

السلام عليكم الله ورحمته وبركاته

الله " وَتُعْزَمُ مَنْ تَشَاءُ وَتُذَلُّ مَنْ تَشَاءُ

الله "جسے جاہے عزت دے اور جسے جاہے ذلیل کرے"

**JUST PRAY FOR ME**

**REGARD : RIZWAN MANZOOR**



**Cs-402 Important Mcq's For Final Term:**

**Solve By Vu\_Toper-RM**

**All Paid Services Is Available !!**

**VU**

**LMS Handling + Notes+**

**Online Classes + Project**

**Nothing Is Impossible** >> **03224021365**

If the intersection of two regular languages is regular then the complement of the intersection of these two languages is \_\_\_\_\_.

**Regular**

The language of all strings partition  $\Sigma^*$  into \_\_\_\_\_ class(es).

**Two**

The language of all strings not beginning with 'b' partitions  $\Sigma^*$  into \_\_\_\_\_ distinct classes.

Two

If  $Q = \{xx, xyxxxxy\}$ , and  $R = \{xyxyxyxxxxy, xyxyyyyxx\}$  then  $\text{Pref}(Q \text{ in } R) = \underline{\hspace{2cm}}$

xyxyyy

A language ending with 'b' partitions  $\Sigma^*$  into \_\_\_\_\_ distinct classes.

Three

If  $R$  is regular language and  $Q$  is any language (regular/ non-regular), then  $\text{Pref}(\underline{\hspace{1cm}} \text{ in } \underline{\hspace{1cm}})$  is regular.

Q, R

The reverse of the string sbfsbb over  $\{sb, f, b\}$

Sb, f, sb, b

Bsbfsb

The basic approach of Mayhill Erode theorem is similar to the concept of:

concatenation of FAs

If there is no final state of two FAs then their \_\_\_\_\_ also have no \_\_\_\_\_ state

union, final

If an FA has  $N$  states, then it must accept the word of length

$N-1$

For a machine with N number of sta., the total number of strings to be tested, defined over an alphabet of m letters, is

$m^N + m^{N+1} + m^{N-2} + m^{2N-1}$

Which of the following is not a true theorem?

Pseudo theorem

The language "PRIME" is an example of language.

non regular

The product of two regular languages is

Regular

One language can have \_\_\_\_\_ CFG(s).

More than one

Which of the following is a non-regular language?

Prime

If the FA has N states. then test the words of length less than N. If no word is accepted by this FA. then it will \_\_\_\_\_ word/words.

accept no

In large FA with thousands of states and millions of directed edges, without an effective procedure it is \_\_\_\_\_ to find a path from initial to final state.

Impossible

A problem that has decision procedure is called problem.

Decidable problem

Which one of the following languages is a non-regular language?

**Palindrome**

Using Myhill Nerode theorem we partition  $\Sigma^*$  into distinct

**Classes**

In pumping lemma theorem  $(x y^n z)$  the range of  $n$  is

**$n=1, 2, 3, 4, \dots$**

The values of input (say  $a$  &  $b$ ) do not remain same in one cycle due to

**NOT gate**

The operators like  $(\cdot, +)$  in the parse tree are considered as

**Terminals**

Even-Even language partitions  $\Sigma^*$  into \_\_\_\_\_ distinct classes.

**Four**

The strings or words which do not belong to a language are called \_\_\_\_\_ of that language.

**Complement**

The production  $S \rightarrow SS$  can be expressed by Regular expression

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

if  $L_1$  and  $L_2$  are two regular languages. then they expressed by FAs.

**can be**

The grammatical rules which involve meaning of words are called

**Semantics**

Set of all palindromes over (a, b) is:

**Regular and finite**

The language of all strings not beginning with partitions "b" into distinct classes.

**Two**

The CFG is said to be ambiguous if there exist at least one word of its language that can be generated by production trees.

**More than one**

The CFG  $S \rightarrow aSb \mid ab^l$  is used to express the language

**Palindrome**

A non-regular language can be represented by

**None of the given options**

In large FA with thousands of states and millions of directed edges, without an effective procedure it is \_\_\_\_\_ to find a path from initial to final state.

**Impossible**

In polish notation, (o-o-o) is the abbreviation of \_\_\_\_\_.

**Operator - Operand – Operand**

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

**finite**

If L1 and L2 are regular languages then which statement is NOT true?

**L1/L2 is always regular**

If the FA has N states, then test the words of length less than N. If no word is accepted by this FA, then it will \_\_\_\_\_ word/words.

accept no

A problem that has decision procedure is called \_\_\_\_\_ problem.

decidable

Prime is a \_\_\_\_\_ language.

non-regular

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

decision procedure

To write the expression from the tree, it is required to traverse from \_\_\_\_\_.

Left side of the tree

If there is no final state of two FAs then their \_\_\_\_\_ also have

no \_\_\_\_\_ state

union, final

Finite Automaton (FA) must have \_\_\_\_\_ number of states while a language has \_\_\_\_\_ words.

finite, infinite

The language "PRIME" is an example of \_\_\_\_\_ language.

non regular

Even-Even language partitions  $\Sigma^*$  into

\_\_\_\_\_ distinct classes.

four

What will be the 9's complement of the number 872?

127

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

Not equal

There is at least one production in CFG that has one \_\_\_\_\_ on its left side.

Non terminal

In pumping lemma theorem  $(x \text{ y}^n \text{ z})$  the

range of n is

$n=1, 2, 3, 4, \dots$

A language ending with 'b' partitions  $\Sigma^*$  into \_\_\_\_\_ distinct classes.

three

The operators like  $(*, +)$  in the parse tree are considered as \_\_\_\_\_.

terminals

For a machine with N number of states, the total number of strings to be tested, defined over an alphabet of m letters, is \_\_\_\_\_.

$m^N + m^{N+1} + m^{N+2} + \dots + m^{2N-1}$

In a CFG, the non-terminals are denoted by \_\_\_\_\_.

**Capital letters**

Which of the following is pumped to generate further strings in the definition of Pumping Lemma?

**y**

The complement of a regular language is also \_\_\_\_\_.

**regular**

Which of the following is a non-regular language?

**Language of strings ending in abba**

Tape and Stack alphabets

**must be different**

Choice of path can be determined by left most derivation of the string belonging to CFL at..... state

**ACCEPT**

If there is no final state of two FAs then their \_\_\_\_\_ also have no \_\_\_\_\_ state

**union, final**

In polish notation, (o-o-o) is the abbreviation of.....? **Operator -Operand – Operand**

If new  $A = 1 \text{ NAND } (1 \text{ AND } 1)$ , then what will be the value of new A?

**1**

If the intersection of two regular languages is regular then the complement of the intersection of these two languages is \_\_\_\_\_.

**Regular**

Which of the following is not a true theorem?

## Pseudo theorem

If the FA has  $N$  states. then test the words of length less than  $N$ . If no word is accepted by this FA. then it will \_\_\_\_\_ word/words.

accept no

In large FA with thousands of states and millions of directed edges, without an effective procedure it is \_\_\_\_\_ to find a path from initial to final state.

## Impossible

A problem that has decision procedure is called problem.

## Decidable problem

The grammatical rules which involve meaning of words are called

## Semantics

In polish notation, (o-o-o) is the abbreviation of \_\_\_\_\_.

## Operator - Operand – Operand

If  $L_1$  and  $L_2$  are regular languages then which statement is NOT true?

## $L_1/L_2$ is always regular

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

## decision procedure

To write the expression from the tree, it is required to traverse from \_\_\_\_\_.

Left side of the tree

What will be the 9's complement of the number 872?

127

There is at least one production in CFG that has one \_\_\_\_\_ on its left side.

Non terminal

In a CFG, the non-terminals are denoted by \_\_\_\_\_.

Capital letters

For a given input, it provides the compliment of Boolean AND output.

NAND box (NOT AND)

DELAY box

OR box

AND box

For the given input, AND box provides the Boolean AND output.

True

False

The current in the wire is indicated by 1 and 0 indicates the absence of the current.

True

False

Any language that cannot be expressed by a RE is said to be regular language.

True

False

If L1 and L2 are regular languages is/are also regular language(s).

L1 + L2

L1L2

L1

All of above

Let L be a language defined over an alphabet  $\Sigma$ , then the language of strings, defined over  $\Sigma$ , not belonging to L, is called Complement of the language L, denoted by  $L^c$  or  $L'$ .

True False

To describe the complement of a language, it is very important to describe the ----- of that language over which the language is defined.

Alphabet

Regular Expression

String

Word

For a certain language L, the complement of  $L^c$  is the given language L  
*i.e.*  $(L^c)^c = L$  True

False

If L is a regular language, then, ----- is also a regular language. Lm

Ls

Lx

Lc

De-Morgan's law for sets is expressed by,

$$\begin{aligned}(L_1^c \cap L_2^c)^c &= L_1 \cup L_2 \\(L_1^c \cup L_2^c)^c &= L_1 \cap L_2 \\(L_1 \cap L_2)^c &= L_1^c \cup L_2^c \\(L_1 \cup L_2)^c &= L_1^c \cap L_2^c\end{aligned}$$

----- is obviously infinite language.

EQUAL-EQUAL

EVEN-EVEN

**PALINDROME**

FACTORIAL

If, two strings  $x$  and  $y$ , defined over  $\Sigma$ , are run over an FA accepting the language  $L$ , then  $x$  and  $y$  are said to belong to the same class if they end in the same state, no matter that state is final or not.

**True**

False

The language  $Q$  is said to be quotient of two regular languages  $P$  and  $R$ , denoted by--- if  $PQ=R$ .       $R=Q/P$

**$Q=R/P$**

$Q=P/R$

$P=R/Q$

If  $R$  is regular language and  $Q$  is any language (regular/ non regular), then  $\text{Pref}(Q \text{ in } R)$  is -----.

Non-regular

Equal

**Regular**

Infinite

"CFG" stands for \_\_\_\_\_

Context Free Graph

**Context Free Grammar**

Context Finite Graph

Context Finite Grammar

(29) The part of an FA, where the input string is placed before it is run, is called \_\_\_\_\_

State

Transition

**Input Tape**

Output Tape

In new format of an FA (discussed in lecture 37), This state is like dead-end non final state

ACCEPT

REJECT

STATR

READ

For language L defined over {a, b}, then L partitions {a, b} into ..... classes

Infinite

Finite

Distinct

Non-distinct

The major problem in the earliest computers was

To store the contents in the registers

To display mathematical formulae

To load the contents from the registers

To calculate the mathematical formula

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

Final to initial

Final to final

Initial to final

Initial to initial

The high-level language is converted into assembly language codes by a program called compiler.

TRUE

FALSE

Grammatical rules which do not involve the meaning of words are called -----

Semantics

**Syntactic**

Both a and b

None of given

The symbols that can't be replaced by anything are called ---  
----- Productions

**Terminals**

Non-terminals

All of above

The symbols that must be replaced by other things are called

\_\_\_\_\_

Productions

Terminals

**Non-terminals**

None of given

The grammatical rules are often called \_\_\_\_\_

**Productions**

Terminals

Non-terminals

None of given

The language generated by \_\_\_\_\_ is called Context Free Language (CFL).

FA

TG

**CFG**

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

**Terminals**

Non terminals

The locations into which we put the input letters on "Input Tap" are called \_\_\_\_\_

**cells**

If an effectively solvable problem has answered in yes or no, then this solution is called -----

**Decision procedure**

The CFG which generates the regular language is called:

**Regular grammar**

We cannot write regular expressions for all \_\_\_\_\_.

**CFG's**

Identify the TRUE statement about following CFG:  $S \rightarrow SB|AB$   $A \rightarrow CC$   $B \rightarrow b$   $C \rightarrow a$

The given CFG has 8 Terminals

**The given CFG is in CNF**

If a CFG has only productions of the form nonterminal  $\rightarrow$  string of two nonterminal or nonterminal  $\rightarrow$  one terminal then the CFG is said to be in PDA form

**Chomsky Normal Form (CNF)**

NULL able form

Unit production form

The structure given below is called \_\_\_\_\_  $S \rightarrow aaBm$   $A \rightarrow Asia$   $B \rightarrow sub$

RE

TG

**CFG**

PDA

Which of the following states is not part of PDA?

START

ACCEPT

**WRITTE**

REJECT

Every Regular Expression be expressed by CFG and every CFG can be expressed by a Regular Expression

Every regular expression can be expressed as CFG but every CFG

cannot be expressed as a regular expression.

For a PDA, there exists a CFG, that represents the same language as represented by PDA.

**None of the given options**

The PDA is called non-deterministic PDA when there are more than one out going edges from..... state

START or READ

POP or REJECT

**READ or POP**

PUSH or POP

Null production is a

Word

String

Terminal

**All of the given options**

In nondeterministic PDA a string is supposed to be accepted, if there exists at least one path traced by the string, leading to state.

**ACCEPT**

REJECT

START

READ

The CFG which generates the regular language is called  
Regular expression

Finite Automata

**Regular grammar**

None of the given options

PDA stands for \_\_\_\_\_

Push and Drop Automaton

Pop and Drop Automaton

**Push Down Automaton**

None of given options

If a CFG has a null production, then it is possible to construct another CFG accepting the same language without null production

**TRUE**

FALSE

Halt states are

Start and accept

**Accept and Reject**

Start and Reject

Read and Reject

The production of the form: Nonterminal  $\rightarrow \Lambda$  is said to be \_\_\_\_\_ production

**NULL**

UNIT

$[(a + b)(a + b)]^*$ , given RE cannot generate the string \_\_\_\_\_

abbaabab

abbbba

**bbbbbb**

abbbbaaaa

In an FA, when there is no path starting from initial state and ending in final state then that FA

accept null string

accept all strings

accept all non-empty strings

**does not accept any string**

While finding RE corresponding to TG, we connect the new start state to the old start state by the transition labeled by

a

b

**null string**

None of the given options

According to theory of automata there are \_\_\_\_\_ types of languages

- One
- Two**
- Three
- Four

While finding RE corresponding to TG, If TG has more than one final state then

**Introduce the new final state**

Eliminate the old final state

Replace the old final state with start state

Replace the old final state with new start state

The states in which there is no way to leave after entry are called  
Select correct option:

Davey John Lockers

Dead States

Waste Baskets

**All of the given options**

What is false about the term alphabet?

It is a finite set of symbols.

It is usually denoted by Greek letter sigma

**It can be an empty set.**

Strings are made up of its element

A PDA consists of the following:

An alphabet (Sigma) of input letters.

An input TAPE with infinite many locations in one direction

**All of the given options,**

A \_\_\_\_\_ operator adds a new letter at the top of STACK

**PUSH**

The production of the form: nonterminal  $\rightarrow$  one nonterminal is called the \_\_\_\_\_

Select correct option:

**Unit production**

NULL production

Terminal production

Non-Terminal production

A \_\_\_\_\_ is the one for which every input string has a unique path through the machine.

Select correct option:

Deterministic PDA

nondeterministic PDA

PUSHDOWN store

**Input Tape**

In the null production  $N \rightarrow \Lambda$ , N is a

Select correct option:

Terminal

**Non terminal**

The major problem in the earliest computers was Select correct option:

To store the contents in the registers

**To display mathematical formulae**

To load the contents from the registers

To calculate the mathematical formula

In polish notation, (o-o-o) is the abbreviation of.....?

Select correct option:

Operand - Operator – Operand

Operand - Operand- Operator

**Operator -Operand – Operand**

Operand -Operand – Operand

The input string is placed, before it runs, in

Select correct option:

Stack

Memory

**Tape**

Ram

"CFG" stands for \_\_\_\_\_

Select correct option:

Context Free Graph

**Context Free Grammer**

Context Finite Graph

Context Finite Grammer

In a CFG the nonterminal that occurs first from the left in the working string, is said to be \_\_\_\_\_

Select correct option:

Least Significant nonterminal

Most Significant nonterminal

**Left most nonterminal**

Left most derivate

The unit production is

Select correct option:

Terminal --> Terminal

**Terminal --> non-Terminal**

Non terminal --> Terminal

Non terminal --> non-Terminal