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_Seventh__ SEMESTER **B.Tech [IT]**

CLASS TEST 2 *Oct-2020*

IT-425 NATURAL LANGUAGE PROCESSING

Time: 1:00 Hours ***Max. Marks : 20***

Note : Answer all questions in a precise manner.
Assume suitable missing data, if any.

Q.1 For the given grammar, considering the given numbering of the rules (lexicon are not numbered):

1. S→VP NP	4. NP→Det Adj NP	N→dog|man|cat	Adj→old|small
2. S→NP VP	5. VP→V NP	Det→the|a	V→ate|cried
3. VP→V	6. NP→Det N		

Construct a top-down parser for the sentence **the small dog ate**. Create a parsing table with the column of backup states inserted. (Backtrack option: Upon discovering a wrong turn, go back and undo the change by popping out the last pushed in item in the backup states.) The aim is to comment on whether the given sentence is grammatically correct or not.

(8)

Q. 2 For the bottom-up parser, explain the shift and reduction operations using one example each. (4)

Q.3 Explain the feature computation using a fictional word embedding (with values of your choice) for a sample sentence **the small dog ate** and 1D CNN. Assume a 3-dimensional word embedding. (8)