52 Marks: 5 (Budgeted Time 10 Min)

Derive Chomsky Normal Form (CNF) corresponding to the Context Free Grammar (CFG) given below:
 $A \rightarrow BAB \mid B \mid \Lambda$
 $B \rightarrow 00 \mid \Lambda$

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

Rich text editor toolbar with icons for Bold, Italic, Underline, Bulleted List, Numbered List, Indent, Outdent, Undo, Redo, and a 100% zoom level. The text area below is empty.

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Question No : 52 of 52 Marks: 5 (Budgeted Time 10 Min)

Suppose a Maze of 20 boxes; 1 box for initial and 1 for final state. 6 boxes are for non-moveable states while the rest can be 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)



A rich text editor toolbar with various icons for text formatting and editing. The toolbar includes icons for bold, italic, underline, strikethrough, text color, background color, bulleted list, numbered list, link, unlink, indent, outdent, and a search icon. The font is set to Arial and the size is 12. The zoom level is 100%.

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52



MADE BY WAQAR SIDDHU

Question No : 1 of 52

Marks: 1 (Budgeted Time 1 Min)

Which statement is true?

Answer (Please select your correct option)

VuAnswers.com

All words are strings

Lec 1,page:4

All strings are words

Both are always same

All letter are string

Made by: Waqar Siddhu

Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are expressed by r_1 and r_2 , respectively then the language expressed by $(r_1)(r_2)$ will be _____

Answer (Please select your correct option)

VuAnswers.com

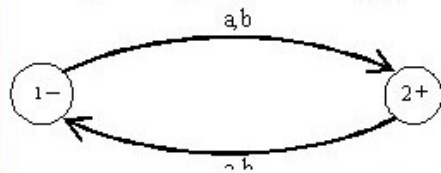
- Regular
Lec:4,page:10
- Ir-regular
- Undermined
- Such language does not exist

Made by: Waqar Siddhu

Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given FA generates the language having strings of _____



Answer (Please select your correct option)

VuAnswers.com

ODD length conceptual $RE=(a+b)((a+b)(a+b))^*$

EVEN length

Equal number of a's and b's

Odd number of a's and b's

Made by: Waqar Siddhu

Question No : 4 of 52

Marks: 1 (Budgeted Time 1 Min)

If an FA accepts no string, then language is denoted by _____

Answer (Please select your correct option)

VuAnswers.com

{}

\emptyset

Both {} and \emptyset

Lec:6,page:16

Null

Made by: Waqar Siddhu

Question No : 5 of 52

Marks: 1 (Budgeted Time 1 Min)

Using tree structure, initial state can be represented by_____

Answer (Please select your correct option)

VuAnswers.com

An arrow for J.C.Martin tree structure lec:7,page:18

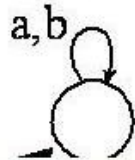
+

- for simple tree structure lec:7,page:17

*

Made by: Waqar Siddhu

Below given FA accepts _____ language.



Answer (Please select your correct option)

VuAnswers.com

Finite

page 17

Infinite

No

All

Made by: Waqar Siddhu

Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

Even-palindrome is a _____ language

Answer (Please select your correct option)

VuAnswers.com

non-regular conceptual page 70

regular

regular but infinite

regular but finite

Made by: Waqar Siddhu

Question No : 8 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are two regular languages, then _____ is/are also regular.

Answer (Please select your correct option)

VuAnswers.com

Both $L_1 \cup L_2, L_1 \cap L_2$ concept

$L_1 \cap L_2$

$L_1 \cup L_2$

$L_1 \cap L_2$

Made by: Waqar Siddhu

Question No : 9 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the language L of strings, defined over $\Sigma = \{a,b\}$, ending in a

Answer (Please select your correct option)

VuAnswers.com

- There are finite many classes generated by L, so L is regular
- There are infinite many classes generated by L, so L is regular
- There are finite many classes generated by L, so L is non-regular
- There are infinite many classes generated by L, so L is non-regular

Lec:27,page:76

Made by: Waqar Siddhu

Question No : 10 of 52

Marks: 1 (Budgeted Time 1 Min)

Pumping lemma is generally used to prove that:

Answer (Please select your correct option)

VuAnswers.com

- A given language is infinite
- A given language is not regular
- Whether two given regular expressions of a regular language are equivalent or not
- A given language is finite

Conceptual

Made by: Waqar Siddhu

Question No : 11 of 52

Marks: 1 (Budgeted Time 1 Min)

If the FA has N states, then test the words of length less than N. If any one word is accepted by this FA, then it will accept ____ word.

Answer (Please select your correct option)

VuAnswers.com

All **Lecture:30,page:85** concept

No

One

Two

Made by: Waqar Siddhu

Question No : 12 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are equivalent?

Answer (Please select your correct option)

VuAnswers.com

1(001)* and (10)*10

x(xxx)* and (x)*x

concept

x⁺ and x*

x⁺ and x*x⁺

Made by: Waqar Siddhu

Question No : 13 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are not equivalent?

Answer (Please select your correct option)

VuAnswers.com

(ab)* and a*b*

x(xxx)* and (xxx)*x

x⁺ and x*x⁺

concept

x(x)* and (x)*x

Made by: Waqar Siddhu

Question No : 14 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following statement is correct?

Answer (Please select your correct option)

VuAnswers.com

- The length of output string is greater than length of input string in moore machine.
- The length of output string is greater than length of input string in mealy machine.
- The length of output string is equal to length of input string in moore machine.
- The length of output string is less than length of input string in mealy machine.

Made by: Waqar Siddhu

Question No : 15 of 52

Marks: 1 (Budgeted Time 1 Min)

There exist _____ derivations of a certain word in ambiguous grammar.

Answer (Please select your correct option)

VuAnswers.com

more than one

Exactly one

exactly two

no

Made by: Waqar Siddhu

Question No : 16 of 52

Marks: 1 (Budgeted Time 1 Min)

Which one of the following statements is INCORRECT:

Answer (Please select your correct option)

VuAnswers.com

- $(a+b)^*aa(a+b)^*$ generates Regular language.
- A language consisting of all strings over $\Sigma=\{a,b\}$ having equal number of a's and b's is a regular language
- Every language that can be expressed by FA can also be expressed by RE
- None of these

Lec:26,page:73

Made by: Waqar Siddhu

Question No : 17 of 52

Marks: 1 (Budgeted Time 1 Min)

We can also represent an FA using different states e.g. Accept state, Reject state, Read State etc.
The _____ state behaves as final state of an FA.

Answer (Please select your correct option)

VuAnswers.com

Accept **Lec:37,page:105**

Pop

Push

Reject

Made by: Waqar Siddhu

Question No : 18 of 52

Marks: 1 (Budgeted Time 1 Min)

CYK algorithm was invented by John Cocke and later was published by ____

Answer (Please select your correct option)

VuAnswers.com

Talik Khon and Daniel H



Tandao Kasami and Daniel H

Lec:44,page:135



Tandao Dagger and Daniel H

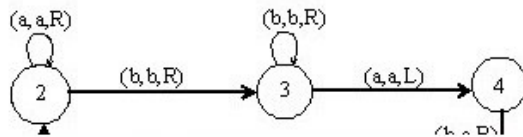


Talik Khon



Made by: Waqar Siddhu

Consider the following TM



Answer (Please select your correct option)

VuAnswers.com

Above TM accepts the non-CFL $\{ a b c \}$.

Above TM accepts the non-CFL $\{ a^n b^n a^n \}$.

Lec:45,page:142

Above TM accepts the non-CFL $\{ a^n b^{n+2} a^n \}$.

Above TM accepts the non-CFL $\{ a^{n+2} b^n a^n \}$.

Made by: Waqar Siddhu

Question No : 20 of 52

Marks: 1 (Budgeted Time 1 Min)

$\Sigma = \{a,b\}$ then string abbabb has length equal to _____.

Answer (Please select your correct option)

VuAnswers.com

Three

Four

Five

Six

No.of letters in string=length

Made by: Waqar Siddhu

Question No : 21 of 52

Marks: 1 (Budgeted Time 1 Min)

The language generated by CFG is called _____.

Answer (Please select your correct option)

VuAnswers.com

Infinite

Context Free Language (CFL) Lec:31,page:83

Regular

Finite

Made by: Waqar Siddhu

Question No : 22 of 52

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)

VuAnswers.com

RE Lec:3,page:9

TG

FA

GTG

Made by: Waqar Siddhu

Question No : 23 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following is RE for a language defined over $\Sigma = \{a, b\}$ having words starting with a:

Answer (Please select your correct option)

VuAnswers.com

(a + b)*

aa(a + b)+

a(a + b)*

lec:4,page:12

a*(a + b)

Made by: Waqar Siddhu

Question No : 24 of 52

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)

VuAnswers.com

- Incrementing
lec:22,page:60
- Complementing
- Decrementing
- Multiplication

Made by: Waqar Siddhu

Question No : 25 of 52

Marks: 1 (Budgeted Time 1 Min)

Left hand side of a production in Context free grammar (CFG) consists of _____.

Answer (Please select your correct option)

VuAnswers.com

One terminal



More than one terminal



One non-terminal

Lec:31,page:87



Terminals and non-terminals



Made by: Waqar Siddhu

Question No : 26 of 52

Marks: 1 (Budgeted Time 1 Min)

A regular language _____ .

Answer (Please select your correct option)

VuAnswers.com

Must be finite

Must be infinite

Can be finite or infinite

concept

Complex Language

Made by: Waqar Siddhu

Question No : 27 of 52

Marks: 1 (Budgeted Time 1 Min)

If a language can be expressed by a regular expression, then its complement is _____ .

Answer (Please select your correct option)

VuAnswers.com

Regular **lec:23,page:66**

Non Regular

Finite

Infinite

Made by: Waqar Siddhu

Question No : 28 of 52

Marks: 1 (Budgeted Time 1 Min)

If a given Context Free grammar (CFG) contains a production of the form $S \rightarrow \Lambda$, then _____

Answer (Please select your correct option)

VuAnswers.com

- The corresponding CFL is not empty. **concept**
- The corresponding CFL is empty.
- The corresponding CFL is not empty if the language is regular
- The corresponding CFL is empty and non regular.

Made by: Waqar Siddhu

Question No : 29 of 52

Marks: 1 (Budgeted Time 1 Min)

Can a turing machine's head ever be in the same location in two successive steps?

Answer (Please select your correct option)

VuAnswers.com

- Yes
- Yes but only in finite languages
- No
- Yes but only in infinite languages

Made by: Waqar Siddhu

Question No : 30 of 52

Marks: 1 (Budgeted Time 1 Min)

In _____ there are Finite set of states containing exactly one START state and some (may be none) HALT states that cause execution to terminate, when the HALT states are entered.

Answer (Please select your correct option)

VuAnswers.com

- TG
- Turing Machine
- GTG
- Finite Automata

Lec 45

Made by: Waqar Siddhu

Question No : 31 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following statement(s) is/are true or false?

- 1) The turing machine is similar to a finite automaton but with an unlimited and unrestricted memory.
- 2) A Turing machine is a much more accurate model of a general purpose computer.

Answer (Please select your correct option)

VuAnswers.com

Statement 1 is true

Statement 2 is true

Both statements (1 & 2) are false

Statement 2 is false

Both statements true

Made by: Waqar Siddhu

Question No : 32 of 52

Marks: 1 (Budgeted Time 1 Min)

We can have more than one parse trees for a given string in case of _____ Context Free Grammar (CFG).

Answer (Please select your correct option)

VuAnswers.com

vague



ambiguous

Lec:33,page:95



hazy



simple



Made by: Waqar Siddhu

Question No : 33 of 52

Marks: 1 (Budgeted Time 1 Min)

The language of $a^n b^n$ can be expressed by:

Answer (Please select your correct option)

VuAnswers.com

- FA
- TG
- GTG
- PDA concept (non regular language)

Made by: Waqar Siddhu

Question No : 34 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following theorem partitions Σ^* into distinct classes?

Answer (Please select your correct option)

VuAnswers.com

Decidability theorem

Myhill Nerode theorem

Lec:27,page:75

Kleen's theorem

Emptiness theorem

Made by: Waqar Siddhu

Question No : 35 of 52

Marks: 1 (Budgeted Time 1 Min)

The languages are supposed to be _____ in case of testing pumping lemma.

Answer (Please select your correct option)

VuAnswers.com

context free

irregular

both regular and irregular

regular

Made by: Waqar Siddhu

Question No : 36 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 1$

$Z \rightarrow 0$

Answer (Please select your correct option)

VuAnswers.com

00100

0010000

001

00010

Made by: Waqar Siddhu

Question No : 37 of 52

Marks: 1 (Budgeted Time 1 Min)

A read state can have _____ outgoing edge/ edges.

Answer (Please select your correct option)

VuAnswers.com

1

2

3

Any number of

Lec:38,page:112

Made by: Waqar Siddhu

Question No : 38 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following states do not have outgoing edges:

Answer (Please select your correct option)

VuAnswers.com

Start

Read

Pop

Accept

Lecture 37

Made by: Waqar Siddhu

Question No : 39 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

S---->01A

A---->10B

B---->0A|11

Answer (Please select your correct option)

VuAnswers.com

011011

011011011

011001011

011001001011

Made by: Waqar Siddhu

Question No : 40 of 52

Marks: 1 (Budgeted Time 1 Min)

Let us consider the following Turing machine (T^M):

(y, Y, R)	(f, f, L)
(f, f, R)	(v, v, L)

Answer (Please select your correct option)

VuAnswers.com

fffeggg

fffegggf

fffegg

ffffegg

Made by: Waqar Siddhu

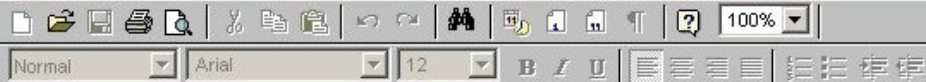
Question No : 41 of 52

Marks: 2 (Budgeted Time 4 Min)

What is meant by "Left most Derivation" in context of CFG?

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

VuAnswers.com



Lec:36,page:103

Made by: Waqar Siddhu

Question No : 42 of 52

Marks: 2 (Budgeted Time 4 Min)

Explain the language L of string, defined over $\Sigma = \{0,1\}$, having double 0's or double 1's?

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

VuAnswers.com



$(0+1)^*(00+11)(0+1)^*$

Made by: Waqar Siddhu

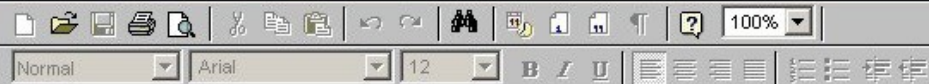
Question No : 44 of 52

Marks: 2 (Budgeted Time 4 Min)

Consider live productions to be applied during derivation of a word. In your point of view what will be the ultimate result?

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

VuAnswers.com



Lec:43

Made by: Waqar Siddhu

Question No : 45 of 52

Marks: 3 (Budgeted Time 6 Min)

What is meant by the following statement ?

"LANGUAGE IS CLOSED"

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

VuAnswers.com



Made by: Waqar Siddhu

Question No : 46 of 52

Marks: 3 (Budgeted Time 6 Min)

Write three different parsing techniques.

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

VuAnswers.com



page:136 lec:44

Made by: Waqar Siddhu

Question No : 47 of 52

Marks: 3 (Budgeted Time 6 Min)

Illustrate Decidable Problem with the help of an example.

Marks [1+2]

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

VuAnswers.com



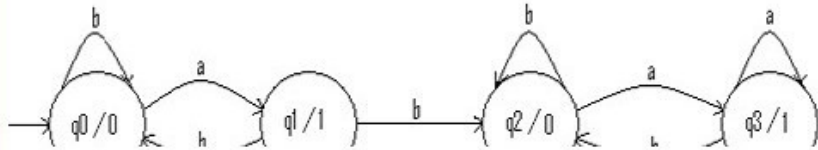
Lec:29,page80

Made by: Waqar Siddhu

Question No : 48 of 52

Marks: 3 (Budgeted Time 6 Min)

Consider the following Moore machine:



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

VuAnswers.com

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

Made by: Waqar Siddhu

Question No : 49 of 52

Marks: 5 (Budgeted Time 10 Min)

Consider the language L which is EVEN-EVEN, defined over $\Sigma = \{a,b\}$. In how many classes does L may partition Σ^* . Explain briefly.

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

VuAnswers.com



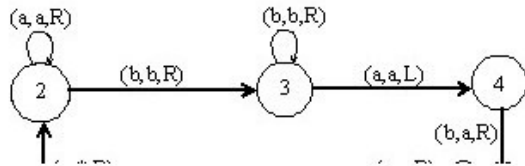
Lec:28,Page:77

Made by: Waqar Siddhu

Question No : 50 of 52

Marks: 5 (Budgeted Time 10 Min)

Consider the following TM



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

VuAnswers.com



Made by: Waqar Siddhu

Question No : 51 of 52

Marks: 5 (Budgeted Time 10 Min)

Derive Chomsky Normal Form (CNF) corresponding to the Context Free Grammar (CFG) given below:

$A \rightarrow BAB \mid B \mid \Lambda$

$B \rightarrow 00 \mid \Lambda$

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

VuAnswers.com



Made by: Waqar Siddhu

Question No : 52 of 52

Marks: 5 (Budgeted Time 10 Min)

Suppose a Maze of 20 boxes; 1 box for initial and 1 for final state. 6 boxes are for non-moveable states while the rest can be 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](#))

VuAnswers.com

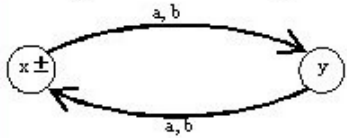
The image shows a rich text editor interface. At the top, there is a toolbar with various icons for file operations (new, open, save, print, find), editing (undo, redo, cut, copy, paste), and formatting (bold, italic, underline, text color, background color, bulleted list, numbered list, link, unlink). Below the toolbar, there are dropdown menus for font style (Normal), font family (Arial), and font size (12). To the right of these are buttons for bold (B), italic (I), and underline (U). The main area of the editor is a large, empty white space for text input. At the bottom left, there is a small scroll bar.

Made by: Waqar Siddhu

Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

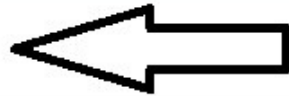
Below given FA can be represented by



Answer (Please select your correct option)

VuAnswers.com

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



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

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

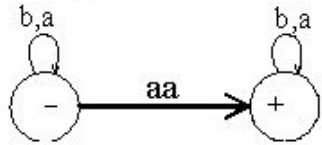
$(a + b)^*(a + b)^*$

Made by: Waqar Siddhu

Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given TG has _____ RE.



Answer (Please select your correct option)

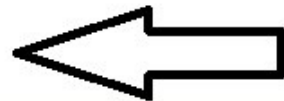
VuAnswers.com

(b+a) (aa) (b+a)*

(a+b) (aa) (a+b)*

(a+b)* (aa) (a+b)*

(a+b)* (aa) (a+b)

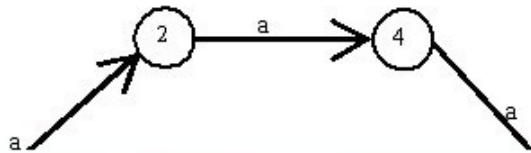


Made by: Waqar Siddhu

Question No : 4 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given TG's are _____.



Answer (Please select your correct option)

VuAnswers.com

non-symmetric

Equivalent

Non-equivalent

TG's are not valid

Made by: Waqar Siddhu

Question No : 5 of 52

Marks: 1 (Budgeted Time 1 Min)

"One GTG can generate _____ language".

Answer (Please select your correct option)

VuAnswers.com

more than one



only one



only two



only three



Made by: Waqar Siddhu

Question No : 6 of 52

Marks: 1 (Budgeted Time 1 Min)

Even-palindrome is a _____ language

Answer (Please select your correct option)

VuAnswers.com

non-regular



regular

regular but infinite

regular but finite

Made by: Waqar Siddhu

Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are two regular languages, then _____ is/are also regular.

Answer (Please select your correct option)

VuAnswers.com

Both $L_1 \cup L_2, L_1 \cap L_2$



$L_1 \cap L_2$

$L_1 \cup L_2$

$L_1 \cap L_2$

Made by: Waqar Siddhu

Question No : 8 of 52

Marks: 1 (Budgeted Time 1 Min)

If the FA has N states, then test the words of length less than N . If any one word is accepted by this FA, then it will accept ____ word.

Answer (Please select your correct option)

VuAnswers.com

All



No

One

Two

Made by: Waqar Siddhu

Question No : 9 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are equivalent?

Answer (Please select your correct option)

VuAnswers.com

1(001)* and (10)*10

x(xx)* and (x)*x

x⁺ and x*



x⁺ and x*x⁺

Made by: Waqar Siddhu

Question No : 10 of 52

Marks: 1 (Budgeted Time 1 Min)

An alphabet of Σ is valid if

Answer (Please select your correct option)

VuAnswers.com

No letter of Σ appears in middle of any other letter

No letter of Σ appears at end of any other letter

No letter of Σ appears at start of any other letter

No letter of Σ appears at end or middle of any other letter



Made by: Waqar Siddhu

Question No : 11 of 52

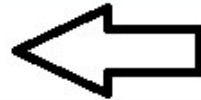
Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are not equivalent?

Answer (Please select your correct option)

VuAnswers.com

(ab)* and a*b*



x(xx)* and (xx)*x

x* and x*x*

x(x)* and (x)*x

Made by: Waqar Siddhu

Question No : 12 of 52

Marks: 1 (Budgeted Time 1 Min)

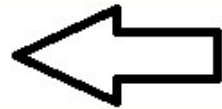
There exist _____ derivations of a certain word in ambiguous grammar.

Answer (Please select your correct option)

VuAnswers.com

more than one

Exactly one



exactly two

no

Made by: Waqar Siddhu

Question No : 13 of 52

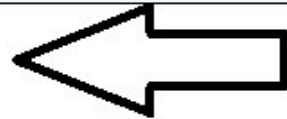
Marks: 1 (Budgeted Time 1 Min)

Regular languages are closed under _____

Answer (Please select your correct option)

VuAnswers.com

Union and Concatenation



Union and Division

Union and Exponent

Union and Factorial

Made by: Waqar Siddhu

Question No : 14 of 52

Marks: 1 (Budgeted Time 1 Min)

Which one of the following statements is INCORRECT:

Answer (Please select your correct option)

VuAnswers.com

A language consisting of all strings over $\Sigma=\{a,b\}$ having equal number of a's and b's is a regular language

Every language that can be expressed by FA can also be expressed by RE

None of these



$(a+b)^*aa(a+b)^*$ generates Regular language.

Made by: Waqar Siddhu

Question No : 15 of 52

Marks: 1 (Budgeted Time 1 Min)

TM is more powerful than FSM because

not sure

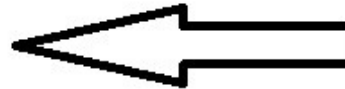
Answer (Please select your correct option)

VuAnswers.com

The tape movement is confined to one direction

It has no finite state control

It has the capability to remember arbitrary long sequences of input symbols



The tape movement is confined to more than one directions

Made by: Waqar Siddhu

Question No : 16 of 52

Marks: 1 (Budgeted Time 1 Min)

CYK algorithm was invented by John Cocke and later was published by ____

Answer (Please select your correct option)

VuAnswers.com

Talik Khon and Daniel H

Tandao Kasami and Daniel H



Tandao Dagger and Daniel H

Talik Khon

Made by: Waqar Siddhu

Question No : 17 of 52

Marks: 1 (Budgeted Time 1 Min)

The process of finding the derivation of word generated by particular grammar is called _____

pg 136

VuAnswers.com

Answer (Please select your correct option)

Processing

Parsing

Programming

Planing



Made by: Waqar Siddhu

Question No : 18 of 52

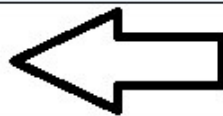
Marks: 1 (Budgeted Time 1 Min)

There are different parsing techniques, including _____

Answer (Please select your correct option)

VuAnswers.com

- Top down parsing
- Bottom up parsing
- Parsing technique for particular grammar of arithmetic expression
- All of these



Made by: Waqar Siddhu

Question No : 19 of 52

Marks: 1 (Budgeted Time 1 Min)

$\Sigma = \{a, Aa, Abb\}$, then string $aAaAbbAa$ has length equal to _____.

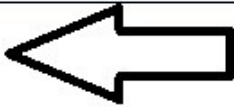
Answer (Please select your correct option)

VuAnswers.com

Three



Four



One



Two



Made by: Waqar Siddhu

Question No : 20 of 52

Marks: 1 (Budgeted Time 1 Min)

The language generated by CFG is called _____;

Answer (Please select your correct option)

VuAnswers.com

Infinite



Context Free Language (CFL)



Regular



Finite



Made by: Waqar Siddhu

Question No : 21 of 52

Marks: 1 (Budgeted Time 1 Min)

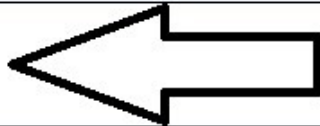
In _____ there must be transition for all letters.

Answer (Please select your correct option)

VuAnswers.com

NFA

FA



TG

GTG

Made by: Waqar Siddhu

Question No : 22 of 52

Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

VuAnswers.com

$r_1^* r_2 r_3^*$

$(r_1 r_2 r_3)^*$

$r_1^* r_2^* r_3^*$

None of the given



Made by: Waqar Siddhu

Question No : 23 of 52

Marks: 1 (Budgeted Time 1 Min)

A regular language _____.

Answer (Please select your correct option)

VuAnswers.com

Must be finite



Must be infinite

Can be finite or infinite

Complex Language

Made by: Waqar Siddhu

Question No : 24 of 52

Marks: 1 (Budgeted Time 1 Min)

If a language can be expressed by a regular expression, then its complement is _____.

Answer (Please select your correct option)

VuAnswers.com

Regular



Non Regular

Finite

Infinite

Made by: Waqar Siddhu

Question No : 25 of 52

Marks: 1 (Budgeted Time 1 Min)

For every Context Free Grammar (CFG), we can make the corresponding _____.

Answer (Please select your correct option)

VuAnswers.com

FA

TG

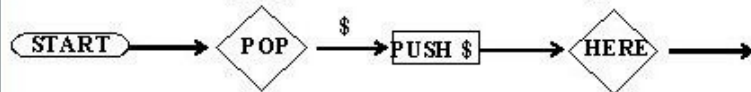
PDA

Regular Grammar



Made by: Waqar Siddhu

Look at the following diagram and select the correct option:



pg 120

Answer (Please select your correct option)

VuAnswers.com

The PDA must not begin with the sequence

The PDA may begin with the sequence

The PDA must begin with the sequence

The PDA may not begin with the sequence



Made by: Waqar Siddhu

Question No : 27 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG) and select the correct choice

$S \rightarrow AB$

$A \rightarrow BSB \mid a \mid b$

$B \rightarrow CC$

$C \rightarrow SS \mid b \mid bb$

Answer (Please select your correct option)

VuAnswers.com

abb is a word in the corresponding CFL.

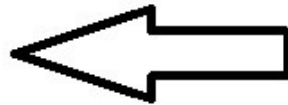


abb is not the word of corresponding CFL.

Any word can be accepted from the corresponding CFL.

b is a word in the corresponding CFL.

Made by: Waqar Siddhu

Question No : 28 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following statement(s) is/are true or false?

- 1) The turing machine is similar to a finite automaton but with an unlimited and unrestricted memory.
- 2) A Turing machine is a much more accurate model of a general purpose computer.

Answer (Please select your correct option)

VuAnswers.com

Statement 1 is true



Statement 2 is true

Both statements (1 & 2) are false

Statement 2 is false

Made by: Waqar Siddhu

Question No : 29 of 52

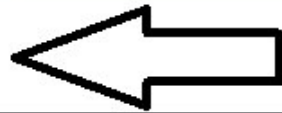
Marks: 1 (Budgeted Time 1 Min)

Language of strings having even number of a's is considered to be:

Answer (Please select your correct option)

VuAnswers.com

Regular



Irrelgular

Irregular and infinite

Irregular and finite

Made by: Waqar Siddhu

Question No : 30 of 52

Marks: 1 (Budgeted Time 1 Min)

If we have two transition graphs then their union will be expressed by:

Answer (Please select your correct option)

VuAnswers.com

taking a common start state and joining them by two null transitions



just connecting both start states by null transitions

connecting final state of first TG to the initial state of second TG

connecting the final state of first TG to the final state of second TG

Made by: Waqar Siddhu

Question No : 31 of 52

Marks: 1 (Budgeted Time 1 Min)

A language of strings of prime length is considered to be:

Answer (Please select your correct option)

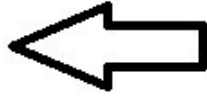
VuAnswers.com

regular but infinite

regular

irregular

regular but finite



Made by: Waqar Siddhu

Question No : 32 of 52

Marks: 1 (Budgeted Time 1 Min)

_____ and _____ are removed in order to make a CFG in Chomsky Normal Form (CNF).

Answer (Please select your correct option)

VuAnswers.com

Null, nullable productions

Nullable, unit productions

Null, unit productions

Strings of length 0, null



Made by: Waqar Siddhu

Question No : 33 of 52

Marks: 1 (Budgeted Time 1 Min)

The languages are supposed to be _____ in case of testing pumping lemma.

Answer (Please select your correct option)

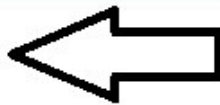
VuAnswers.com

context free

irregular

both regular and irregular

regular



Made by: Waqar Siddhu

Question No : 34 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following refers to an effectively solvable problem having answer in "Yes" or "No"?

pg 80

Answer (Please select your correct option)

VuAnswers.com

Decision procedure



Logical problem

Analytical problem

Binary procedure

Made by: Waqar Siddhu

Question No : 35 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 0$

$Z \rightarrow 1$

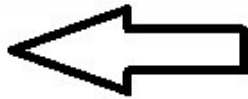
Answer (Please select your correct option)

VuAnswers.com

110



11011



1101111



11101



Made by: Waqar Siddhu

Question No : 36 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 1$

$Z \rightarrow 0$

Answer (Please select your correct option)

VuAnswers.com

001



00010



0010000



00100



Made by: Waqar Siddhu

Question No : 37 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following is a regular Context Free Grammar:

Answer (Please select your correct option)

VuAnswers.com

$S \rightarrow abS \mid baS \mid \wedge$



$S \rightarrow aSb \mid baS \mid \wedge$

$S \rightarrow abS \mid bSa \mid \wedge$

$S \rightarrow aSb \mid Sa \mid \wedge$

Made by: Waqar Siddhu

Question No : 38 of 52

Marks: 1 (Budgeted Time 1 Min)

Concatenation of r1 and r2 will be shown as:

Answer (Please select your correct option)

VuAnswers.com

r1+r2

r2+r1

r2r1

r1r2



Made by: Waqar Siddhu

A nonterminal is said to be self-embedded, if in a given derivation of a word, it ever occurs as a tree _____ of itself.

pg 126 bk

Answer (Please select your correct option)

VuAnswers.com

ascendant

descendant

top

bottom



Made by: Waqar Siddhu

Question No : 40 of 52

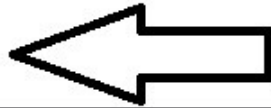
Marks: 1 (Budgeted Time 1 Min)

_____ is always Deterministic.

Answer (Please select your correct option)

VuAnswers.com

Finite Automaton



Transition Graph

Generalize Transition Graph

Non-deterministic finite automaton

Made by: Waqar Siddhu

Question No : 41 of 52

Marks: 2 (Budgeted Time 4 Min)

Write alternative form of this production.

$S \rightarrow aS, S \rightarrow bS, S \rightarrow \Lambda$

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

VuAnswers.com



Made by: Waqar Siddhu

What are the uses of Push Down Automata (PDA) in computing?

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

VuAnswers.com



The PDA is used in theories about what can be computed by machines. PDA described with a formal grammar, it can be used in parser design. The deterministic pushdown automaton can handle all deterministic context-free languages while the nondeterministic version can handle all context-free languages.

Made by: Waqar Siddhu

What is meant by Row language?

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

VuAnswers.com



Normal Arial 12 B I U

row language whose alphabet is $\Sigma = \{Row_1, Row_2, \dots, Row_7\}$ i.e. the alphabet consists of the letters which are the names of the rows in the summary table.

that the Row language is the language whose alphabet $\Sigma = \{Row_1, Row_2, \dots, Row_7\}$,

Made by: Waqar Siddhu

Question No : 44 of 52

Marks: 2 (Budgeted Time 4 Min)

Write down regular expression for a language L of strings defined over $\Sigma = \{a, b\}$ that neither ends in "a" nor with "b".

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

VuAnswers.com



Made by: Waqar Siddhu

What are the steps of Recursive Definition of Languages?

Answer (Plea

Recursive definition of languages

The following three steps are used in recursive definition

Some basic words are specified in the language.

Rules for constructing more words are defined in the language.

No strings except those constructed in above, are allowed to be in the language.

Examples

Defining language of INTEGER

Step 1: 1 is in **INTEGER**.

Step 2: If x is in **INTEGER** then $x+1$ and $x-1$ are also in **INTEGER**.

Step 3: No strings except those constructed in above, are allowed to be in **INTEGER**.

VuAnswers.com

Made by: Waqar Siddhu

What does the following arbitrary summary table show?

FROM Where	TO Where	READ What	POP What	PUSH What	ROW Number
READ ₀	READ ₇	b	b	abb	11

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

Consider the following row from an arbitrary summary table

FROM Where	TO Where	READ What	POP What	PUSH What	ROW Number
READ ₉	READ ₃	b	b	abb	11

which shows that Row₁₁ is not Net style sentence because the trip from READ₉ to READ₃ does not pop one letter from the STACK, while it adds two letters to the STACK. However Row₁₁ can be concatenated with some other Net style sentences *e.g.* Row₁₁Net(READ₃, READ₇, a)Net(READ₇, READ₁, b)Net(READ₁, READ₈, b) Which gives the nonterminal

Net(READ₉, READ₈, b), now the whole process can be written as

Net(READ₉, READ₈, b) → Row₁₁Net(READ₃, READ₇, a) Net(READ₇, READ₁, b)Net(READ₁, READ₈, b)

Which will be a production in the CFG of the corresponding **row language**.

VuAnswers.com

Waqar Siddhu

Made by: Waqar Siddhu

Question No : 47 of 52

Marks: 3 (Budgeted Time 6 Min)

Write down Context Free Grammar (CFG) for the language of strings expressed by the following regular expression:

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

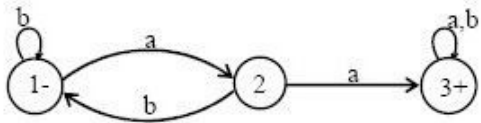
Answer (Please [click here](#) to Add Answer)

VuAnswers.com

$S \rightarrow a|b|Xa|Xb, \quad X \rightarrow aX|bX|^\wedge$

Made by: Waqar Siddhu

Let us consider the following Finite Automaton (FA):



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

VuAnswers.com



Made by: Waqar Siddhu

Write the CFG for EVEN-EVEN language?

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

Example

$\Sigma = \{a,b\}$

productions:

$S \rightarrow SS$

$S \rightarrow XS$

$S \rightarrow \Lambda$

$S \rightarrow YSY$

$X \rightarrow aa$

$X \rightarrow bb$

$Y \rightarrow ab$

$Y \rightarrow ba$

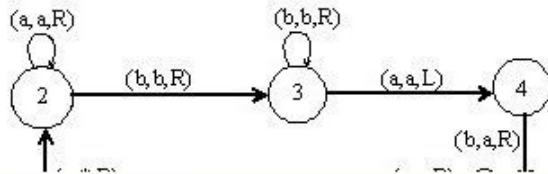
This grammar generates EVEN-EVEN language.

VuAnswers.com

Made by: Waqar Siddhu

Made by: Waqar Siddhu

Consider the following TM



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

VuAnswers.com



Made by: Waqar Siddhu

Using suitable examples, differentiate between Kleene star closure and plus operation?

Answer (Pleas

Kleene Star Closure

Given Σ , then the Kleene Star Closure of the alphabet Σ , denoted by Σ^* , is the collection of all strings defined over Σ , including Λ .

It is to be noted that Kleene Star Closure can be defined over any set of strings.

Examples

If $\Sigma = \{x\}$

Then $\Sigma^* = \{\Lambda, x, xx, xxx, xxxx, \dots\}$

If $\Sigma = \{0,1\}$

Then $\Sigma^* = \{\Lambda, 0, 1, 00, 01, 10, 11, \dots\}$

If $\Sigma = \{aaB, c\}$

Then $\Sigma^* = \{\Lambda, aaB, c, aaBaaB, aaBc, caaB, cc, \dots\}$

Note

Languages generated by Kleene Star Closure of set of strings, are infinite languages. (By infinite language, it is supposed that the language contains infinite many words, each of finite length).

PLUS Operation ($^+$)

Plus Operation is same as Kleene Star Closure except that it does not generate Λ (null string), automatically.

Example

If $\Sigma = \{0,1\}$

Then $\Sigma^+ = \{0, 1, 00, 01, 10, 11, \dots\}$

If $\Sigma = \{aab, c\}$

Then $\Sigma^+ = \{aab, c, aabaab, aabc, caab, cc, \dots\}$

VuAnswers.com

Waqar Siddhu

Made by: Waqar Siddhu

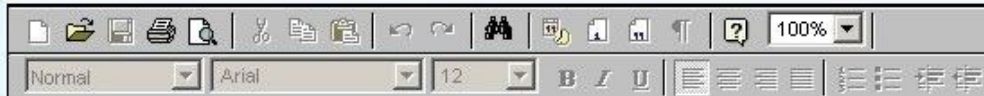
a. Construct Context Free Grammar (CFG) for the language defined by the regular expression:

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

b. Remove null productions from the CFG constructed in part i.

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

VuAnswers.com



Made by: Waqar Siddhu

Which statement is true?

pg 4

Answer (Please select your correct option)

VuAnswers.com

All words are strings



All strings are words

Both are always same

All letter are string

Made by: Waqar Siddhu

Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are expressed by r_1 and r_2 , respectively then the language expressed by $(r_1)(r_2)$ will be _____

Answer (Please select your correct option)

VuAnswers.com

Regular 

Ir-regular

Undermined

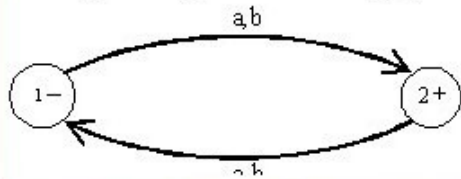
Such language does not exist

Made by: Waqar Siddhu

Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

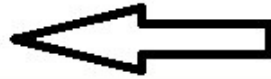
Below given FA generates the language having strings of _____



Answer (Please select your correct option)

VuAnswers.com

ODD length



EVEN length

Equal number of a's and b's

Odd number of a's and b's

Made by: Waqar Siddhu

Question No : 4 of 52

Marks: 1 (Budgeted Time 1 Min)

If an FA accepts no string, then language is denoted by _____

Answer (Please select your correct option)

VuAnswers.com

{ }



\emptyset

Both { } and \emptyset

Null

Made by: Waqar Siddhu

Using tree structure, initial state can be represented by_____

pg 16 bk

Answer (Please select your correct option)

VuAnswers.com

An arrow



+

-

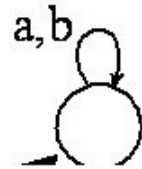
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Made by: Waqar Siddhu

Question No : 6 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given FA accepts _____ language.



Answer (Please select your correct option)

VuAnswers.com

Finite

Infinite

No

All

Made by: Waqar Siddhu

Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

Even-palindrome is a _____ language

Answer (Please select your correct option)

VuAnswers.com

non-regular



regular

regular but infinite

regular but finite

Made by: Waqar Siddhu

If L_1 and L_2 are two regular languages, then _____ is/are also regular.

pg 63 & 66 of bk

Answer (Please select your correct option)

VuAnswers.com

Both $L_1 \cup L_2, L_1 \cap L_2$



$L_1 \cap L_2$

$L_1 \cup L_2$

$L_1 \cap L_2$

Made by: Waqar Siddhu

Question No : 9 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the language L of strings, defined over $\Sigma = \{a,b\}$, ending in a

pg 74 bk

Answer (Please select your correct option)

VuAnswers.com

There are finite many classes generated by L, so L is regular



There are infinite many classes generated by L, so L is regular

There are finite many classes generated by L, so L is non-regular

There are infinite many classes generated by L, so L is non-regular

Made by: Waqar Siddhu

Pumping lemma is generally used to prove that:

pg 72

Answer (Please select your correct option)

VuAnswers.com

A given language is infinite



A given language is not regular

Whether two given regular expressions of a regular language are equivalent or not

A given language is finite

Made by: Waqar Siddhu

Question No : 11 of 52

Marks: 1 (Budgeted Time 1 Min)

If the FA has N states, then test the words of length less than N . If any one word is accepted by this FA, then it will accept ____ word.

Answer (Please select your correct option)

VuAnswers.com

All 

not sure

No

One

Two

Made by: Waqar Siddhu

Which of the following pairs of regular expressions are equivalent?

Answer (Please select your correct option)

VuAnswers.com

1(001)* and (10)*10

$x(xx)^*$ and $(x)^*x$

x^+ and x^*



x^+ and x^*x^+

Made by: Waqar Siddhu

Question No : 13 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are not equivalent?

Answer (Please select your correct option)

VuAnswers.com

(ab)* and a*b*



x(xx)* and (xx)*x

x* and x*x*

x(x)* and (x)*x

Made by: Waqar Siddhu

Which of the following statement is correct?

pg 54

Answer (Please select your correct option)

VuAnswers.com

The length of output string is greater than length of input string in moore machine.



The length of output string is greater than length of input string in mealy machine.

The length of output string is equal to length of input string in moore machine.

The length of output string is less than length of input string in mealy machine.

Made by: Waqar Siddhu

There exist _____ derivations of a certain word in ambiguous grammar.

pg 95

Answer (Please select your correct option)

VuAnswers.com

more than one

Exactly one



exactly two

no

Made by: Waqar Siddhu

Question No : 16 of 52

Marks: 1 (Budgeted Time 1 Min)

Which one of the following statements is INCORRECT:

Answer (Please select your correct option)

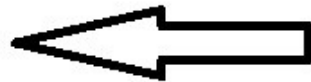
VuAnswers.com

$(a+b)^*aa(a+b)^*$ generates Regular language.

A language consisting of all strings over $\Sigma=\{a,b\}$ having equal number of a's and b's is a regular language

Every language that can be expressed by FA can also be expressed by RE

None of these



Made by: Waqar Siddhu

Question No : 17 of 52

Marks: 1 (Budgeted Time 1 Min)

We can also represent an FA using different states e.g. Accept state, Reject state, Read State etc.
The _____ state behaves as final state of an FA.

pg 105

Answer (Please select your correct option)

VuAnswers.com

Accept



Pop

Push

Reject

Made by: Waqar Siddhu

CYK algorithm was invented by John Cocke and later was published by ____

pg 134

Answer (Please select your correct option)

VuAnswers.com

Talik Khon and Daniel H

Tandao Kasami and Daniel H

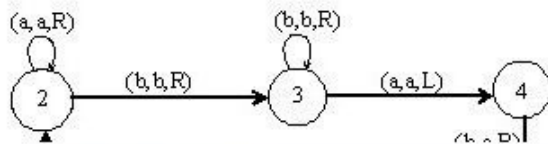


Tandao Dagger and Daniel H

Talik Khon

Made by: Waqar Siddhu

Consider the following TM



Answer (Please select your correct option)

VuAnswers.com

Above TM accepts the non-CFL $\{ a b c \}$.

Above TM accepts the non-CFL $\{ a^n b^n a^n \}$.



Above TM accepts the non-CFL $\{ a^n b^{n+2} a^n \}$.

Above TM accepts the non-CFL $\{ a^{n+2} b^n a^n \}$.

Made by: Waqar Siddhu

$\Sigma = \{a,b\}$ then string abbabb has length equal to _____.

pg 4

Answer (Please select your correct option)

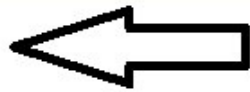
VuAnswers.com

Three

Four

Five

Six



Made by: Waqar Siddhu

Question No : 21 of 52

Marks: 1 (Budgeted Time 1 Min)

The language generated by CFG is called _____.

Answer (Please select your correct option)

VuAnswers.com

Infinite



Context Free Language (CFL)



Regular



Finite



Made by: Waqar Siddhu

If r_1 and r_2 are regular expressions then $(r_1) (r_2)$ is a _____.

Answer (Please select your correct option)

VuAnswers.com

RE 

TG

FA

GTG

Made by: Waqar Siddhu

Question No : 23 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following is RE for a language defined over $\Sigma = \{a, b\}$ having words starting with a:

Answer (Please select your correct option)

VuAnswers.com

$(a + b)^*$

$aa(a + b)^+$

$a(a + b)^*$



$a^*(a + b)$

Made by: Waqar Siddhu

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

pg 60

Answer (Please select your correct option)

VuAnswers.com

Incrementing



Complementing

Decrementing

Multiplication

Made by: Waqar Siddhu

Question No : 25 of 52

Marks: 1 (Budgeted Time 1 Min)

Left hand side of a production in Context free grammar (CFG) consists of _____.

Answer (Please select your correct option)

VuAnswers.com

One terminal

More than one terminal

One non-terminal

Terminals and non-terminals



Made by: Waqar Siddhu

Question No : 26 of 52

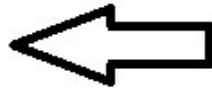
Marks: 1 (Budgeted Time 1 Min)

A regular language _____ .

Answer (Please select your correct option)

VuAnswers.com

Must be finite



Must be infinite

Can be finite or infinite

Complex Language

Made by: Waqar Siddhu

If a language can be expressed by a regular expression, then its complement is _____.

pg 66

Answer (Please select your correct option)

VuAnswers.com

Regular 

Non Regular

Finite

Infinite

Made by: Waqar Siddhu

Question No : 28 of 52

Marks: 1 (Budgeted Time 1 Min)

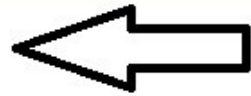
If a given Context Free grammar (CFG) contains a production of the form $S \rightarrow \Lambda$, then _____

Answer (Please select your correct option)

VuAnswers.com

The corresponding CFL is not empty.

The corresponding CFL is empty.



The corresponding CFL is not empty if the language is regular

The corresponding CFL is empty and non regular.

Made by: Waqar Siddhu

Question No : 29 of 52

Marks: 1 (Budgeted Time 1 Min)

Can a turing machine's head ever be in the same location in two successive steps?

Answer (Please select your correct option)

VuAnswers.com

Yes

Yes but only in finite languages

No



Yes but only in infinite languages

Made by: Waqar Siddhu

In _____ there are Finite set of states containing exactly one START state and some (may be none) HALT states that cause execution to terminate, when the HALT states are entered.

pg 140

Answer (Please select your correct option)

VuAnswers.com

TG



Turing Machine



GTG



Finite Automata



Made by: Waqar Siddhu

Question No : 31 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following statement(s) is/are true or false?

- 1) The turing machine is similar to a finite automaton but with an unlimited and unrestricted memory.
- 2) A Turing machine is a much more accurate model of a general purpose computer.

Answer (Please select your correct option)

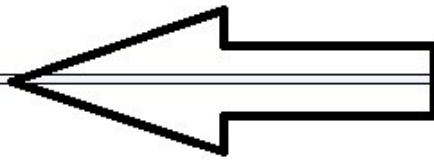
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Statement 1 is true

Statement 2 is true

Both statements (1 & 2) are false

Statement 2 is false



Made by: Waqar Siddhu

Question No : 32 of 52

Marks: 1 (Budgeted Time 1 Min)

We can have more than one parse trees for a given string in case of _____ Context Free Grammar (CFG).

pg 95

Answer (Please select your correct option)

VuAnswers.com

vague



ambiguous



hazy



simple



Made by: Waqar Siddhu

Question No : 33 of 52

Marks: 1 (Budgeted Time 1 Min)

The language of $a^n b^n$ can be expressed by:

Answer (Please select your correct option)

VuAnswers.com

FA



TG



GTG



PDA



Made by: Waqar Siddhu

Which of the following theorem partitions Σ^* into distinct classes?

pg 73 bk

Answer (Please select your correct option)

VuAnswers.com

Decidability theorem

Myhill Nerode theorem

Kleen's theorem

Emptiness theorem



Made by: Waqar Siddhu

Question No : 35 of 52

Marks: 1 (Budgeted Time 1 Min)

The languages are supposed to be _____ in case of testing pumping lemma.

**to prove puming lemma theorem language
is suposed to be regular at first and thn
proof it non regular by pumping lemma**

Answer (Please select your correct option)

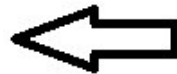
also told in th eld vuAnswers.com

context free

irregular

both regular and irregular

regular



Made by: Waqar Siddhu

Question No : 36 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 1$

$Z \rightarrow 0$

Answer (Please select your correct option)

VuAnswers.com

00100



0010000

001

00010

Made by: Waqar Siddhu

Question No : 37 of 52

Marks: 1 (Budgeted Time 1 Min)

A read state can have _____ outgoing edge/ edges.

pg 105 book

Answer (Please select your correct option)

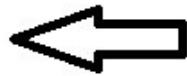
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1

2

3

Any number of



Made by: Waqar Siddhu

Question No : 38 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following states do not have outgoing edges:

pg 104 bk

Answer (Please select your correct option)

VuAnswers.com

Start

Read

Pop

Accept



Made by: Waqar Siddhu

Question No : 39 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow 01A$

$A \rightarrow 10B$

$B \rightarrow 0A|11$

Answer (Please select your correct option)

VuAnswers.com

011011

011011011

011001011

011001001011



Made by: Waqar Siddhu

Let us consider the following Turing machine (T_M):

(y, Y, R)	(f, f, L)
(f, f, R)	(v, v, L)

Answer (Please select your correct option)

VuAnswers.com

fffggg

fffgggf

fffgg

fffggg

Made by: Waqar Siddhu

What is meant by "Left most Derivation" in context of CFG?

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

VuAnswers.com



Left most derivation

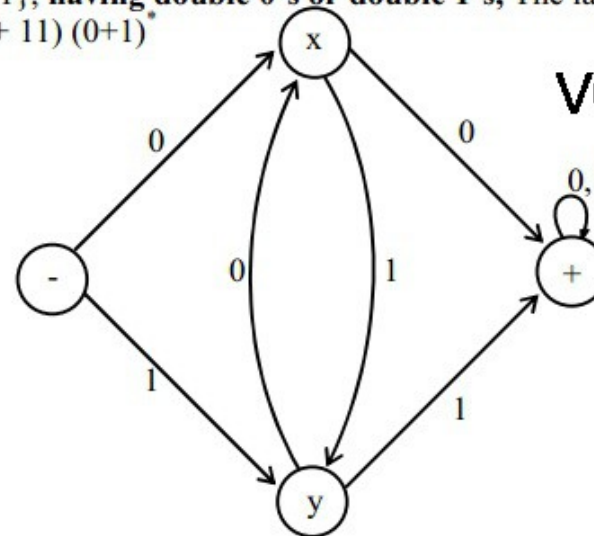
Definition

The derivation of a word w , generated by a CFG, such that at each step, a production is applied to the left most nonterminal in the working string, is said to be *left most derivation*.

Made by: Waqar Siddhu

Explain the language L of string, defined over $\Sigma = \{0,1\}$, having double 0's or double 1's?

Consider the language L of strings, defined over $\Sigma = \{0, 1\}$, **having double 0's or double 1's**, The language L may be expressed by the regular expression $(0+1)^*(00 + 11)(0+1)^*$
This language may be accepted by the following FA



VuAnswers.com

Made by: Waqar Siddhu

Consider the language defined by the following regular expression:

$b(a + b)^+a$

What will be the corresponding Context Free Grammar (CFG)?

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

VuAnswers.com



Consider the following CFG

$S \rightarrow aXb|bXa$

$X \rightarrow aX|bX|\Lambda$

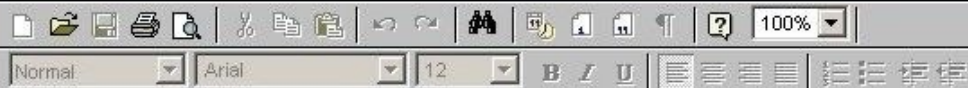
The above CFG generates the language of strings, defined over $\Sigma = \{a,b\}$, **beginning and ending in different letters.**

Made by: Waqar Siddhu

Consider live productions to be applied during derivation of a word. In your point of view what will be the ultimate result?

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

VuAnswers.com



It may be noted that every time a live production is applied during the derivation of a word it increases the number of nonterminals by one.

Made by: Waqar Siddhu

What is meant by the following statement ?

"LANGUAGE IS CLOSED"

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

VuAnswers.com



$\Sigma = \{a,b\}$

productions:

$S \rightarrow SS$

$S \rightarrow XS$

$S \rightarrow \Lambda$

Made by: Waqar Siddhu

Write three different parsing techniques.

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

VuAnswers.com



Parsing of word

Definition

The process of finding the derivation of word generated by particular grammar is called **parsing**.

There are different parsing techniques, containing the following three

Top down parsing.

Bottom up parsing.

Parsing technique for particular grammar of arithmetic expression.

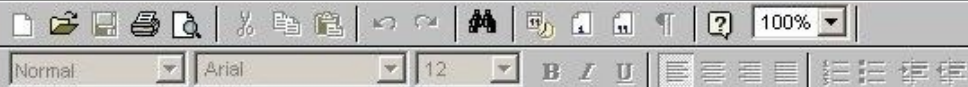
Made by: Waqar Siddhu

Illustrate Decidable Problem with the help of an example.

Marks [1+2]

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

VuAnswers.com



Decidable problem

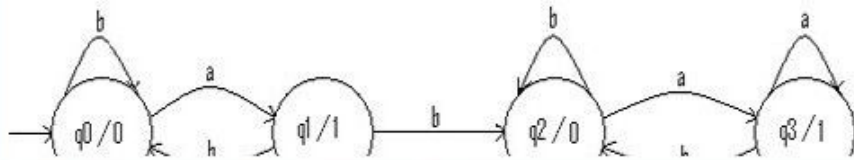
A problem that has decision procedure is called decidable problem *e.g.* the following problems

The two regular expressions define the same language.

The two FAs are equivalent.

Made by: Waqar Siddhu

Consider the following Moore machine:



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

VuAnswers.com



Made by: Waqar Siddhu

Consider the language L which is EVEN-EVEN, defined over $\Sigma = \{a,b\}$. In how many classes does L may partition Σ^* . Explain briefly.

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

VuAnswers.com



No

Example

Consider the language L which is EVEN-EVEN, defined over $\Sigma = \{a,b\}$. It can be observed that L partitions Σ^* into the following four classes

C_1 = set of all strings with even number of a's and odd number of b's.

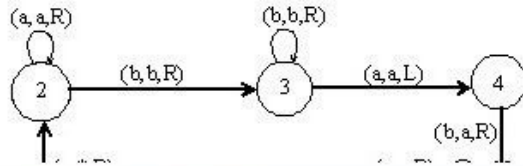
C_2 = set of all strings with odd number of a's and odd number of b's.

C_3 = set of all strings with odd number of a's and even number of b's.

C_4 = set of all strings with even number of a's and even number of b's.

Made by: Waqar Siddhu

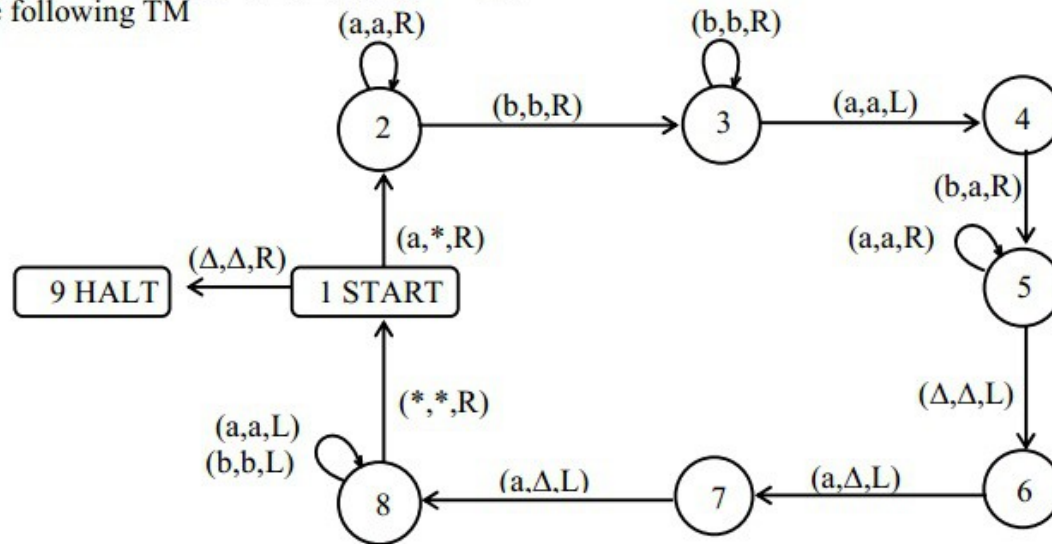
Consider the following TM



Answer (Please click here to Add Answer)

VuAnswers.com

Consider the following TM



Waqar Siddhu

The string aaabbbaaa can be observed to be accepted by the above TM. It can also be observed that the above TM accepts the non-CFL $\{a^n b^n a^n\}$.

Made by: Waqar Siddhu

Question No : 51 of 52

Marks: 5 (Budgeted Time 10 Min)

Derive Chomsky Normal Form (CNF) corresponding to the Context Free Grammar (CFG) given below:

$A \rightarrow BAB \mid B \mid \Lambda$

$B \rightarrow 00 \mid \Lambda$

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

VuAnswers.com



Made by: Waqar Siddhu

Question No : 52 of 52

Marks: 5 (Budgeted Time 10 Min)

Suppose a Maze of 20 boxes; 1 box for initial and 1 for final state. 6 boxes are for non-moveable states while the rest can be 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](#))

VuAnswers.com

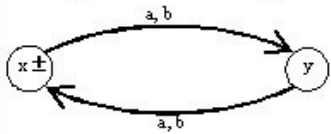


Made by: Waqar Siddhu

Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given FA can be represented by



Answer (Please select your correct option)

VuAnswers.com

$((a+b)(a+b))^*$ lec:5 ,page:13

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

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

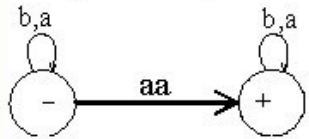
$(a+b)^*(a+b)^*$

Made by: Waqar Siddhu

Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given TG has _____ RE.



Answer (Please select your correct option)

VuAnswers.com

(b+a) (aa) (b+a)*

(a+b) (aa) (a+b)*

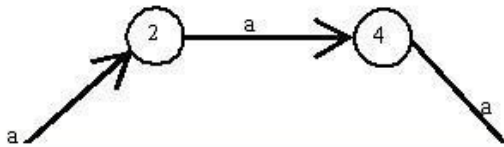
(a+b)* (aa) (a+b)*

lec:8,page:20

(a+b)* (aa) (a+b)

Made by: Waqar Siddhu

Below given TG's are _____



Answer (Please select your correct option)

VuAnswers.com

non-symmetric

Equivalent

page 21

Non-equivalent

TG's are not valid

Made by: Waqar Siddhu

Question No : 5 of 52

Marks: 1 (Budgeted Time 1 Min)

"One GTG can generate _____ language".

Answer (Please select your correct option)

VuAnswers.com

more than one

only one

Concept

only two

only three

Made by: Waqar Siddhu

Question No : 6 of 52

Marks: 1 (Budgeted Time 1 Min)

Even-palindrome is a _____ language

Answer (Please select your correct option)

VuAnswers.com

non-regular

Lec:25,page:71

regular

regular but infinite

regular but finite

Made by: Waqar Siddhu

Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are two regular languages, then _____ is/are also regular.

Answer (Please select your correct option)

VuAnswers.com

Both $L_1 \cup L_2, L_1 \cap L_2$ lec 24, page 65 $L_1 + L_2 = L_1 \cup L_2$ and on page 67

$L_1 \cap L_2$

$L_1 \cup L_2$

$L_1 \cap L_2$

Made by: Waqar Siddhu

Question No : 8 of 52

Marks: 1 (Budgeted Time 1 Min)

If the FA has N states, then test the words of length less than N. If any one word is accepted by this FA, then it will accept ____ word.

Answer (Please select your correct option)

VuAnswers.com

All **Lec:30,page:85** concept

No

One

Two

Made by: Waqar Siddhu

Question No : 9 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are equivalent?

Answer (Please select your correct option)

VuAnswers.com

1(001)* and (10)*10

x(xx)* and (x)*x

concept

x⁺ and x*

x⁺ and x*x⁺

Made by: Waqar Siddhu

Question No : 10 of 52

Marks: 1 (Budgeted Time 1 Min)

An alphabet of Σ is valid if

Answer (Please select your correct option)

VuAnswers.com

No letter of Σ appears in middle of any other letter

No letter of Σ appears at end of any other letter

No letter of Σ appears at start of any other letter

Lec:1,page:4

No letter of Σ appears at end or middle of any other letter

Made by: Waqar Siddhu

Question No : 11 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are not equivalent?

Answer (Please select your correct option)

VuAnswers.com

(ab)* and a*b*

x(xx)* and (xx)*x

x⁺ and x*x⁺

Concept

x(x)* and (x)*x

Made by: Waqar Siddhu

Question No : 12 of 52

Marks: 1 (Budgeted Time 1 Min)

There exist _____ derivations of a certain word in ambiguous grammar.

Answer (Please select your correct option)

VuAnswers.com

more than one

Exactly one

exactly two

no

Made by: Waqar Siddhu

Question No : 13 of 52

Marks: 1 (Budgeted Time 1 Min)

Regular languages are closed under _____

Answer (Please select your correct option)

VuAnswers.com

Union and Concatenation

Concept

Union and Division

Union and Exponent

Union and Factorial

Made by: Waqar Siddhu

Question No : 14 of 52

Marks: 1 (Budgeted Time 1 Min)

Which one of the following statements is INCORRECT:

Answer (Please select your correct option)

VuAnswers.com

Lec:26,page:73

A language consisting of all strings over $\Sigma=\{a,b\}$ having equal number of a's and b's is a regular language

Every language that can be expressed by FA can also be expressed by RE

None of these

$(a+b)^*aa(a+b)^*$ generates Regular language.

Made by: Waqar Siddhu

Question No : 15 of 52

Marks: 1 (Budgeted Time 1 Min)

TM is more powerful than FSM because

Answer (Please select your correct option)

VuAnswers.com

- The tape movement is confined to one direction
- It has no finite state control
- It has the capability to remember arbitrary long sequences of input symbols
- The tape movement is confined to more than one directions

Made by: Waqar Siddhu

Question No : 16 of 52

Marks: 1 (Budgeted Time 1 Min)

CYK algorithm was invented by John Cocke and later was published by ____

Answer (Please select your correct option)

VuAnswers.com

Talik Khon and Daniel H



Tandao Kasami and Daniel H

lec:44,page:135



Tandao Dagger and Daniel H



Talik Khon



Made by: Waqar Siddhu

Question No : 17 of 52

Marks: 1 (Budgeted Time 1 Min)

The process of finding the derivation of word generated by particular grammar is called _____

Answer (Please select your correct option)

VuAnswers.com

Processing

Parsing

Lec:44,page:136

Programming

Planing

Made by: Waqar Siddhu

Question No : 18 of 52

Marks: 1 (Budgeted Time 1 Min)

There are different parsing techniques, including _____

Answer (Please select your correct option)

VuAnswers.com

- Top down parsing
- Bottom up parsing
- Parsing technique for particular grammar of arithmetic expression
- All of these

Lec:44,page:136

Made by: Waqar Siddhu

Question No : 19 of 52

Marks: 1 (Budgeted Time 1 Min)

$\Sigma = \{a, Aa, Abb\}$, then string $aAaAbbAa$ has length equal to _____.

Answer (Please select your correct option)

VuAnswers.com

Three

Four

concept

One

Two

Made by: Waqar Siddhu

The language generated by CFG is called _____.

Answer (Please select your correct option)

VuAnswers.com

Infinite

Context Free Language (CFL)

Lec:31,page:88

Regular

Finite

Made by: Waqar Siddhu

Question No : 21 of 52

Marks: 1 (Budgeted Time 1 Min)

In _____ there must be transition for all letters.

Answer (Please select your correct option)

VuAnswers.com

NFA

FA

Lec:4,page:11

TG

GTG

Made by: Waqar Siddhu



Answer (Please select your correct option)

VuAnswers.com

 $r_1^* r_2 r_3^*$
 $(r_1 r_2 r_3)^*$
 $r_1^* r_2^* r_3^*$
 None of the given incomplete Q..RE of ist is $r_2 r_3^* r_4$

Made by: Waqar Siddhu

Question No : 23 of 52

Marks: 1 (Budgeted Time 1 Min)

A regular language _____ .

Answer (Please select your correct option)

VuAnswers.com

Must be finite

Must be infinite

Can be finite or infinite

concept

Complex Language

Made by: Waqar Siddhu

Question No : 24 of 52

Marks: 1 (Budgeted Time 1 Min)

If a language can be expressed by a regular expression, then its complement is _____.

Answer (Please select your correct option)

VuAnswers.com

Regular

Lec:24,page:66

Non Regular

Finite

Infinite

Made by: Waqar Siddhu

Question No : 25 of 52

Marks: 1 (Budgeted Time 1 Min)

For every Context Free Grammar (CFG), we can make the corresponding _____.

Answer (Please select your correct option)

VuAnswers.com

FA

TG

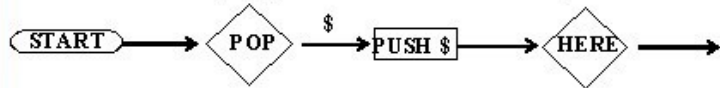
PDA

Lec:39,page:111

Regular Grammar

Made by: Waqar Siddhu

Look at the following diagram and select the correct option:



Answer (Please select your correct option)

VuAnswers.com

The PDA must not begin with the sequence

The PDA may begin with the sequence

The PDA must begin with the sequence

Lec:40,page:119

The PDA may not begin with the sequence

Made by: Waqar Siddhu

Consider the following Context Free Grammar (CFG) and select the correct choice

$S \rightarrow AB$

$A \rightarrow BSB \mid a \mid b$

$B \rightarrow CC$

$C \rightarrow SS \mid b \mid bb$

Answer (Please select your correct option)

VuAnswers.com

abb is a word in the corresponding CFL. concept

abb is not the word of corresponding CFL.

Any word can be accepted from the corresponding CFL.

b is a word in the corresponding CFL.

Made by: Waqar Siddhu

Which of the following statement(s) is/are true or false?

- 1) The turing machine is similar to a finite automaton but with an unlimited and unrestricted memory.
- 2) A Turing machine is a much more accurate model of a general purpose computer.

Answer (Please select your correct option)

VuAnswers.com

Statement 1 is true



Mentioned in lec 45

Statement 2 is true



Both are true..check link
in moazz file

Both statements (1 & 2) are false



Statement 2 is false



Made by: Waqar Siddhu

Question No : 29 of 52

Marks: 1 (Budgeted Time 1 Min)

Language of strings having even number of a's is considered to be:

Answer (Please select your correct option)

VuAnswers.com

Regular

Lec:3,page:9

Irrelgular

Irregular and infinite

Irregular and finite

Made by: Waqar Siddhu

If we have two transition graphs then their union will be expressed by:

Answer (Please select your correct option)

VuAnswers.com

Lec:24,page:65

- taking a common start state and joining them by two null transitions
- just connecting both start states by null transitions
- connecting final state of first TG to the initial state of second TG
- connecting the final state of first TG to the final state of second TG

Made by: Waqar Siddhu

Question No : 31 of 52

Marks: 1 (Budgeted Time 1 Min)

A language of strings of prime length is considered to be:

Answer (Please select your correct option)

VuAnswers.com

regular but infinite

regular

irregular **Lec:27,page:75**

regular but finite

Made by: Waqar Siddhu

Question No : 32 of 52

Marks: 1 (Budgeted Time 1 Min)

_____ and _____ are removed in order to make a CFG in Chomsky Normal Form (CNF).

Answer (Please select your correct option)

VuAnswers.com

Null, nullable productions

Nullable, unit productions

Null, unit productions

Lec:36,page:102

Strings of length 0, null

Made by: Waqar Siddhu

Question No : 33 of 52

Marks: 1 (Budgeted Time 1 Min)

The languages are supposed to be _____ in case of testing pumping lemma.

Answer (Please select your correct option)

VuAnswers.com

context free

irregular

both regular and irregular

regular

mentioned in video lec:27:P can check exm

Made by: Waqar Siddhu

Question No : 34 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following refers to an effectively solvable problem having answer in "Yes" or "No"?

Answer (Please select your correct option)

VuAnswers.com

Decision procedure

Lec:29,page:80

Logical problem

Analytical problem

Binary procedure

Made by: Waqar Siddhu

Question No : 35 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 0$

$Z \rightarrow 1$

Answer (Please select your correct option)

VuAnswers.com

110

11011

1101111

11101

Made by: Waqar Siddhu

Question No : 36 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 1$

$Z \rightarrow 0$

Answer (Please select your correct option)

VuAnswers.com

001

00010

0010000

00100

Made by: Waqar Siddhu

Which of the following is a regular Context Free Grammar:

Answer (Please select your correct option)

VuAnswers.com

$S \rightarrow abS \mid baS \mid \wedge$

$S \rightarrow aSb \mid baS \mid \wedge$

$S \rightarrow abS \mid bSa \mid \wedge$

$S \rightarrow aSb \mid Sa \mid \wedge$

Made by: Waqar Siddhu

Question No : 38 of 52

Marks: 1 (Budgeted Time 1 Min)

Concatenation of r1 and r2 will be shown as:

Answer (Please select your correct option)

VuAnswers.com

r1+r2

r2+r1

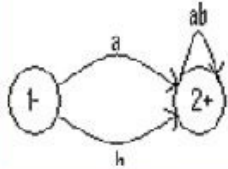
r2r1

r1r2

Lec:13,page:35

Made by: Waqar Siddhu

How many steps are required to convert the given transition graph into a regular expression?



Answer (Please select your correct option)

VuAnswers.com

1 step

2 steps firstly a & b combine to form a+b and in 2nd step loop of ab combine $(a+b)ab^*$

3 steps

4 steps

Made by: Waqar Siddhu

A nonterminal is said to be self-embedded, if in a given derivation of a word, it ever occurs as a tree _____ of itself.

Answer (Please select your correct option)

VuAnswers.com

ascendant

descendant

Lec:43,page:127

top

bottom

Made by: Waqar Siddhu

Question No : 40 of 52

Marks: 1 (Budgeted Time 1 Min)

_____ is always Deterministic.

Answer (Please select your correct option)

VuAnswers.com

Finite Automaton

lec:10,page:25

Transition Graph

Generalize Transition Graph

Non-deterministic finite automaton

Made by: Waqar Siddhu

Question No : 41 of 52

Marks: 2 (Budgeted Time 4 Min)

Write alternative form of this production.

$S \rightarrow aS, S \rightarrow bS, S \rightarrow \Lambda$

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

VuAnswers.com



$S \rightarrow aS|bS|\Lambda$

e:90

Made by: Waqar Siddhu

What are the uses of Push Down Automata (PDA) in computing?

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

VuAnswers.com



Normal Arial 12 B I U

PUSHDOWN STACK is a place where the input letters can be placed until these letters are referred again.

It can store as many letters as one can in a long column

Made by: Waqar Siddhu

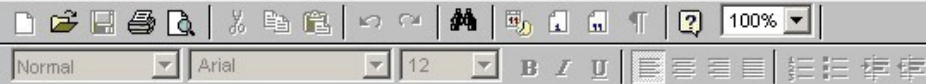
Question No : 43 of 52

Marks: 2 (Budgeted Time 4 Min)

What is meant by Row language?

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

VuAnswers.com



Lec:41,page:123

Made by: Waqar Siddhu

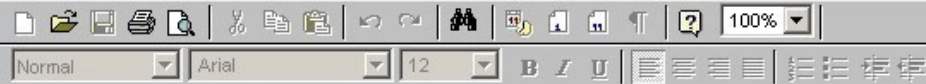
Question No : 44 of 52

Marks: 2 (Budgeted Time 4 Min)

Write down regular expression for a language L of strings defined over $\Sigma = \{a, b\}$ that neither ends in "a" nor with "b".

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

VuAnswers.com



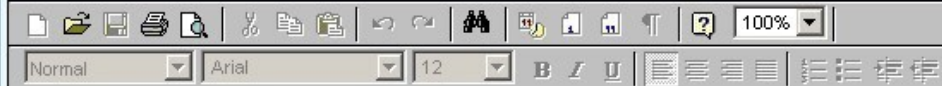
RE= ϵ (null)

Made by: Waqar Siddhu

What are the steps of Recursive Definition of Languages?

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

VuAnswers.com



Lec:3,page:9

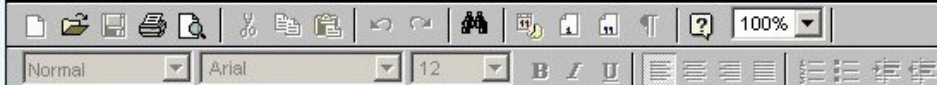
Made by: Waqar Siddhu

What does the following arbitrary summary table show?

FROM Where	TO Where	READ What	POP What	PUSH What	ROW Number
READ ₀	READ ₃	b	b	abb	11

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

VuAnswers.com



Lec:42,page:124

Made by: Waqar Siddhu

Question No : 47 of 52

Marks: 3 (Budgeted Time 6 Min)

Write down Context Free Grammar (CFG) for the language of strings expressed by the following regular expression:

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

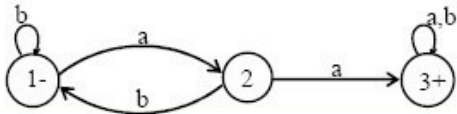
Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Let us consider the following Finite Automaton (FA):



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

VuAnswers.com



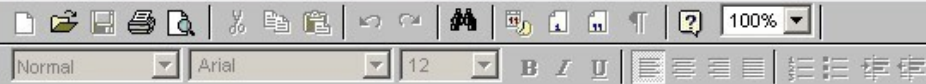
Lec:6,page:16

Made by: Waqar Siddhu

Write the CFG for EVEN-EVEN language?

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

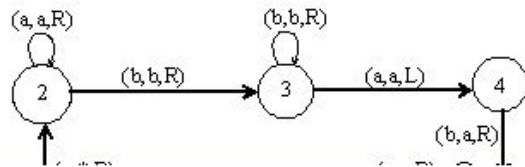
VuAnswers.com



Lec:32,page:90

Made by: Waqar Siddhu

Consider the following TM



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

VuAnswers.com



page 142

Made by: Waqar Siddhu

Using suitable examples, differentiate between Kleene star closure and plus operation?

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

VuAnswers.com



Lec:2,page:7

Made by: Waqar Siddhu

a. Construct Context Free Grammar (CFG) for the language defined by the regular expression:

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

b. Remove null productions from the CFG constructed in part i.

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

VuAnswers.com

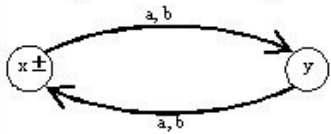


Made by: Waqar Siddhu

Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given FA can be represented by



Answer (Please select your correct option)

VuAnswers.com

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

Correct Answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

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

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

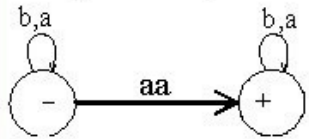
$(a + b)^*(a + b)^*$

Made by: Waqar Siddhu

Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given TG has _____ RE.



Answer (Please select your correct option)

VuAnswers.com

(b+a) (aa) (b+a)*

(a+b) (aa) (a+b)*

(a+b)* (aa) (a+b)*

(a+b)* (aa) (a+b)

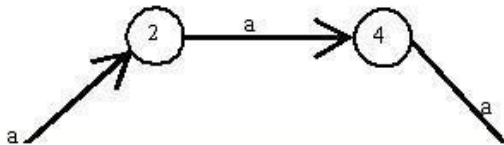
Correct Answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

Made by: Waqar Siddhu

Question No : 4 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given TG's are _____



Answer (Please select your correct option)

VuAnswers.com

non-symmetric

Equivalent

Non-equivalent

TG's are not valid

Correct Answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

Made by: Waqar Siddhu

Question No : 5 of 52

Marks: 1 (Budgeted Time 1 Min)

"One GTG can generate _____ language".

Answer (Please select your correct option)

VuAnswers.com

more than one



only one

Concept



only two



only three



Made by: Waqar Siddhu

Question No : 6 of 52

Marks: 1 (Budgeted Time 1 Min)

Even-palindrome is a _____ language

Answer (Please select your correct option)

VuAnswers.com

non-regular

Lec:25,page:71

Correct Answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

regular

regular but infinite

regular but finite

Made by: Waqar Siddhu

Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are two regular languages, then _____ is/are also regular.

Answer (Please select your correct option)

VuAnswers.com

Both $L_1 \cup L_2, L_1 \cap L_2$ lec 24, page 65 $L_1 + L_2 = L_1 \cup L_2$ and on page 67

$L_1 \cap L_2$

$L_1 \cup L_2$

$L_1 \cap L_2$

Made by: Waqar Siddhu

Question No : 8 of 52

Marks: 1 (Budgeted Time 1 Min)

If the FA has N states, then test the words of length less than N. If any one word is accepted by this FA, then it will accept ____ word.

Answer (Please select your correct option)

VuAnswers.com

All **Lec:30,page:85** concept

No

One

Two

Made by: Waqar Siddhu

Question No : 9 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are equivalent?

Answer (Please select your correct option)

VuAnswers.com

1(001)* and (10)*10

x(xx)* and (x)*x

concept

x⁺ and x*

x⁺ and x*x⁺

Made by: Waqar Siddhu

Question No : 10 of 52

Marks: 1 (Budgeted Time 1 Min)

An alphabet of Σ is valid if

Answer (Please select your correct option)

VuAnswers.com

No letter of Σ appears in middle of any other letter

No letter of Σ appears at end of any other letter

No letter of Σ appears at start of any other letter

No letter of Σ appears at end or middle of any other letter

Correct Answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

Made by: Waqar Siddhu

Question No : 11 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following pairs of regular expressions are not equivalent?

Answer (Please select your correct option)

VuAnswers.com

(ab)* and a*b*

x(xx)* and (xx)*x

x⁺ and x*x⁺

Concept

x(x)* and (x)*x

Made by: Waqar Siddhu

There exist _____ derivations of a certain word in ambiguous grammar.

Answer (Please select your correct option)

VuAnswers.com

more than one

Correct Answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

Exactly one

exactly two

no

Made by: Waqar Siddhu

Question No : 13 of 52

Marks: 1 (Budgeted Time 1 Min)

Regular languages are closed under _____

Answer (Please select your correct option)

VuAnswers.com

Union and Concatenation

Concept

Union and Division

Union and Exponent

Union and Factorial

Made by: Waqar Siddhu

Which one of the following statements is INCORRECT:

Lec:26,page:73

Answer (Please select your correct option)

VuAnswers.com

A language consisting of all strings over $\Sigma=\{a,b\}$ having equal number of a's and b's is a regular language

Correct Answer solved by hadi
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Cell : 03228043306

Every language that can be expressed by FA can also be expressed by RE

None of these

$(a+b)^*aa(a+b)^*$ generates Regular language.

Made by: Waqar Siddhu

Question No : 15 of 52

Marks: 1 (Budgeted Time 1 Min)

TM is more powerful than FSM because

Answer (Please select your correct option)

VuAnswers.com

- The tape movement is confined to one direction
- It has no finite state control
- It has the capability to remember arbitrary long sequences of input symbols
- The tape movement is confined to more than one directions

Made by: Waqar Siddhu

Question No : 16 of 52

Marks: 1 (Budgeted Time 1 Min)

CYK algorithm was invented by John Cocke and later was published by ____

lec:44,page:135

Answer (Please select your correct option)

VuAnswers.com

Talik Khon and Daniel H

Tandao Kasami and Daniel H

Tandao Dagger and Daniel H

Talik Khon

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Question No : 17 of 52

Marks: 1 (Budgeted Time 1 Min)

The process of finding the derivation of word generated by particular grammar is called _____

Lec:11,page:136

Answer (Please select your correct option)

VuAnswers.com

Processing

Parsing

Programming

Planing

Correct Answer solved by hadi
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Made by: Waqar Siddhu

Question No : 18 of 52

Marks: 1 (Budgeted Time 1 Min)

There are different parsing techniques, including _____

Answer (Please select your correct option)

VuAnswers.com

- Top down parsing
- Bottom up parsing
- Parsing technique for particular grammar of arithmetic expression
- All of these

Correct Answer solved by hadi
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Made by: Waqar Siddhu

Question No : 19 of 52

Marks: 1 (Budgeted Time 1 Min)

$\Sigma = \{a, Aa, Abb\}$, then string $aAaAbbAa$ has length equal to _____.

Answer (Please select your correct option)

VuAnswers.com

Three

Four

concept

One

Two

Made by: Waqar Siddhu

Question No : 20 of 52

Marks: 1 (Budgeted Time 1 Min)

The language generated by CFG is called _____.

Answer (Please select your correct option)

VuAnswers.com

Infinite

Context Free Language (CFL)

Correct Answer solved by hadi
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Cell : 03228043306

Regular

Finite

Made by: Waqar Siddhu

Question No : 21 of 52

Marks: 1 (Budgeted Time 1 Min)

In _____ there must be transition for all letters.

Answer (Please select your correct option)

VuAnswers.com

NFA

FA

TG

GTG

Correct Answer solved by hadi
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Made by: Waqar Siddhu



Answer (Please select your correct option)

VuAnswers.com

 $r_1^* r_2 r_3^*$
 $(r_1 r_2 r_3)^*$
 $r_1^* r_2^* r_3^*$
 None of the given incomplete Q..RE of ist is $r_2 r_3^* r_4$

Made by: Waqar Siddhu

Question No : 23 of 52

Marks: 1 (Budgeted Time 1 Min)

A regular language _____ .

Answer (Please select your correct option)

VuAnswers.com

Must be finite

Must be infinite

Can be finite or infinite

concept

Complex Language

Made by: Waqar Siddhu

Question No : 24 of 52

Marks: 1 (Budgeted Time 1 Min)

If a language can be expressed by a regular expression, then its complement is _____.

Lec:24,page:66

Answer (Please select your correct option)

VuAnswers.com

Regular

Correct Answer solved by hadi
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Cell : 03228043306

Non Regular

Finite

Infinite

Made by: Waqar Siddhu

Question No : 25 of 52

Marks: 1 (Budgeted Time 1 Min)

For every Context Free Grammar (CFG), we can make the corresponding _____.

Lec:39,page:111

Answer (Please select your correct option)

VuAnswers.com

FA

TG

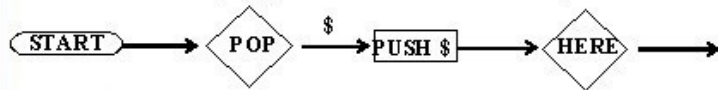
PDA

Regular Grammar

Correct Answer solved by hadi
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Cell : 03228043306

Made by: Waqar Siddhu

Look at the following diagram and select the correct option:



Lec:40,page:119

Answer (Please select your correct option)

VuAnswers.com

- The PDA must not begin with the sequence
- The PDA may begin with the sequence
- The PDA must begin with the sequence
- The PDA may not begin with the sequence

Correct Answer solved by hadi
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Cell : 03228043306

Made by: Waqar Siddhu

Consider the following Context Free Grammar (CFG) and select the correct choice

$S \rightarrow AB$

$A \rightarrow BSB \mid a \mid b$

$B \rightarrow CC$

$C \rightarrow SS \mid b \mid bb$

Answer (Please select your correct option)

VuAnswers.com

abb is a word in the corresponding CFL. concept

abb is not the word of corresponding CFL.

Any word can be accepted from the corresponding CFL.

b is a word in the corresponding CFL.

Made by: Waqar Siddhu

Which of the following statement(s) is/are true or false?

- 1) The turing machine is similar to a finite automaton but with an unlimited and unrestricted memory.
- 2) A Turing machine is a much more accurate model of a general purpose computer.

Answer (Please select your correct option)

VuAnswers.com

Statement 1 is true

Mentioned in lec 45

Statement 2 is true

Both are true..check link
in moazz file

Both statements (1 & 2) are false

Statement 2 is false

Made by: Waqar Siddhu

Question No : 29 of 52

Marks: 1 (Budgeted Time 1 Min)

Language of strings having even number of a's is considered to be:

Lec:3,page:9

Answer (Please select your correct option)

VuAnswers.com

Regular

Correct Answer solved by hadi
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Cell : 03228043306

Irrelgular

Irregular and infinite

Irregular and finite

Made by: Waqar Siddhu

If we have two transition graphs then their union will be expressed by:

Lec:24,page:65

Answer (Please select your correct option)

VuAnswers.com

taking a common start state and joining them by two null transitions

Correct Answer solved by hadi
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Cell : 03228043306

just connecting both start states by null transitions

connecting final state of first TG to the initial state of second TG

connecting the final state of first TG to the final state of second TG

Made by: Waqar Siddhu

Question No : 31 of 52

Marks: 1 (Budgeted Time 1 Min)

A language of strings of prime length is considered to be:

Lec:27,page:75

Answer (Please select your correct option)

VuAnswers.com

regular but infinite

regular

irregular

regular but finite

Correct Answer solved by hadi
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Made by: Waqar Siddhu

Question No : 32 of 52

Marks: 1 (Budgeted Time 1 Min)

_____ and _____ are removed in order to make a CFG in Chomsky Normal Form (CNF).

Lec:36,page:102

Answer (Please select your correct option)

VuAnswers.com

Null, nullable productions

Nullable, unit productions

Null, unit productions

Strings of length 0, null

Correct Answer solved by hadi
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Made by: Waqar Siddhu

Question No : 33 of 52

Marks: 1 (Budgeted Time 1 Min)

The languages are supposed to be _____ in case of testing pumping lemma.

Answer (Please select your correct option)

VuAnswers.com

context free

irregular

both regular and irregular

regular

mentioned in video lec:27:P can check exm

Made by: Waqar Siddhu

Question No : 34 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following refers to an effectively solvable problem having answer in "Yes" or "No"?

Lec:29,page:80

Answer (Please select your correct option)

VuAnswers.com

Decision procedure

Correct Answer solved by hadi
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Logical problem

Analytical problem

Binary procedure

Made by: Waqar Siddhu

Question No : 35 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 0$

$Z \rightarrow 1$

Answer (Please select your correct option)

VuAnswers.com

110

Correct Answer solved by hadi
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Cell : 03228043306

11011

1101111

11101

Made by: Waqar Siddhu

Question No : 36 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the following Context Free Grammar (CFG):

$S \rightarrow SX|XY$

$X \rightarrow ZZ$

$Y \rightarrow 1$

$Z \rightarrow 0$

Answer (Please select your correct option)

VuAnswers.com

001

Correct Answer solved by hadi
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Cell : 03228043306

00010

0010000

00100

Made by: Waqar Siddhu

Question No : 37 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following is a regular Context Free Grammar:

Answer (Please select your correct option)

VuAnswers.com

$S \rightarrow abS \mid baS \mid \wedge$

Correct Answer solved by hadi
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Cell : 03228043306

$S \rightarrow aSb \mid baS \mid \wedge$

$S \rightarrow abS \mid bSa \mid \wedge$

$S \rightarrow aSb \mid Sa \mid \wedge$

Made by: Waqar Siddhu

Question No : 38 of 52

Marks: 1 (Budgeted Time 1 Min)

Concatenation of r1 and r2 will be shown as:

Lec:13,page:35

Answer (Please select your correct option)

VuAnswers.com

r1+r2

r2+r1

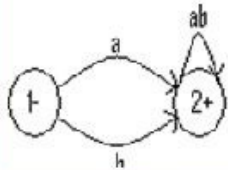
r2r1

r1r2

Correct Answer solved by hadi
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Made by: Waqar Siddhu

How many steps are required to convert the given transition graph into a regular expression?



Answer (Please select your correct option)

VuAnswers.com

1 step

2 steps firstly a & b combine to form a+b and in 2nd step loop of ab combine $(a+b)ab^*$

3 steps

4 steps

Made by: Waqar Siddhu

A nonterminal is said to be self-embedded, if in a given derivation of a word, it ever occurs as a tree _____ of itself.

Answer (Please select your correct option)

VuAnswers.com

ascendant

descendant

top

bottom

Correct Answer solved by hadi
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Made by: Waqar Siddhu

Question No : 40 of 52

Marks: 1 (Budgeted Time 1 Min)

_____ is always Deterministic.

Answer (Please select your correct option)

VuAnswers.com

Finite Automaton

Correct Answer solved by hadi
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Transition Graph

Generalize Transition Graph

Non-deterministic finite automaton

Made by: Waqar Siddhu

Question No : 41 of 52

Marks: 2 (Budgeted Time 4 Min)

Write alternative form of this production.

$S \rightarrow aS, S \rightarrow bS, S \rightarrow \Lambda$

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

VuAnswers.com



$S \rightarrow aS|bS|\Lambda$

e:90

Made by: Waqar Siddhu

What are the uses of Push Down Automata (PDA) in computing?

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

VuAnswers.com



Normal Arial 12 B I U

PUSHDOWN STACK is a place where the input letters can be placed until these letters are referred again.

It can store as many letters as one can in a long column

Made by: Waqar Siddhu

Question No : 43 of 52

Marks: 2 (Budgeted Time 4 Min)

What is meant by Row language?

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

VuAnswers.com



Lec:41,page:123

Made by: Waqar Siddhu

Question No : 44 of 52

Marks: 2 (Budgeted Time 4 Min)

Write down regular expression for a language L of strings defined over $\Sigma = \{a, b\}$ that neither ends in "a" nor with "b".

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

VuAnswers.com



RE= ϵ (null)

Made by: Waqar Siddhu

What are the steps of Recursive Definition of Languages?

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

VuAnswers.com



Lec:3,page:9

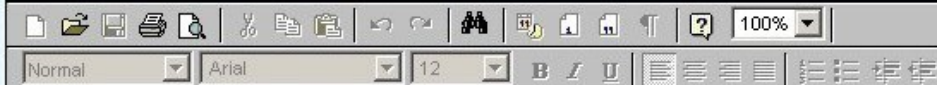
Made by: Waqar Siddhu

What does the following arbitrary summary table show?

FROM Where	TO Where	READ What	POP What	PUSH What	ROW Number
READ ₀	READ ₃	b	b	abb	11

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

VuAnswers.com



Lec:42,page:124

Made by: Waqar Siddhu

Question No : 47 of 52

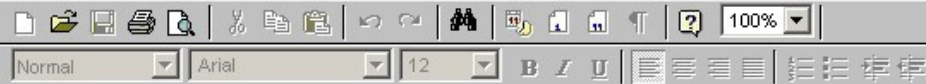
Marks: 3 (Budgeted Time 6 Min)

Write down Context Free Grammar (CFG) for the language of strings expressed by the following regular expression:

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

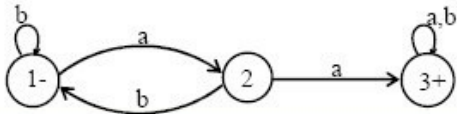
Answer ([Please click here to Add Answer](#))

VuAnswers.com



Made by: Waqar Siddhu

Let us consider the following Finite Automaton (FA):



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

VuAnswers.com



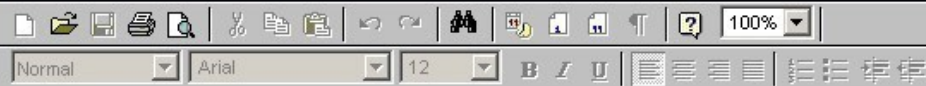
Lec:6,page:16

Made by: Waqar Siddhu

Write the CFG for EVEN-EVEN language?

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

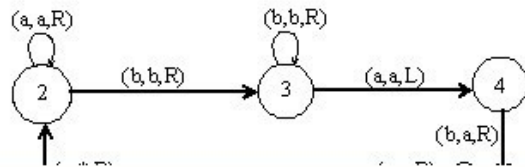
VuAnswers.com



Lec:32,page:90

Made by: Waqar Siddhu

Consider the following TM



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

VuAnswers.com



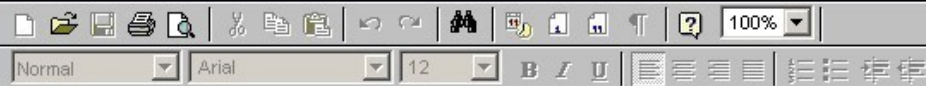
page 142

Made by: Waqar Siddhu

Using suitable examples, differentiate between Kleene star closure and plus operation?

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

VuAnswers.com



Lec:2,page:7

Made by: Waqar Siddhu

a. Construct Context Free Grammar (CFG) for the language defined by the regular expression:

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

b. Remove null productions from the CFG constructed in part i.

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

VuAnswers.com



Made by: Waqar Siddhu

Question No : 1 of 52

Marks: 1 (Budgeted Time 1 Min)

Which statement is true?

Answer (Please select your correct option)

VuAnswers.com

All words are strings

Correct Answer solved by hadi
email : usmanraj20@gmail.com
Cell : 03228043306

All strings are words

Both are always same

All letter are string

Made by: Waqar Siddhu

Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

If L_1 and L_2 are expressed by r_1 and r_2 , respectively then the language expressed by $(r_1)(r_2)$ will be _____

Answer (Please select your correct option)

VuAnswers.com

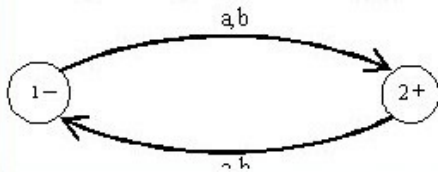
- Regular
- Ir-regular
- Undermined
- Such language does not exist

Made by: Waqar Siddhu

Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

Below given FA generates the language having strings of _____



Answer (Please select your correct option)

VuAnswers.com

ODD length conceptual RE=(a+b)((a+b)(a+b))*

Correct Answer solved by hadi
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EVEN length

Equal number of a's and b's

Odd number of a's and b's

Made by: Waqar Siddhu

Question No : 4 of 52

Marks: 1 (Budgeted Time 1 Min)

If an FA accepts no string, then language is denoted by _____

Answer (Please select your correct option)

VuAnswers.com

- $\{\}$
- \emptyset
- Both $\{\}$ and \emptyset
- Null

Correct Answer solved by hadi
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Made by: Waqar Siddhu

Question No : 5 of 52

Marks: 1 (Budgeted Time 1 Min)

Using tree structure, initial state can be represented by_____

Answer (Please select your correct option)

VuAnswers.com

An arrow for J.C.Martin tree structure lec:7,page:18

+

- for simple tree structure lec:7,page:17

*

Made by: Waqar Siddhu