

Total No. of Questions : 9]

SEAT No. :

P3561

[Total No. of Pages : 3

[4959] - 1161
B.E. (Computer)
Multidisciplinary NLP
(2012Pattern) (Elective - II)

Time : 2 $\frac{1}{2}$ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Q.9 is compulsory.*
- 2) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Assume suitable data, if necessary.*

- Q1) a)** With example explain probabilistic parsing. **[4]**
- b) What is rule based parsing? Explain in brief. **[3]**
- c) Define HMM. Explain in brief. **[3]**

OR

- Q2) a)** Draw FST for the words. **[4]**
happy, happier, happiest.
- b) Explain linear regression for maximum entropy models. **[4]**
- c) What is ambiguity in NLP? **[2]**

- Q3) a)** For the following grammar & lexicon **[4]**
- $S \rightarrow NP VP | Aux NP VP | VP$
- $NP \rightarrow Det Nominal | proper - noun$
- $Nominal \rightarrow Noun | Noun Nominal$
- $VP \rightarrow Verb | Verb NP$

P.T.O.

Det → that | this | a

Noun → book | flight | meal | money

Verb → book | include

Aux → does

Prop - noun → Houston

Show correct parse tree for the sentence “book that flight” using top down approach.

- b) Enlist various graphical models for sequence labeling. Explain any one in short. [3]
- c) Explain stochastic tagging. [3]

OR

- Q4)**
- a) Enlist & explain any two parsing methods. [4]
 - b) What is finite state transducer (FST) & what is the difference between finite state automation & FST. [3]
 - c) Explain in brief segmentation is discourse processing. [3]

- Q5)**
- a) Explain Acoustic processing of speech. [8]
 - b) Write a note on speech synthesis. [8]

OR

- Q6)**
- a) Write note on physiology of speech production. [8]
 - b) Explain classification of speech sounds. [4]
 - c) Explain applications of speech processing. [4]

Q7) a) Explain what are different Indian language wordnets. What is a Multilingual Dictionary. **[10]**

b) Explain selectional restriction based disambiguation. **[6]**

OR

Q8) a) Explain approaches for robust word sense disambiguation. **[10]**

b) Write note on metaphores. **[6]**

Q9) Write short notes on (any 3): **[18]**

a) Sentiment analysis.

b) Machine translation.

c) Cross lingual information retrieval.

d) Question answering system.

e) Text entailment.

