

**B.Sc. Semester-VI Examination, 2022-23****COMPUTER SCIENCE [Honours]**

Course ID : 61511 Course Code : SH/CSC/601/C-13

Course Title : Artificial Intelligence

Time : 1 Hour 15 Minutes

Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***UNIT-I**1. Answer any **five** questions from the following:

1×5=5

- What is constraint Satisfaction Problem (CSP)?
- Give some real world applications of AI.
- What are the different domains /subsets of AI?
- Explain turing test in AI.
- What is meant by semantics Net?
- What do you mean by Heuristic Search Technique?
- What is predicate logic in AI?
- What do you men by Backtracking in AI?

*[Turn Over]***UNIT-II**2. Answer any **two** questions from the following:

5×2=10

- Which algorithm is used in tic-tac-toe? How does Tic-Tac-Toe AI Algorithm works? What is the time complexity in AI? 1+3+1=5
- What are the limitations of hill climbing algorithm? How do you use the A\* algorithm? 3+2=5
- What do you meant by inferential Knowledge? What are the various techniques of knowledge representation in AI? 2+3=5
- Which algorithm is better between BFS and DFS? Explain why?

**UNIT-III**3. Answer any **one** question from the following:

10×1=10

- What do you mean by game theory? Compare between the min-max and alpha-beta pruning algorithm. 2+3+5=10

Prove the following expressions by means of resolution:

- man(Marcus)

- ii) Pompeian(Marcus)
- iii)  $\neg$ pompeian(x1)  $\vee$  Roman(x1)
- iv) Ruler(Caesar)
- v)  $\neg$ Roman(x2)  $\vee$  loyalto(x2,Caesar) $\vee$   
hate(x2,Caesar)
- vi) Loyalto(x3,fl(x3))
- vii)  $\neg$ man(x4)  $\vee$   $\neg$ Ruler(y1)  $\vee$   
 $\neg$ tryassassinate(x4,y1)  $\vee$  loyalto(x4,y1)
- viii) tryassassinate(Marcus,Caesar)

b) Define Production System in AI. Explain the water jug problem in AI. Write down the important requirements for control Strategies.

$$2+5+3=10$$

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