

(b) Reduce the grammar to CNF

S aB/ab

A aAB/a

B ABb/b

8

Unit-4

4. (a) Write Short note on:

(i) Universal turing Machine

(ii) Halting problem

(iii) Multitape and multi dimensional turing machine [4x3=12]

(b) Design turing machine M that recognize the language $\{a^n b^n c^n / n \geq 1\}$

4

Or

4. (a) Explain turing machine with its various ways of representation. Draw diagram wherever required. 8

(b) Design turing machine M that recognize the language

$\{0^n 1^n / n \geq 1\}$

8

Unit-5

5. (a) Explain the model of linear bounded Automata. 8

(b) Explain crowsky classification of language. 8

Or

5. Write short note on the following:

(i) Recursive and recursively enumerable language. 8

(ii) Content free grammar and content sensitive language. 8

(iii) Linear bounded automata. (6+5+5)