



# COMSATS University ISLAMABAD

## Department of Computer Science

### CSC312- Theory of Automata

#### BCS – 6B

#### Assignment No .03

**Submission Deadline: Friday, 10<sup>th</sup> June 2022 at 12:30 PM**

#### Instructions:

- Every Student must create a very well formatted Microsoft Word Document.
  - Submit a hard (printed) copy of it.
  - Document should contain a Title Page (Full Name, Registration Number)
  - Header and Footer, Page Number out of Total No. of Pages, References.
  - It is an individual Assignment. **Copied assignment and its source will get 0 Marks**
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**Question No.01:** For the following Regular Expressions:

(CLO -3)

- Find a string corresponding to  $r_2$  but not to  $r_1$ .
- Find a string corresponding to both  $r_1$  and  $r_2$ .
  - $r_1 = a^* + b^*$
  - $r_2 = ab^* + ba^* + b^*a + (a^*b)^*$
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**Question No.02:** Find a regular expression corresponding to the language of all strings over the alphabet { a, b } that contain no more than one occurrence of the string aa. (CLO -3)

**Question No.03:** Describe as simply as possible in English the language corresponding to the regular expression  $((a + b)^3)^*(\Lambda + a + b)$ . (CLO -3)