Total No. of Questions : 12]

SEAT No. :

P1784

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B.E. (Information Technology)

b-ARTIFICIAL INTELLIGENCE

(2008 Course) (Semester-I) (Elective-I)

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

Instructions to the candidates:

1) ***Assume suitable data wherever necessary.***
2) ***Separate answer books must be used for the sections.***
3) ***Draw proper diagrams wherever necessary.***

SECTION-I

Q1) a) Define Swarm Intelligence? Where can we apply it? Elaborate with example. **[8]**

b) Describe the Turing test. If the turing test is passed, does this show that computers exhibit intelligence? **[8]**

OR

Q2) a) Define Artificial Intelligence? Give any five applications of AI. **[8]**

b) What is an Intelligent Agent? Give a typical structure of an Intelligent Agent. **[8]**

Q3) a) Apply A* algorithm to solve following 8-puzzle problem. **[10]**

Initial State

1	2	3
7	8	4
6		5

Goal State

1	2	3
8		4
7	6	5

b) Write a script for withdrawal of money from a Bank. **[8]**

OR

P.T.O.

Q4) a) Explain alpha and beta cutoffs in Minmax algorithm with proper examples. **[10]**

b) Apply Constraint Satisfaction to solve LOGIC + LOGIC = PROLOG by assigning single digit unique integer number to the alphabets. **[8]**

Q5) a) Explain semantic analysis phase in Natural Language Processing. **[8]**

b) How does Resolution help to satisfy the goal. Explain in detail. **[8]**

OR

Q6) a) Give the typical ATN representation to accept assertive English statements. **[10]**

b) Write the notes on JTMS. **[6]**

SECTION-II

Q7) a) Consider the following representation from blocks world,

Start: ON(A, D) Λ ON(C, A) Λ ONTABLE(D) Λ ONTABLE(B)

Goal: ON(C, D) Λ ON(B, C) Λ ON(A, B) Λ ONTABLE(D)

Show how strips would solve this problem? **[12]**

b) Explain how AI can be used in visual perception. **[6]**

OR

Q8) a) What is Hierarchical planning? Illustrate with example. **[8]**

b) What are trihedral objects? Explain Waltz's algorithm to label a trihedral object. **[10]**

Q9) a) What is an Expert system? Explain with an example. **[8]**

b) Explain Supervised, Unsupervised and Reinforcement learning in ANN? **[8]**

OR

Q10)a) What is Perceptron Learning in ANN? Explain in detail. **[8]**

b) Explain Expert system to diagnose childhood diseases. **[8]**

Q11)a) Write a note on PROLOG's features to implement AI techniques. **[10]**

b) Write a note on Distributed AI. **[6]**

OR

Q12)a) Write a Prolog program to compute the Factorial of a number. **[8]**

b) Explain the use of cut in PROLOG with suitable examples. **[8]**

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