

2006 Paper 4 Question 4

Artificial Intelligence I

- (a) Give a brief description of the way in which *if-then rules* can be used as a basis for knowledge representation and reasoning. What essential elements would you expect to be included in such a system? [3 marks]
- (b) In the context of such a system, give detailed descriptions, illustrating your answers with specific examples, of the following concepts:
- (i) pattern matching; [2 marks]
 - (ii) reason maintenance; [2 marks]
 - (iii) forward chaining; [4 marks]
 - (iv) conflict resolution strategies; [4 marks]
 - (v) backward chaining with backtracking. [5 marks]