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B.E. (Computer Engineering)
SMART SYSTEM DESIGN & APPLICATIONS
(2012 Pattern) (Semester-I) (End Sem.) (410443)

Time : 2½ Hours]   *[Max. Marks : 70*
Instructions to the candidates:
   1)   *Neat diagram must be drawn wherever necessary.*
   2)   *Figures to the right indicate full marks.*
   3)   *Assume suitable data if necessary.*

Q1) a)   Explain the A* search algorithm with the help of suitable example.   **[8]**

  b)   What is alpha beta pruning? Explain alpha beta search algorithm with suitable example.   **[6]**

  c)   Explain the architecture of Goal Based agents.   **[4]**

OR

Q2) a)   Explain the environment types & PEAS properties of agent?   **[8]**

  b)   Explain game theory and knowledge structure?   **[6]**

  c)   Explain the unification algorithm and state its application.   **[4]**

Q3) a)   What is baye's rule? Write down its application.   **[4]**

  b)   Explain the concept of uncertainty? Write down an example illustrating the behavior of an agent in an uncertain world.   **[6]**

  c)   Compare and contrast propositional logic and FOL.   **[4]**

OR

Q4) a)   Explain Role of NLP in AL?   **[4]**

  b)   What is Expert System shell? Why explanation is necessary in expert system?   **[6]**

  c)   Explain support vector Machine with issues and applications.   **[4]**

P.T.O.

Q5) a) What are the basic axioms of probability? Explain how to derive the useful facts from the basics axioms with suitable example. **[6]**

b) Write a short note on: **[8]**
   i) Information Retrival
   ii) Information Extraction

OR

Q6) a) How to represent and Evaluate decision problem with a decision network. **[8]**

b) What is prior probability and posterior probability? Explain with suitable example. **[6]**

Q7) a) What is supervised learning? Explain any one. **[6]**

b) What is Artificial Neural Network? Explain its types. **[6]**

OR

Q8) a) Write a short note on Wumpus world environment. **[6]**

b) Write a note on Robotics software architecture. **[6]**

Q9) a) Explain in details the components that help in reconstructing the world in 3D. **[6]**

b) Write a short note on: **[6]**
   i) Dynamic Bayesian Network
   ii) Kalman Filters

OR

*Q10)*a) List application domains of robotics. Explain any one in detail. **[6]**

b) How to represent and evaluate decision problem with a decision network. **[6]**

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