

Question # 9 of 10 (Start time: 06:09:18 AM, 05 August 2021)

Even-Even language partitions Σ^* into _____ distinct classes.

Select the correct option

☐ two

☐ five

☐ three

☒ four

Set of all palindromes over $\{a,b\}$ is:

Select the correct option

☐	Regular and infinite
☐	Regular
☐	Regular and finite
☒	Non-regular

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

Select the correct option

☒ regular

☐ context free

☐ non-regular

☐ both regular and context free

Using Myhill Nerode theorem we partition sigma star into distinct _____

Select the correct option

☒	classes
☐	instances
☐	templates
☐	objects

If new A = 1 NAND (1 AND 1), then what will be the value of new A?

Select the correct option

- | | |
|----------------------------------|----|
| ☐ | 10 |
| ☒ | 0 |
| ☐ | 1 |
| ☐ | 01 |

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

Select the correct option

☐	Start and end with same letter
☒	Palindrome
☐	Containing double a
☐	Even-even

A non regular language can be represented by

Select the correct option

☒	None of the given options
☐	FA
☐	TG
☐	RE

Question # 4 of 10 (Start time: 12:57:50 PM, 05 August 2021)

If $Q = \{xx, xyxyxy\}$, and $R = \{xyxyxyxyxy, xyxyxyxy\}$ then $\text{Pref}(Q \text{ in } R) =$ _____

Select the correct option

☐ $xyxyxy$

☒ $xyxyxy$

☐ xy

☐ xx

For a non-regular language, there exists _____ FA.

Select the correct option

☐	at least one
☐	at most one
☒	no
☐	one

Question 1

Which of the following is not a true theorem?

Select the correct option



Decidability theorem



Pseudo theorem



Myhill Nerode theorem



Equivalency theorem

Question # 4 of 10 (Start time: 12:54:46 PM, 05 August 2021)

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

Select the correct option

☐	Null production
☐	Terminal
☐	Unit production
☒	Non terminal

Question # 10 of 10 (Start time: 12:53:47 PM, 05 August 2021)

The grammatical rules which involve meaning of words are called _____.

Select the correct option



semantics



syntactics



strings



alphabets

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

Select the correct option

☐	Containing double a
☐	Even-even
☐	Start and end with same letter
☐	Palindrome

Question # 8 of 10 (Start time: 12:59:56 PM, 05 August 2021)

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

Select the correct option



L_1/L_2 is always regular



L_1^* is always regular



$L_1 + L_2$ is always regular



$L_1 L_2$ is always regular

Prime is a _____ language.

Select the correct option

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

Which of the following cannot be represented by a regular expression?

Select the correct option

- | | |
|-----------------------|-----------------------------------|
| ☐ | String of 0's with an odd length |
| ☐ | Language of even-even |
| ☐ | String of 0's with a prime length |
| ☐ | Language of odd-odd |

Question # 9 of 10 (Start time: 12:52:30 PM, 05 August 2021)

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

Select the correct option

☐	R, R
☐	R, Q
☐	Q, Q
☒	Q, R

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

Select the correct option



decision procedure



finite solution



infinite problem

optimal procedure

Question # 8 of 10 (Start time: 06:50:29 PM, 05 August 2021)

Total Marks: 1

The language L defined over Σ , not belonging to L , is called _____ of the language L .

Select the correct option

- ☐ union
- ☐ intersection
- ☐ closure
- ☒ complement

Question # 6 of 10 (Start time: 06:49:22 PM, 05 August 2021)

Total Marks: 1

Which of the following represent the absence and presence of current in sequential circuit respectively?

Select the correct option.

☒ 0, 1☐ 0, 0☐ 1, 0☐ 1, 1

Q223: a^n b^n generates the ____ language

Select the correct option

- | | |
|----------------------------------|-----------------------|
| ☐ | regular |
| ☐ | non regular |
| ☒ | EQUAL and non regular |
| ☐ | EQUAL and regular |

Question # 5 of 10 (Start time: 06:48:39 PM, 05 August 2021)

Total Marks: 1

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

Select the correct option

☒ NOT gate☐ NAND gate☐ Clock pulse☐ OR gate

Question # 10 of 10 (Start time: 06:14:51 PM, 05 August 2021)

Total Marks: 1

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

Select the correct option



union,final



final, union



union, initial



initial, union

Question # 4 of 10 (Start time: 06:47:55 PM, 05 August 2021)

Total Marks: 1

One language can have _____ CFG(s).

Select the correct option

☐ At most one☒ More than one☐ At least one☐ Only one

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

Select the correct option

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

Question # 7 of 10 (Start time: 06:49:58 PM, 05 August 2021)

Total Marks: 1

Which of the following is used to delay the transmission of signal along the wire by one step (clock pulse)?

Select the correct option

☒ Delay box☐ Reduce box☐ Holdup box☐ Slow box

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

Select the correct option

☐

z

☒

y

☐

x

☐

n

Question # 8 of 10 (Start time: 06:12:04 PM, 05 August 2021)

Total Marks: 1

A problem that has decision procedure is called _____ problem.

Select the correct option

- ☐ un-decidable
- ☐ Infinite
- ☐ Regular language
- ☒ decidable

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

Select the correct option



Capital letters



Small letters and numbers



Small letters



Numbers

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.

Select the correct option



reject no



accept some



accept no



accept all

Question # 6 of 10 (Start time: 06:10:21 PM, 05 August 2021)

Total Marks: 1

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☐ from final to initial

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.

Select the correct option

- ☐ may be good
- ☐ always impossible
- ☐ Always easy
- ☒ Impossible

A language ending with 'b' partitions Σ^* into _____ distinct classes.

Select the correct option



five



four



three



two

A non regular language can be represented by

Select the correct option



TG



None of the given options



FA



RE

Question # 9 of 10 (**Start time: 06:12:32 PM, 05 August 2021**)

The CFG $S \rightarrow aSb|ab|\Lambda$ is used to express the language _____.

Select the correct option

☐	Palindrome
☐	Prime
☐	Even
☒	Equal

Question # 2 of 10 (Start time: 06:07:03 PM, 05 August 2021)

Total Marks: 1

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

Select the correct option



bsfbsb



bsbfsb



bbsfbs



sbbfsb

Question # 2 of 10 (Start time: 12:56:49 PM, 05 August 2021)

The production $S \rightarrow SS | a | b | ^*$ can be expressed by Regular expression _____

Select the correct option

☐ $(a+b)^+$

☒ $(a+b)^*$

☐ $(a+b)$

☐ $(ab)^*$

Stop

Question # 8 of 10 (Start time: 12:59:19 PM, 05 August 2021)

We have FA accepting the language L , now if we are going to find the complement of L , then we should

Select the correct option



Change FA non final states into final and final states into non final states



Change FA non final states into final states



Change FA final states into non final states

Only change FA old final states into non final states

Which of the following cannot be represented by a regular expression?

Select the correct option

☐	String of 0's with a prime length
☐	Language of even-even
☐	Language of odd-odd
☐	String of 0's with an odd length

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

Select the correct option

- | | |
|----------------------------------|--------------------|
| ☐ | infinite, finite |
| ☐ | infinite, infinite |
| ☒ | finite, infinite |
| ☐ | finite, finite |

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

Select the correct option



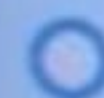
may or may not be



May be



can be



cannot be

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

Select the correct option

☒	terminals
☐	productions
☐	non-terminals
☐	null productions