

R18

Code No: 156EK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, March - 2024

ARTIFICIAL INTELLIGENCE

(Computer Science and Engineering – Artificial Intelligence and Machine Learning)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) What is Heuristic function? [2]
- b) Differentiate between Breadth-first search and Depth first search algorithms. [3]
- c) Define inference. [2]
- d) What is meant pruning? [3]
- e) What is a mental event? [2]
- f) What is meant by knowledge engineering? [3]
- g) What is meant by classical planning? [2]
- h) List out the resources for planning. [3]
- i) What is joint probability? [2]
- j) Write Baye's Rule. [3]

PART – B

(50 Marks)

- 2.a) Explain depth first search technique with an example.
- b) What is problem solving agent? Explain its characteristics. [5+5]

OR

- 3.a) Explain Hill climbing search with an example.
- b) Give a note on Uniform Cost search. [5+5]

- 4.a) Elaborate back tracking in Constraint Satisfaction Problem.
- b) What is knowledge based agent? Explain in detail. [5+5]

OR

- 5.a) Compare forward chaining Vs Backward chaining.
- b) Explain proof by resolution banking an example. [5+5]

- 6.a) Write the syntax of First Order Logic and provide example.
- b) Write the role of knowledge engineering in first order logic. [5+5]

OR

- 7.a) What is ontological engineering? Explain in detail.
- b) Give a note on unification in first order logic. [5+5]

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- 8.a) What is a planning graph? Explain in detail.
- b) Explain about Hierarchical planning.

[5+5]

QA QA QA QA OR QA QA QA Q

- 9.a) Explain the components of planning system.
- b) Analyze various approaches of planning.

[5+5]

- 10.a) Explain induction learning with an example.
- b) Write Dempster-Shafer Theory and brief about it.

[5+5]

QA QA QA QA QA OR QA QA QA Q

- 11.a) What is Decision Tree? Explain its learning mechanism.
- b) Give a detailed note on learning using relevance information.

[5+5]

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