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[3664]-340
B.E. (Computer Engineering)
ARTIFICIAL INTELLIGENCE
(2003 Course)

sem 1 (Elective -1)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) *Answers to the two sections should be written in separate books.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Assume suitable data, if necessary.*

SECTION - I

Q1) a) What is the applicability of AI in E-commerce and Medicine? **[8]**

b) With appropriate example explain backward reasoning in detail? **[4]**

c) What is the future scope of AI field? **[4]**

OR

Q2) a) What are intelligent agents? Detail the architecture of typical intelligent agent. **[8]**

b) What is logic programming? **[4]**

c) Explain forward and backward chaining. **[4]**

Q3) a) With an example, explain A* algorithm. What are the drawbacks of it? **[10]**

b) Use means ends analysis to solve a problem of transferring a television set kept on wheeled trolley using household robot. Available operators are : **[8]**

PICKUP, PUTDOWN, PUSH, CARRY, WALK, PLACE.

OR

Q4) a) What is constraint satisfaction? Solve the crypt arithmetic problem :**[10]**

CROSS + ROADS = DANGER

b) What is the significance of alpha and beta cutoffs in MINIMAX search? Justify the advantages with example. **[8]**

P.T.O.

Q5) a) State all the rules required to convert the given WFF in the clause form. **[9]**

b) Explain JTMS with detail example. **[7]**

OR

Q6) a) What is Fuzzy logic? Give an example. **[8]**

b) What is resolution? List the drawbacks of the method. **[8]**

SECTION - II

Q7) a) Explain goal stack planning with an example from Block's world. **[8]**

b) What is least commitment strategy? Apply it to solve any real world problem. **[8]**

OR

Q8) a) Describe any two methods of learning. **[8]**

b) What are the advantages of using hierarchical planning? Justify with example. **[8]**

Q9) a) What is ATN? Build an ATN to satisfy the English Statement like "He has adjusted the speed to move in synchronization with the car". **[10]**

b) Give a typical Robot Architecture. **[8]**

OR

Q10) a) Explain the semantic analysis phase of NLP. What is semantic grammar? **[10]**

b) Explain Waltz's algorithm in detail. **[8]**

Q11) a) Design an expert system to convert with the patient to counsel in the case of psychological problem. **[8]**

b) Design the neuron structure to solve X-OR problem. **[8]**

OR

Q12) a) What are the constituents of a typical expert system? Explain the coordination with neat diagram. **[10]**

b) What are the applications of neural network? **[6]**