



National Institute of Technology, Tiruchirappalli – 15
Department of Computer Science & Engineering

Retest
CSPE73 – Natural Language Processing (Elective)

Class / Semester : IV CSE / VII Time : 3.00 PM to 4.00 PM
Date : 04.11.2025 Marks : 20 Section : A

Answer all questions

1. Draw the pronunciation networks for the word “Slight” using Hidden Markov Model. [CO3] (4)
2. Consider the CNF grammar G defined for a language L. [CO2] (8)

$$\begin{array}{ll} S & \rightarrow AB \mid BC \\ A & \rightarrow BA \mid a \\ B & \rightarrow CC \mid b \\ C & \rightarrow AB \mid a \end{array}$$

Check whether the string $aab \in L(G)$ or not using CYK parsing.

3. Consider the grammar G given below.

$$\begin{array}{ll} S & \rightarrow NP VP \mid Wh NP VP \mid Wh NP Aux NP VP \\ S & \rightarrow Aux NP VP \mid VP \\ NP & \rightarrow Proper-Noun \mid Noun \mid Personal Pronoun \mid NP PP \\ NP & \rightarrow Determiner Nominal \mid Possessive Pronoun Noun \\ NP & \rightarrow Adjective Noun \\ Nominal & \rightarrow Noun \mid Noun Nominal \\ Nominal & \rightarrow Adjective Nominal \\ PP & \rightarrow Preposition NP \\ VP & \rightarrow Verb \mid Verb NP \mid Verb PP \mid Verb PP NP \end{array}$$

By using the above grammar, check whether the sentence “The monkey pick the hat from a boy” $\in L(G)$ or not by using Chunk Parser and FST Parser. [CO2] (8)
