U.G. 6th Semester Examination - 2021

BCA

Course Code : BBCADSHT4

Course Title : Artificial Intelligence

Full Marks : 40 Time : 2 Hours

The figures in the right-hand margin indicate marks.

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

1. Answer any **ten** questions: 1×10=10

   a) List four applications of Artificial Intelligence (AI) in the field of multimedia.

   b) Define hypothesis.

   c) Name one heuristic search method.

   d) What do you mean by local maxima in the state space diagram?

   e) Give an example of a search method that implements FIFO data structure.

   f) Name the different types of heuristic search methods.

   g) Name three assumptions in Problem Solving.

   h) Why we should use fuzzy logic?

   i) What is Binary Threshold Neuron?

   j) Write the main features of ANN.

   k) What is back propagation in multilayer perceptron?

   l) Give an example of Modus Ponens.

   m) Write the default Bias function for a single layer perceptron.

   n) What is the form of heuristic estimation function for A*?

   o) What is classification?

2. Answer any **five** questions: 2×5=10

   a) State resolution principle.

   b) In your view which data structure is most suited to solve the N-Queen problem? Justify.

   c) Write the advantages of A* search algorithm.

   d) Give two examples of supervised search methods.

   e) Define alpha-beta Pruning.

   f) Describe in short the application of Clustering.

g) Describe Semantic Network with an example.

h) In speech recognition what kind of signal is used? What treatment is needed on it to process?

3. Answer any **two** questions: 5×2=10

a) Do you think Semantic Nets can be used in the field of NLP? Justify. What is knowledge representation? 4+1

b) Describe the 8-puzzle problem using AI problem solving method. 5

c) Define Artificial Neural Network. What are Neurons? 3+2

4. Answer any **one** question: 10×1=10

a) Mention the assumption for a problem solving agent. Explain Ethical AI. 4+6

b) i) Define wff.

ii) Write the inferencing rules in Propositional logic. 3+7

c) What is hill-climbing problem? In light of it discuss local minima, local maxima and plateau. 4+6

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