



University of Engineering & Management, Kolkata

End Semester Examination, December, 2019

Course: B.Tech (CSE) Semester: 7th

Paper Name: Artificial Intelligence

Paper Code: CS701

Full Marks: 70

Date: 12/12/2019

Time: 2:00pm – 5:00pm

Group - A (10 marks)

Answer any 5. Each question is of 2 marks.

1. A) What does Turing test mean?
B) Differentiate blind search & heuristic search.
C) What is Horn Clause?
D) What is entailment?
E) Define state space search?
F) State the wait and see principle.
G) What is a zero-sum game?
H) What is the use of Dempster- Shafer theory?

Group - B (15 marks)

Answer any 3. Each question is of 5 marks.

2. Define PEAS for an automated taxi.
3. What is machine learning and how does it relate to AI? What are neural networks and how do they relate to AI?
4. What is Hill Climbing technique? Describe it with an example.
5. What are fully observable environments?
6. Write a program in LISP or PROLOG to delete the first three elements from a list L producing list L1.
7. Explain about Markov Process.

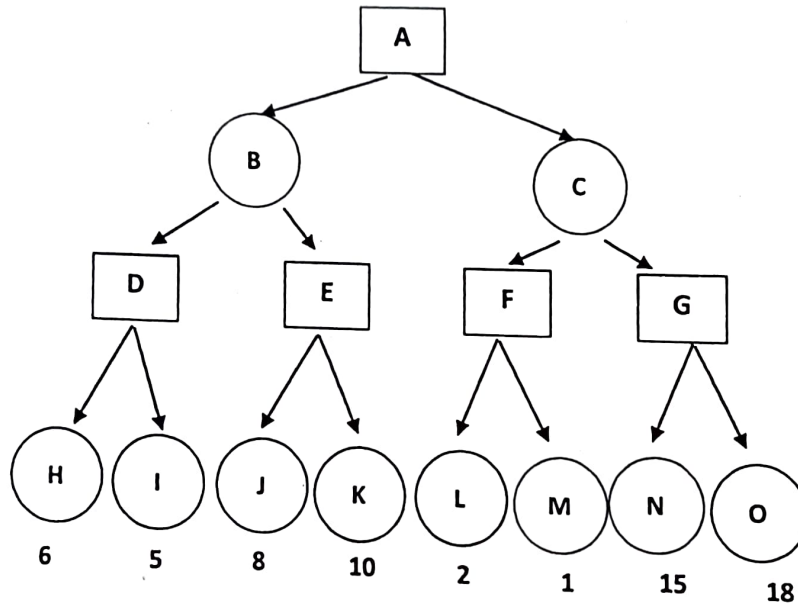
Group - C (45 marks)

Answer any 3. Each question is of 15 marks.

8. You are given two jugs, one with five liter and another with three liter capacity. Neither has any measuring marker on it. There is a pump that can be used to fill the jugs with water. How can you get exactly two liters of water into the five liter jugs?

15

9. Explain in detail Goal based reflex agent. Explain in detail Utility based reflex agent. Explain in detail Problem solving agent. 15
10. Define the terms chromosome, fitness function, crossover and mutation as used in genetic algorithms. Explain how genetic algorithms work, in English or in pseudocode. 15
11. Given the following search tree, apply the alpha-beta pruning algorithm to it and show the search tree that would be built by this algorithm. Make sure that you show where the alpha and beta cuts are applied and which parts of the search tree are pruned as a result. 15



12. What is meant by Relevance-Based Learning? Define Knowledge-Based Inductive Learning. What is truth preserving? 15
13. Write a prolog program to sort all the elements of a list using bubble sort. Write a prolog program to sort all the elements of a list using selection sort. 15
