

Total Pages : 4

B.Sc./6th Sem (H)/COMS/23(CBCS)

2023

6th Semester Examination
COMPUTER SCIENCE (Honours)

Paper : C 13-T

[Artificial Intelligence]

[CBCS]

Full Marks : 40

Time : Two Hours

*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

Answer any *five* questions.

2×5=10

1. What is the role of intelligence agent in AI?
2. What is Frame?
3. Write down the propose of Conceptual Dependence (CD).
4. What is NLP?
5. Differentiate between weak AI and strong AI.
6. What do you mean by Exhaustive search?

P.T.O.

(2)

7. What is a chatbot? Give one example.
8. Why uninformed search is known as blind search technique?

Group - B

Answer any *four* questions.

5×4=20

9. Discuss the AO* algorithm.
10. What is the ATNs and RTNs in NLP.
11. Consider the following water jug problem : You are given two jugs, a four gallon, and a three-gallon, a pump which has unlimited water which you can use to fill the jugs, and the ground on which water may be poured. Neither jar has any measuring markings on it. How can you get exactly two gallons of water in the four-gallon jug?

Formulate the problem as state space search problem.

5

12. Represent the relationships between quadrangle, parallelogram, rhombus, rectangle and square in the form of a semantic network. Is the semantic network unique, or are there many different forms it can take? 4+1

13. Translate following English sentence into predicate logic :

“All computer science students are smart”.

“John tells his students a lot of useful things.” 2+3

(3)

14. What are the criteria by which we can compare the performances of different search algorithms? Explain each of them. 5

Group - C

Answer any *one* question. 10×1=10

15. Consider the following game tree (fig. 1) in which the static scores at the tip nodes are from the first player's perspective. Assume that the first player is the maximizing (MAX) player.

- (i) What is the minimax value for the root? Indicate which action of the first player would choose assuming a fully rational opponent.
- (ii) Show with branches (if any) would be pruned by alpha-beta pruning algorithm. Assuming that the nodes are evaluated in left-to-right order. (3+2)+5

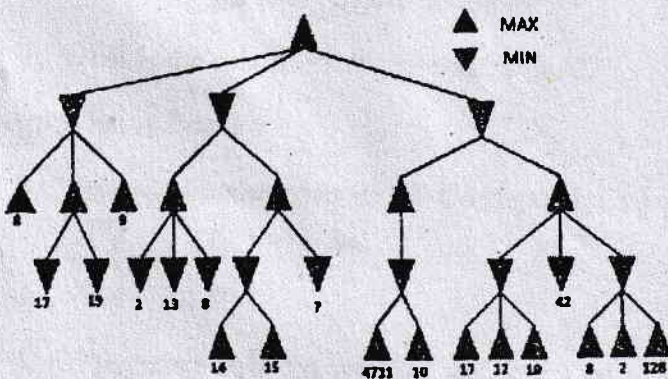


Fig. 1

P.T.O.

16. Short notes on (any *two*):

(a) Means End Analysis.

(c) Greedy Best first Search.

(d) Probabilistic reasoning.