

**Department of Computer Science and Engineering**  
**University of Liberal Arts Bangladesh**  
**Mid-Term Examination (Summer 2020)**  
**Course: Automata and Theory of Computation (CSE 417)**  
**Section: 2 --- Duration: 1 Hour**

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**ID:** #####

**ANSWER TO THE QUESTION No. 1**

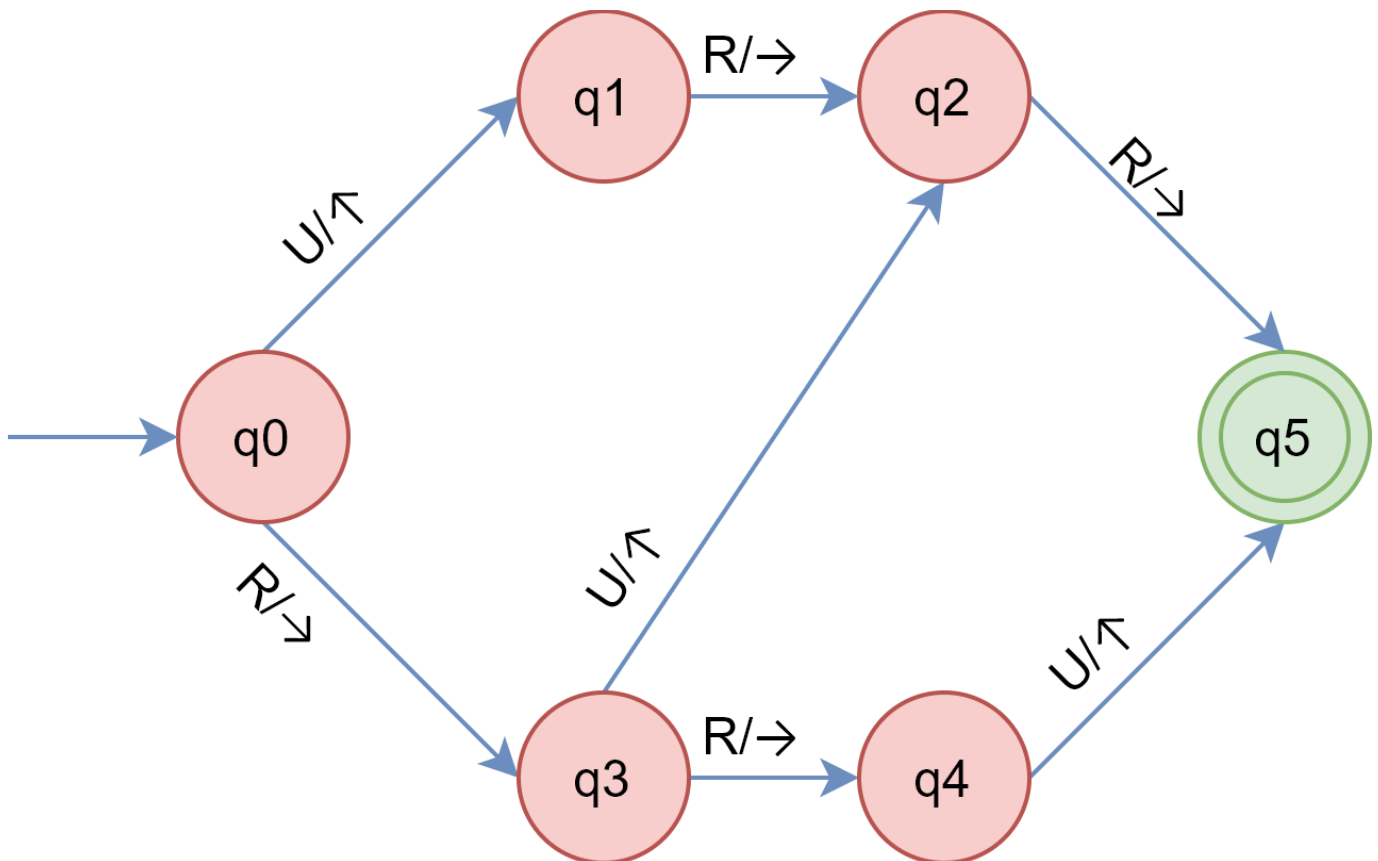
See Juthi Elizabeth Gomez's answer script.

**ANSWER TO THE QUESTION No. 2**

See Juthi Elizabeth Gomez's answer script.

**ANSWER TO THE QUESTION No. 3**

NFA:



$Q = \{q_0, q_1, q_2, q_3, q_4, q_5\}$

$\Sigma = \{\mathbf{Up}, \mathbf{Right}\}$  or  $\Sigma = \{\mathbf{U}, \mathbf{R}\}$  or  $\Sigma = \{\uparrow, \rightarrow\}$  or  $\Sigma = \{\mathbf{Up/U/\uparrow}, \mathbf{Right/R/\rightarrow}\}$

$q_0 = q_0$

$F = \{q_5\}$

**ANSWER TO THE QUESTION No. 4**

Convert the above NFA to DFA.