PES UNIVERSITY, Bangalore

(Established under Karnataka Act No. 16 of 2013)

Department of Computer Science & Engineering

Automata Formal Languages & Logic

Question Bank - Unit 2

Questions from the Prescribed Textbook

Topic	Exercise No.	Question No's
Regular Grammar	**3.3**	**Q2-Q7, Q10-Q13, Q16**

Extra Questions

1. Construct right-linear or left-linear grammars for the regular language of binary strings in which every 0 is followed by 11. Construct a parse tree for the string 0111011.

2. Construct right-linear or left-linear grammars for the regular language of binary strings starting with 000 or ending with 111 (or both). Show the derivation of 00010111.

3. Construct right-linear or left-linear grammars for the regular language of binary strings in which the sum of the last three digits is even (e.g., 00101011 but not 00101001).

4. Construct right-linear or left-linear grammars for the regular language of strings over $\{a, b, c\}$ that contain at least one a and at least one b.

5. Construct right-linear or left-linear grammars for the regular language of strings over $\{a, b\}$ that contain at least three a s or at least two b s.

6. Construct right-linear or left-linear grammars for the regular language of strings over $\{a, b\}$ in which some number of a s is followed by some number of b s with the total length of the string being divisible by 3. Show the parse tree for *aabbbb*.

7. Construct right-linear or left-linear grammars for the regular language of strings over the alphabet $\{a, b\}$ of the form $(ab)^n$, e.g., *ababab*.