CS/BCA/SEPARATE SUPPLE/SEM-6/BCAE-601B/2011

2011
INTELLIGENT SYSTEM

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words
as far as practicable.

GROUP – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

    $10 \times 1 = 10$

    i) AI is applied for
        a) Game playing
        b) Speech & Language processing
        c) Planning & Scheduling
        d) All of these

    ii) A Bayesian network is a/an

        a) tree   b) directed graph
        c) undirected graph   d) none of these.

    iii) The time complexity of BFS is

        a) $O(b^d)$ b) e^d
        c) e^b d) $O(d^b)$.

    iv) The space complexity of the DFS is

        a) $O(d)$ b) $O(bd)$
        c) $O(b^d)$ d) $O(d^b)$

SS-95   [Turn over

v) Skolem function is used in

    a) unification algorithm

    b) natural deduction

    c) conversion to clausal form

    d) semantic net.

vi) Knowledge coming from experience is

    a) Belief   b) Hypothesis

    c) Epistemology   d) Heuristics

vii) Inheritable knowledge is best represented by

    a) semantic net   b) first order logic

    c) database   d) None of these.

viii) Decomposable problem can be represented by

    a) OR graph   b) AND

    c) AND-OR graph   d) None of these

ix) Theorem proving is an example of

    a) procedural knowledge   b) declarative knowledge

    c) heuristic   d) None of these

x) "Man is Mortal" can be represented as

    a) Man(mortal)   b) ismortal(man)

    c) Mortal(man)   d) None of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What are the applications of intelligent system ?   5

3. Differentiate traditional computer system and intelligent system.   5

4. Describe knowledge.   5

5. What is modus ponens ? Describe with an example.   2 + 3

6. Write the algorithm of depth-first search.   5

7. Describe abductive, inductive and analogical inference.   5

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

8. Explain expert system. Describe the applications of expert system.   7 + 8

9. Draw the internal storage of (a (b c (d)) e f). Write a program to find the larger number among two numbers in LISP.   5 + 10

10. What is open variable ? Describe nominal, ordinal, binary and interval variable with suitable example.   3 + 12

11. What is learning ? Classify and describe learning system.   5 + 10

12. What is inference engine ? Explain the working principle of inference engine.   5 + 10