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Name.................................

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SEVENTH SEMESTER B.TECH. (ENGINEERING) (09 SCHEME) DEGREE EXAMINATION, NOVEMBER 2015

IT 09 702—NATURAL LANGUAGE PROCESSING AND KNOWLEDGE BASED SYSTEMS

Time : Three Hours

Maximum : 70 Marks

Part A

Short Answer Questions (one / two sentences).

1. State the issues and difficulties in NLP.

2. Differentiate between natural language processing and natural language understanding.

3. State the components that make up the knowledge based system.

4. Differentiate between syntax and semantics.

5. Why is it difficult to process the natural languages ?

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

Analytical/Problem solving questions :

6. Explain in detail different levels of language representations.

7. How the natural language processing systems are evaluated ? Explain.

8. Explain what is meant by the semantics of a natural language utterance, and how this differs from the pragmatics.

9. Discuss the ways in which humans can help a machine translation system produce better quality.

10. Draw the architecture of knowledge based systems.

11. Write down the desirable properties for a formal language to be used for representing natural language meaning.

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*

Descriptive/Analytical/Problem solving questions :

12. (a) Explain in detail about the organization of NLP systems.

(10 marks)

Or

(b) Explain in detail about the Top-down chart parsing and Bottom-up chart parsing.

(10 marks)

Turn over

13. (a) Discuss various uses of Augmented Transition Networks (ATN) in computation linguistics.

(10 marks)

Or

(b) Discus about an example of a simple measurable feature that you could provide to a machine learning system learning a classifier for disambiguating the word *bat* (indicating either an animal *or* a tool used in cricket) in context.

(10 marks)

14. (a) How the knowledge is represented using semantic networks ? Also explain how information is deduced from semantic networks.

(10 marks)

Or

(b) Explain in detail about the Bottom up parsing.   (10 marks)

15. (a) Explain in detail about least commitment principle and constraint propagation. (10 marks)

Or

(b) What are the major activities performed in the blackboard models ?   (10 marks)

[4 × 10 = 40 marks]