

Total No. of Questions : 6]

P4908

SEAT No. :

[Total No. of Pages : 2

BE/Insem - 75

**B.E. (Computer Engineering)
Smart System Design and Applications**

(410443) (2012 Course) (In - Semester - I)

Time : 1 Hour]

[Max Marks : 30

Instructions to the candidates:-

- 1) Attempt questions Q1 or Q2, Q3 or Q4, and Q 5 or Q. 6.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Assume suitable data, if necessary.

- Q1) a)** Define artificial intelligence and justify with suitable example how does conventional computing differs from the intelligent computing. [3]
- b) What are requirements of intelligent agent? [3]
- c) What are four popular approaches to artificial intelligence? [4]

OR

- Q2) a)** What are attributes of agent design? (Hint : PEAS) [3]
- b) Comment on the rationality of agent with example. [3]
- c) Explain properties of task environment. [3]

- Q3) a)** Define Search problem. Solve 8 queens as a state - space - search problem. [3]
- b) Explain Breadth - first - search algorithm and evaluate following parameters. Completeness, space complexity, time complexity, path cost. [3]
- c) Explain well - defined problems and solutions? How abstraction is useful while formulating problems? [4]

OR

- Q4) a)** Explain A* search algorithm by minimizing the total estimated solution cost. [3]
- b) What is alpha - beta pruning? Explain with suitable example. [3]
- c) Write steps in MINI - MAX algorithm. [4]
- Q5) a)** Describe the PEAS (Performance measure, Environment, Actuators, Sensors) for Wumpus world problem. [3]

- b) Explain the three components of representing the actions in classical planning problem with example.
- c) Represent a suitable problem using STRIPS language.

OR

- Q6) a)** Describe the following sentences as first order logic sentences : [3]
- i) Everyone studying in IIT is Smart
 - ii) Some one studying in IIT is smart
 - iii) If it doesn't rain on Monday Hari will go to school
 - iv) Laxman has at least two umbrellas
 - v) Nobody likes taxes
 - vi) Some people like football.
- b) Explain the Unification algorithm and state its application. [3]
- c) Explain the following in the first order logic with suitable example and convert into CNF. [4]
- i) Terms
 - ii) Atomic sentences
 - iii) Complete Sentences
 - iv) Universal sentences

