

Total No. of Questions : 10]

SEAT No. :

P2038

[Total No. of Pages : 2

[5059]-643

B.E. (Computer Engineering)

SMART SYSTEM DESIGN AND APPLICATIONS

(2012 Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Neat Diagrams must be drawn wherever necessary.
- 2) Assume suitable data, if necessary.
- 3) Justify your answer with an example wherever necessary.

- Q1)** a) Explain the architecture of a learning agent and its components. [8]  
b) Explain AO\* algorithm with an example. [6]  
c) Explain the procedure for conversion of FOL to CNF with example.[6]

OR

- Q2)** a) Define search problem. Solve 8 queen problem as a state space search problem. [8]  
b) Explain MINI-MAX search algorithm for solving any game. [6]  
c) Write a short note on planning graphs. [6]

- Q3)** a) Explain the Baye's rule with a suitable example. [4]  
b) What is Bayesian Networks? What we are achieving through it? Explain it's at least **TWO** areas of application. [8]

OR

- Q4)** a) How to compute an inference in temporal model and Hidden Markov Model? Explain in brief. [6]  
b) Explain the construction of Dynamic Bayesian Networks with a suitable example. [6]

P.T.O.

**Q5)** a) Differentiate supervised unsupervised, semi-supervised models in learning approach. [6]

b) Explain any **ONE** learning approach in building smart system. [6]

OR

**Q6)** a) Write a short note on Artificial Networks. [6]

b) Explain Non-parametric models. [6]

**Q7)** a) Explain different techniques for speech recognition and object recognition. [6]

b) Explain the method for object recognition by appearance. [6]

OR

**Q8)** a) What is meant by augmented grammar and semantic interpretation? Explain with example. [6]

b) How Robot will perceive the information? Explain with example. [6]

**Q9)** a) Describe the basis of Utility Theory with utility functions. [6]

b) How knowledge can be representation? Explain with example. [8]

OR

**Q10)** a) What is Ontology? How it is used to represent the information? Explain with example. [6]

b) Explain 'Internet Shopping World' example with various agents and their usage. [8]

