

BRAC UNIVERSITY
Merul Badda, Dhaka, Bangladesh
CSE331 : Automata and Computability

Quiz 1
Summer 2024

Duration: 30 minutes

CO1

Total: 20 marks

Name:	ID:	Section:
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$L_1 = \{w \in \Sigma^* \mid w \text{ starts with } 10\}, \text{ where } \Sigma = \{0, 1\}$
 $L_2 = \{w \in \Sigma^* \mid w \text{ contains an even number of } 0\text{s}\}, \text{ where } \Sigma = \{0, 1\}$

RE

1. Write the Regular Expressions for the following regular languages: (5 x 2 = 10 marks)

L(M) \rightarrow $\{w \in \Sigma^* \mid w \text{ contains exactly three } 0\text{s}\}, \text{ where } \Sigma = \{0, 1\}$

Solution:

$1^* 0 1^* 0 1^* 0 1^*$

L(M) $\rightarrow L_1$

Solution:

$10\Sigma^*$

DFA

2. Draw the state diagram of the DFA for the following regular languages: (5 x 2 = 10 marks)

$L(M) \rightarrow L_2$

Solution:



$L(M) \rightarrow L_1 \cap L_2$

Solution:

