B. Tech.
(SEM. VIII) EXAMINATION, 2006-07
ARTIFICIAL INTELLIGENCE

Time : 3 Hours] [Total Marks : 100

Note : Attempt all the questions.

1. Attempt any four parts of the following : 5×4 = 20
   (a) What is AI? Explain any five applications of AI in short.
   (b) Explain Minimax search procedure in short.
   (c) Explain automated reasoning in detail.
   (d) Explain Hill climbing algorithm in short.
   (e) The Best First Search technique is a better approach! Explain and justify your answer.
   (f) Trace the constraint satisfaction procedure solving the following cryptarithmetic problem
       \[
       \begin{array}{c}
       C R O S S \\
       + R O A D S \\
       \hline
       D A N G E R
       \end{array}
       \]

2. Attempt any four of the following : 5×4 = 20
   (a) Draw an ATN (Augmented Transition Network) structure for the following sentence
       "The long file has printed".

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(b) Draw a conceptual dependency structure for the following sentence "John wanted Marry to go to the shop".
(c) What is parsing? Explain syntactic processing in short.
(d) Explain semantic analysis in short.
(e) What is sentence level processing? Explain case grammars in detail.
(f) For the below sentence draw a parse tree: "John wanted to go to the movie with Sally".

3. Attempt any two of the following: $10 \times 2 = 20$
   (a) Explain Back tracking of prolog with suitable example.
   (b) Draw a semantic net for the above sentence. "John gave the book to Marry".
   (c) What is a Frame? Explain with a suitable example.

4. Attempt any two of the following: $10 \times 2 = 20$
   (a) What are the different parts of an Expert System? Explain in detail.
   (b) What is Meta knowledge? Explain in detail.
   (c) What do you mean by self explaining system? Explain.

5 Attempt any two of the following: $10 \times 2 = 20$
   (a) Compare the features of LISP and PROLOG.
   (b) What is speech recognition? Explain in short.
   (c) Explain pattern recognition in short.