

Learning4help by Waqas

Asslam-o-Alaikum! In this file we'll provide you **CS402 quiz 4 2023 Important Finalterm MCQs. Must Prepare Before Finalterm Exams.** Verify Answers yourself too. If you found mistake then inform me.

If you found mistake then let us know.

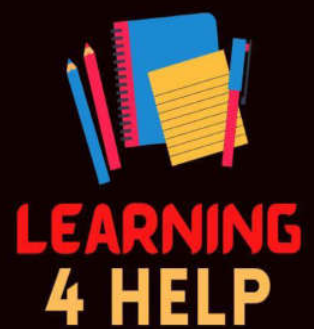
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To examine whether a certain FA accepts any words, it is required to seek the paths _____ state.

Select the correct option

☐ from final to back final

☒ from initial to final

☐ from initial to initial back

Question # 10 of 10 (Start time: 10:46:38 PM, 21 July 2023)

Total Marks: 1

The product of two regular languages is _____

Select the correct option

☒ regular

☐ infinite

☐ closure of a regular language

☐ non-regular

Question # 7 of 10 (Start time: 10:44:46 PM, 21 July 2023) Total Marks: 1

If R is regular language and Q is any language (regular/ non-regular), then Pref(_____ in _____) is regular.

Select the correct option

- ☐ R,Q
- ☒ Q,R
- ☐ R,R
- ☐ Q,Q

The CFG $S \rightarrow aSa \mid bSb \mid a \mid b \mid \Lambda$ represents _____ language.

Select the correct option

- ☒ PALINDROME
- ☐ ODD-ODD
- ☐ EVEN-EVEN
- ☐ EQUAL

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In a CFG the non-terminal that occurs first from the left in the working string, is said to be -----.

Select the correct option

- ☐ Least Significant nonterminal
- ☐ Most Significant nonterminal
- ☒ Left most nonterminal
- ☐ Left most derivate

In $\text{pref}(Q \text{ in } R)$, Q is ----- to/than R .

Select the correct option

- ☐ Greater
- ☐ Smaller
- ☒ Not equal
- ☐ Equal

Question # 1 of 10 (Start time: 10:39:04 PM, 21 July 2023) Total Marks: 1

A problem is said to be _____ if there exists an algorithm that provides the solution in _____ number of steps.

Select the correct option

- ☐ effectively unsolvable, infinite
- ☐ effectively unsolvable, finite
- ☐ effectively solvable, infinite
- ☒ effectively solvable, finite

Question # 2 of 10 (Start time: 10:39:04 PM, 21 July 2023) Total Marks: 1

If L_1 and L_2 are two regular languages, then they _____ expressed by FAs.

Select the correct option

- ☐ cannot be
- ☐ may or may not be
- ☒ can be
- ☐ May be

Question # 10 of 10 (Start time: 09:59:22 PM, 21 July 2023) Total Marks: 1

Using Myhill Nerode theorem we partition sigma star into distinct _____.

Select the correct option

- ☐ objects
- ☐ templates
- ☒ classes
- ☐ instances

Null production is a _____.

Select the correct option

- ☒ All of the given options
- ☐ Word
- ☐ String
- ☐ Terminal

Question # 5 of 10 (Start time: 09:55:01 PM, 21 July 2023) Total Marks: 1

The tree which produces all the strings of a language is called _____.

Select the correct option

- ☐ Non ambiguous tree
- ☒ Derivation tree
- ☐ Ambiguous tree

Question # 6 of 10 (Start time: 09:55:01 PM, 21 July 2023) Total Marks: 1

If an FA has N states then it must accept the word of length _____.

Select the correct option

- ☒ N
- ☐ N-1
- ☐ 2N
- ☐ N+1

Question # 1 of 10 (Start time: 09:51:19 PM, 21 July 2023) Total Marks: 1

The unit production is _____.

Select the correct option

- ☐ Non terminal --> Terminal
- ☒ Non terminal --> Non Terminal
- ☐ Terminal --> Non Terminal

If a language is regular it must generate _____ number of distinct classes.

Select the correct option

- ☐ three
- ☐ two
- ☒ finite
- ☐ infinite

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Question 10 (10 Marks)

If an effectively solvable problem has answer in YES or NO, then the solution is called _____.

Select the correct option

- ☐ optimal procedure
- ☒ decision procedure
- ☐ finite solution
- ☐ infinite problem

Question 11 (10 Marks)

If an effectively solvable problem has answer in YES or NO, then the solution is called _____.

Select the correct option

- ☐ optimal procedure
- ☒ decision procedure
- ☐ finite solution
- ☐ infinite problem

Question # 8 of 10 (Start time: 04:11:55 PM, 21 July 2023) Total Marks: 1

Incase of Myhill Nerode theorem, if a language L partitions sigma star into distinct classes and L is also regular then L generates _____ number of classes.

Select the correct option

- ☒ finite
- ☐ infinite
- ☐ odd
- ☐ specified

Question # 9 of 10 (Start time: 04:11:55 PM, 21 July 2023) Total Marks: 1

The grammatical rules which involve meaning of words are called _____

Select the correct option

- ☐ strings
- ☒ semantics
- ☐ alphabets
- ☐ syntactics

Question # 6 of 10 (Start time: 04:10:06 PM, 21 July 2023) Total Marks: 1

In CFG, symbols that cannot be replaced by anything are called _____

Select the correct option

- ☒ terminals
- ☐ productions
- ☐ null productions
- ☐ non-terminals

The CFG that generates the regular language is called _____

Select the correct option

- ☐ finite automata
- ☒ regular grammar
- ☐ non-regular grammar
- ☐ regular expression

Consider the CFG given below:

$S \rightarrow A|bb$
 $A \rightarrow B|b$
 $B \rightarrow S|a$

Which of the following is a unit production?

Select the correct option

- ☐ $B \rightarrow a$
- ☐ $S \rightarrow bb$
- ☒ $A \rightarrow B$
- ☐ $A \rightarrow b$

Question # 3 of 10 (Start time: 04:06:36 PM, 21 July 2023) Total Marks: 1

To write the expression from the tree, it is required to traverse from _____

Select the correct option

- ☐ Bottom to top of the tree
- ☒ Left side of the tree
- ☐ Right side of the tree
- ☐ Top to bottom of the tree

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If a language generates finite number of distinct classes then it must be _____.

Select the correct option

- ☐ both regular and context free
- ☒ regular
- ☐ context free
- ☐ non-regular

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Question # 1 of 10 (Start time: 04:03:35 PM, 21 July 2023) Total Marks: 1

Consider the Following CFG: (NOTE: ^ means NULL)
 $S \rightarrow Xa$
 $X \rightarrow aX|bX|^\wedge$
Above given CFG can be represented by RE _____.

Select the correct option

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

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