Total No. of Questions : 6]

SEAT No. :

P4908

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BE/Insem - 75
B.E. (Computer Engineering)
Syart System Design and Applications
(410443) (2012 Course) (In - Semester - I)

Time :1Hours] *[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

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