Total No. of Questions : 9] May - 2016

SEAT No. :

P3561

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[4959] - 1161

B.E. (Computer)

Multidisciplinary NLP

(2012Pattern) (Elective - II)

Time : 2 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 → NP VP|Aux NP VP | VP

NP → Det Nominal | proper - noun

Nominal → Noun | Noun Nominal

VP → 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.