

MCA (III Year)

Term-End Examination

June, 2008

## CS-14 : INTELLIGENT SYSTEMS

Time : 3 hours

Maximum Marks : 75

**Note :** Question number 1 is **compulsory**. Attempt any **three** questions from the rest.

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1. (a) Differentiate between Epistemology and Meta Knowledge. 4
  - (b) Explain "Turing Test". Do you think it is a real test of intelligence ? 6
  - (c) Draw the state space diagram of tic-tac-toe game upto three levels. Indicate the branching factor at each level. 5
  - (d) Identify the valid list among the following : 5
    - (i) 1234
    - (ii) ((1234))
    - (iii) ((xyz123))
    - (iv) ( )
    - (v) (a(bc) (d(ef)))
  - (e) How is encapsulation different from data hiding in an OOS system ? Explain using an example. 4
  - (f) State what variable bindings, if any, will make the following lists match : 6

- (i)  $(a \ b \ c \ (d \ a) \ f), (? \ x \ b \ c \ (d \ ? \ y) \ ? \ z)$
- (ii)  $(*x \ a \ b \ (c \ d) \ *x), ((e \ f) \ a \ b \ *y \ e \ f)$
- (iii)  $(? \ x \ *y \ a \ b \ c \ (de)), (a \ (j \ k \ (f)) \ a \ b \ c \ *z)$
2. (a) Make conceptual graph of 10
- (i) "Milind gave Adwet the book".
- (ii) "The dog scratches its ear with its paw".
- (b) What is meant by knowledge acquisition system ?  
Explain with the help of suitable diagram. 5
3. (a) Write predicates for the following : 12
- (i) The day is Saturday
- (ii) Suresh is trained
- (iii) Spaniels are good dogs and so are trained coollies
- (iv) If it is Saturday and not warm, then Ashok is at the museum
- (b) Differentiate between blind search and heuristic search. 3
4. (a) Mention the output of the following prolog predicate : 6
- (i)  $? \text{append} ([a \ b \ c], [d, e], y).$
- (ii)  $? \text{append} (x, y, [a \ b \ c]).$
- (iii)  $? \text{append} ([a, b], [c], [a, b, c]).$
- (b) Explain the process of iterative deepening A\* algorithm. 9

5. (a) Explain how Dempster – Shafer Theory helps in measuring uncertainty. 5
- (b) Create a fuzzy set of “Young-Diabetic-Patients”. 5
- (c) How are Modal and Temporal Logics different ? Explain. 5