Sindh Madressatul Islam University (SMIU)

Program: BSCS (Even)

Subject: Theory of Automata

Instructor: Mustafa Ali Bamboat

Quiz – 1

22-Oct-2024 (5th Week)

30 minutes

Attempt questions.

Q1. Factorial is the product of all positive integers less than or equal to a given positive integer and denoted by that integer and an exclamation point. Define the factorial in aspects of the following Automata Methods/Languages.

i. Recursive Language
ii. Descriptive Language

[4 Marks]

Q2. The Language **ODD LENGTH** defined over $\Sigma = \{a, b\}$, can be written as

$$L = \{\lambda, a, b, aaa, aab, baa, bab, bbb, ... \}$$

Define the following methods/languages on the above given descriptive language, the Regular Expression is:

(a+b)((a+b)(a+b))* or   ((a+b)(a+b))*(a+b)

i. FA: Transition Diagram
ii. FA: Transition Table

[6 Marks]