

Punjab Technical University
Master of Computer Application Examination

MCA 4th Semester ARTIFICIAL INTELLIGENCE 2006

Time: Three Hours Maximum Marks :75

Note: Attempt ten question in all. Q. no. 1 is compulsory.

Part – A (15x2=30)

1. (a) Illustrate three important AI techniques.
- (b) What is our goal in trying to produce programs that do the intelligent things that people do?
- (c) What is production system & what is it consists of.
- (d) How the A* algorithm works.
- (e) Compare between Best-first search & problem reduction.
- (f) In good system for the representation of knowledge, which are the four properties domain should posses
- (g) What is unification technique of prolong & how to use it.
- (h) Compare Rule-Based & Case-Based reasoning.
- (i) write recursive search in prolong?
- (j) Draw Transition n/w definition of a definition of simple English grammar.
- (k) How we define Meta predicates in prolong?
- (l) What is Rule_based expert system?
- (m) Write different levels of symbolic analysis for natural language.
- (n) Compare syntactic processing
- (o) Draw ATN grammar that checks number agreement & builds a parse tree.

Part – B (5x9=45)

2. List & discuss two potentially negative effects on society of the development of Artificial intelligence techniques
3. Discuss why do you think the problem of machine “learning” is so difficult?
4. Create a relationship database in PROLOG & represent the data tuples as rules
5. Represent the database in PROLOG database with suitable examples might be from stock in a department store or record in a personal office
6. Write and compare Procedural & Inferential Knowledge with diagram.
7. Give benefits for expert systems in terms of intellectual, social or financial results
8. Write a PROLOG program to answer the questions(of any problem which you have read in your textbook like Wirth`s “ I am my own grandfather” problem)
9. Explain rule-based system architecture for expert system.
10. Build a Case-Based reasoner for an application of your choice.
11. Write down natural language application of the following: (i) Story understanding & questioning answers. (ii) Data base front end
12. Write down natural language application of the : Using learning algorithm to generalize Extracted Information.
13. Discuss the representational structure & knowledge necessary to understand the following sentence.

The brown dog ate the bone. Attach the large wheel to the axle with the hex nut.

Marry watered the plants. The spirit is willing but flesh is weak. My kingdom for a horse!