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B.E. (Electronics)
c-ARTIFICIAL INTELLIGENCE
(2008 Course) (Semester-II)(Elective-IV) (404210)

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

Instructions to the candidates:

1) *Answer to the two sections should be written in separate answer books.*
2) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q10, Q.11 or Q.12.*
3) *Neat diagrams must be drawn wherever necessary.*
4) *Figures to the right indicate full marks.*
5) *Use of logarithmic tables, slide rules, electronic calculators are not allowed.*
6) *Assume suitable data if necessary.*

SECTION-I

Q1) a) Define the term "Artificial Intelligence" . Explain any two applications of artificial intelligence in detail. **[9]**

b) Define an ideal rational agent? Detail the architecture of an agent. **[9]**

OR

Q2) a) Explain different uninformed searching techniques **[6]**

b) Explain the turing lest in detail. **[6]**

c) Explain the significance of PEAS in AI. **[6]**

Q3) a) Explain Minmax algorithm with suitable example. **[8]**

b) Apply constraint satisfaction to slove following criptaarithmetic problem to assign unique single digit number 0 to 9 each alphabet.

      EAT+THAT=APPLE **[8]**

OR

Q4) a) Explain Hill climbing algorithm. Explain plateau, ridge, local maxima and global maxima. **[8]**

b) Define the term Heuristic function. Explain its significance with suitable example. **[8]**

Q5) a) What is predicate logic? Describe the advantages of predicate logic over propositional logic. **[8]**

b) Explain forward and backward chaining. **[8]**

OR

Q6) a) Explain working of unification algorithm with suitable example. **[8]**

b) Explain all first order logic symbols with suitable example. **[8]**

SECTION-II

Q7) a) Differentiate between passive reinforcement and active reinforcement learning . **[8]**

b) Explain types of Artificial Neural Network with its applications. **[10]**

OR

Q8) a) Explain the decision tree algorithm with suitable example. **[9]**

b) Explain different learning methods with suitable examples. **[9]**

Q9) a) Explain perception confined to vision and speech recognition. **[8]**

b) Describe the architecture and functionality of expert system. **[8]**

OR

*Q10)*a) Explain characteristics of Expert systems and explain the expert systems ELIZA and MYCIN.   **[8]**

b) Explain the Waltz's algorithm with suitable example.   **[8]**

*Q11)*a) Describe the syntactic analysis with example.   **[8]**

b) Explain semantic analysis phase of natural language processing. **[8]**

OR

*Q12)*a) Explain probabilistic language processing?   **[8]**

b) Parse each of statements using top-down and bottom-up approch. **[8]**

i)   Lata sang a song.

ii) The sweet girl played cricket.

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