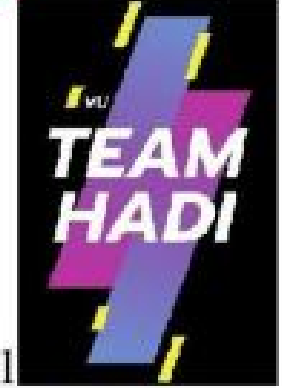


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## (Final Term

## Past Paper)



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WARNING: Team HADI is not responsible for any mistake or wrong answer. All students reading and using this document may check and confirm the answers at their own.



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Best of luck!

مہربانی کر کے میری امی جان کے لیے دعا کر دینا ان کی ۲۰۲۱ میں واقات ہوگی تھی، شکریہ (ہادی)

Question # 2 of 10 ( Start time: 11:33:30 AM, 04 July 2023 )

Total Marks: 1

Subtraction of binary numbers is possible through:

Select the correct option

|                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | Complementing machine                       |
| <input type="radio"/>            | Converting machine                          |
| <input checked="" type="radio"/> | Both complementing and incrementing machine |
| <input type="radio"/>            | Incrementing machine                        |

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## Question # 4 of 10 ( Start time: 11:34:55 AM, 04 July 2023 )

Total Marks: 1

Which one of the following machine is represented as a pictorial representation with states and directed edges labeled by an input letter along with an output character?

## Select the correct option

|                                  |                                    |
|----------------------------------|------------------------------------|
| <input type="radio"/>            | Finite state machine               |
| <input checked="" type="radio"/> | Mealy machine                      |
| <input type="radio"/>            | Deterministic finite state machine |
| <input type="radio"/>            | Moore machine                      |

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## Question # 6 of 10 ( Start time: 09:43:38 AM, 21 July 2023 )

Total Marks: 1

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

## Select the correct option

|                                  |                              |
|----------------------------------|------------------------------|
| <input type="radio"/>            | from final to initial        |
| <input type="radio"/>            | from initial to initial back |
| <input type="radio"/>            | from final to back final     |
| <input checked="" type="radio"/> | from initial to final        |

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## Question # 2 of 10 ( Start time: 11:24:58 AM, 04 July 2023 )

Total Marks: 1

Strings  $x,y,z$  belongs to  $\Sigma^*$  such that both  $xz$  or  $yz \in L$  where  $L \subseteq \Sigma^*$  are:

## Select the correct option

- |                                  |  |
|----------------------------------|--|
| <input type="radio"/>            | Indistinguishable                          |
| <input type="radio"/>            | Undetermined                               |
| <input checked="" type="radio"/> | Distinguishable                            |
| <input type="radio"/>            | Both distinguishable and indistinguishable |

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## Question # 1 of 10 ( Start time: 11:33:03 AM, 04 July 2023 )

Total Marks: 1

In which of the following machine, the length of output string is 1 more than that of input string?

## Select the correct option

|                                  |                                    |
|----------------------------------|------------------------------------|
| <input type="radio"/>            | Finite automaton with output       |
| <input type="radio"/>            | Non-deterministic finite automaton |
| <input type="radio"/>            | Mealy machine                      |
| <input checked="" type="radio"/> | Moore machine                      |

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Question # 3 of 10 ( Start time: 09:41:12 AM, 21 July 2023 )

Total Marks: 1

The CFG that generates the regular language is called \_\_\_\_\_.

Select the correct option

|                                  |                     |
|----------------------------------|---------------------|
| <input type="radio"/>            | finite automata     |
| <input checked="" type="radio"/> | regular grammar     |
| <input type="radio"/>            | regular expression  |
| <input type="radio"/>            | non-regular grammar |

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## Question # 7 of 10 ( Start time: 11:28:12 AM, 04 July 2023 )

Total Marks: 1

Melay machine to increase the output string in magnitude by 1 is called:

## Select the correct option

- |                                  |                       |
|----------------------------------|-----------------------|
| <input type="radio"/>            | Converting machine    |
| <input type="radio"/>            | Decrementing machine  |
| <input type="radio"/>            | Complementing machine |
| <input checked="" type="radio"/> | Incrementing machine  |

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Question # 9 of 10 ( Start time: 11:29:42 AM, 04 July 2023 )

Total Marks: 1

If two finite state machines are equivalent, they should have the same number of -----

Select the correct option

|                                  |                  |
|----------------------------------|------------------|
| <input type="radio"/>            | states and edges |
| <input type="radio"/>            | edges            |
| <input checked="" type="radio"/> | none of these    |
| <input type="radio"/>            | states           |

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## Question # 1 of 10 ( Start time: 09:39:03 AM, 21 July 2023 )

Total Marks: 1

If a CFG has a null production, then it is \_\_\_\_\_.

## Select the correct option

- |                                  |  |
|----------------------------------|--|
| <input type="radio"/>            | Called NULL CFG  |
| <input type="radio"/>            | Called Chmosky Normal Form (CNF)   |
| <input checked="" type="radio"/> | Possible to construct another CFG without null production accepting the same language with the exception of the word $\Lambda$     |
| <input type="radio"/>            | Not possible to construct another CFG without null production accepting the same language with the exception of the word $\Lambda$ |

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## Question # 5 of 10 ( Start time: 09:43:02 AM, 21 July 2023 )

Total Marks: 1

The basic approach of Myhill Nerode theorem is similar to the concept of:

## Select the correct option

|                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | closure of FAs                                |
| <input type="radio"/>            | distinguishable and indistinguishable strings |
| <input checked="" type="radio"/> | concatenation of FAs                          |
| <input type="radio"/>            | union of FAs                                  |

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Question # 7 of 10 ( Start time: 11:36:21 AM, 04 July 2023 )

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

|                                  |            |
|----------------------------------|------------|
| <input type="radio"/>            | Slow box   |
| <input checked="" type="radio"/> | Delay box  |
| <input type="radio"/>            | Holdup box |
| <input type="radio"/>            | Reduce box |

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## Question # 8 of 10 ( Start time: 11:28:47 AM, 04 July 2023 )

Total Marks: 1

Let  $L$  be the language of all strings, defined over  $\Sigma = \{0,1\}$ , ending in 111. Which of the following strings are distinguishable with respect to  $L$  with  $z$  being 11?

Select the correct option

|                                  |          |
|----------------------------------|----------|
| <input type="radio"/>            | 111, 111 |
| <input type="radio"/>            | 111, 101 |
| <input type="radio"/>            | 001, 101 |
| <input checked="" type="radio"/> | 010, 101 |

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Question # 8 of 10 ( Start time: 11:37:06 AM, 04 July 2023 )

Total Marks: 1

For a non-regular language, there exists \_\_\_\_\_ FA.

Select the correct option

|                                  |              |
|----------------------------------|--------------|
| <input type="radio"/>            | one          |
| <input type="radio"/>            | at most one  |
| <input checked="" type="radio"/> | no           |
| <input type="radio"/>            | at least one |

## Question # 6 of 10 ( Start time: 11:27:28 AM, 04 July 2023 )

Total Marks: 1

Two machines are said to be equivalent if they print the \_\_\_\_\_ output string when the \_\_\_\_\_ input string is run on them.

## Select the correct option

- same, same
- unique, different
- same, different
- different, same

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