

Unit 2 PYQ

- 6marks

- 3-c. Explain Left Linear Grammar and Right Linear Grammar with the help of suitable examples. (CO2) 6
- 3-d. Describe and prove any 3 closure properties of regular languages (with example). (CO2)
- 3-c. Write the regular expression for the language $L = \{ a^n b^m : (n+m) \text{ is even} \}$ (CO2) 6
- 3-d. Prove that $L = \{ a^n b^n a b^{n+1} \text{ for } n = 1, 2, 3, \dots \}$ is not regular. (CO2) 6
- Explain Left Linear Grammar and Right Linear Grammar with the help of suitable examples. (CO2) 6
- Draw NFA with ϵ transition for the R.E. $10 + (0 + 11)^* 1$. (CO2) 6

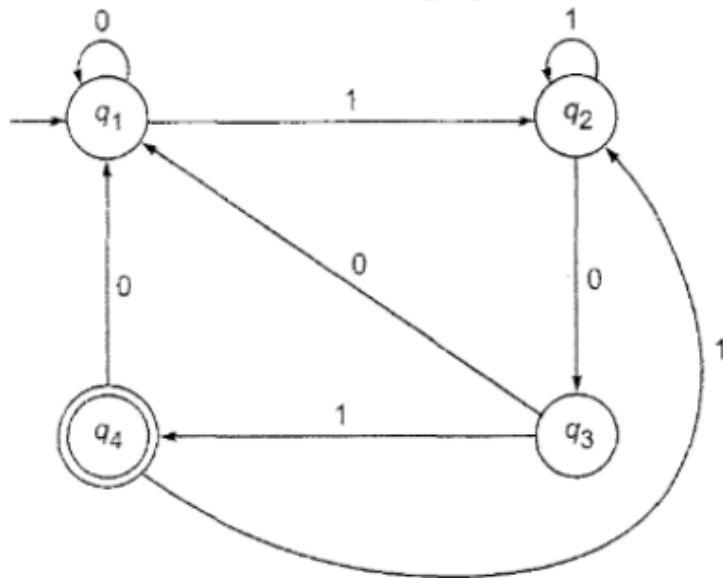
- 10marks

- State Pumping Lemma for Non-Regular languages. Prove that the language $L = \{ a^n b^n \text{ where } n \geq 0 \}$ is not regular. (CO2) 10
- Write regular expression for the following Languages over $\Sigma = \{x, y\}$ that contains: (CO2) 10
- (i) Strings where number of x's are even
 - (ii) Strings with length at least 5.
 - (iii) Strings where 4th symbol from the end is y.
 - (iv) Strings where there are no two consecutive x's.
 - (v) Strings with length at most two.

Write down the statement of Pumping Lemma for Regular Languages. also 10

Describe the Closure Properties of Regular Languages. (CO2)

Prove Ardens's Theorem. Find the regular expression corresponding to Fig. 10
(CO2)



State Pumping Lemma for Non-Regular languages. Prove that the language $L = \{a^n b^n \mid n \geq 0\}$ is not regular. (CO2) 10

What is the relationship between Finite automata and regular expressions. 10
Discuss its applications also. (CO2)