

Roll No. ....

Total No. of Questions : 13]

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**J-3270[S-1126]**

**[2037]**

**B.Sc. (BI) (Semester - 4<sup>th</sup>)**

**ARTIFICIAL INTELLIGENCE (B.Sc.(BI) - 404)**

**Time : 03 Hours**

**Maximum Marks : 75**

**Instruction to Candidates:**

- 1) Section - A is **compulsory**.
- 2) Attempt any **Nine** questions from Section - B.

**Section - A**

**(15 x 2 = 30)**

**Q1)**

- a) Explain the matching process?
- b) What are various components of natural language processing?
- c) Define Artificial intelligence?
- d) What is the difference between declarative and procedural knowledge?
- e) What is FOPL? What is its importance in AI?
- f) Differentiate between ground clause and horn clause?
- g) List the various measures for matching?
- h) Give an example of nonmonotonic reasoning you have experienced?
- i) What is the main difference between scripts and frame structure?
- j) Define
  - (i) object
  - (ii) class
- k) What is traveling salesman problem?
- l) What important characteristics should computer memory organization system possess?
- m) Differentiate between top down parsing and bottom up parsing?

**P.T.O.**

- n) Give two examples of unsupervised learning in humans in which they learn to recognize objects through clustering?
- o) What do you mean by knowledge acquisition?

**Section - B**

**(9 x 5 = 45)**

- Q2)** Explain RETE matching algorithm?
- Q3)** Explain ATN network?
- Q4)** Define knowledge based system? What is the importance of knowledge? How the knowledge is represented?
- Q5)** Explain the syntax and semantic of FOPL?
- Q6)** Write the procedure to transform a sentence into clausal form?
- Q7)** What are various steps in recognition and classification process?
- Q8)** Explain the truth Maintenance system?
- Q9)** What are associative networks? Explain syntax and semantics of associative network?
- Q10)** Discuss some of the potential problems when using the hill climbing search? Give examples of the problems?
- Q11)** Explain
  - (a) Breadth-First search
  - (b) Depth-First search
- Q12)** What are conceptual graphs? Explain the various operators of graph formation?
- Q13)** Discuss the Chomsky hierarchy of generative grammars?

