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> IT'S HARD TO BEAT A PERSON WHO NEVER GIVES UP.
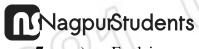
Babe Ruth, American professional baseball player

B.E.Eighth Semester (Computer Science & Engineering) (C.B.S.)
Elective - IV : Natural Language Processing

P. Pages : 2

NKT/KS/17/7616

Time : Three Hours

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Max. Marks : 80

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Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain difficulties in processing of Natural Languages. **6**

   b) What type of grammar is suitable for Natural Language Processing. **7**

OR

2. a) Explain how machine learning can be used as productive technique in Language processing. **7**

   b) What is graph unification algorithm. **6**

3. a) "Smith climbed the building" parse the above sentence using both-top down & bottom-up methods. **7**

   b) Explain how part of speech works in tagging a sentence. Give examples. **7**

OR

4. a) What is the role of smoothing algorithm in NLP? **7**

   b) Explain sequence labelling in Language Processing. **7**

5. a) Explain Penn Treebank with example. **6**

   b) What are issues in Parsing? Discuss various techniques used for parsing with suitable example. **7**

OR

6. a) Discuss how would you argument passes to deal with input that may be incorrect, such as spelling error or non-recognition. **7**

   b) What is grammar formalism? Explain its application in Language processing. **6**

7. a) Explain corpus processing in detail. **7**

b) The semantic of Natural Language expression can be expressed in first order predicate logic. Express the semantics of the sentences in first order predicate logic – **7**
   i) Fisherman went to the bank to get the fish.
   ii) the cat ate the mouse.
   iii) There are many students in this classroom.

OR

8. a) Differentiate between various semantic parsers and comment on their accuracy. **7**

b) Write a short note on retrieval of information. **7**

9. a) What is named entity recognition? Explain with example. **6**

b) Develop a set of grammar rules & semantic attachments to handle predictive adjectives – **7**
   i) Flight 308 from New York is expensive.
   ii) Murphy's restaurant is cheap.

OR

10. a) What is named entity recognition? Explain with example? **6**

b) Which factors can be modeled and weighted against each other in a pronoun interpretation algorithm. **7**

11. a) What are different modes of machine translation. **7**

b) Explain Question – Answering system in NLP. **6**

OR

12. a) Explain following terms with example. **7**
   i) Disclosure.   ii) Monologue.
   iii) Dialogue   iv) HCI.

b) What is word alignment in NLP? Explain with relevant examples. **6**

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The best time to plant a tree was 20 years ago. The second best time is now.

~ Chinese Proverb