



CBCS SCHEME

17CS562

Fifth Semester B.E. Degree Examination, Aug./Sept. 2020 Artificial Intelligence

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Solve the following cryptarithmic problem DONALD + GERALD = ROBERT. (10 Marks)
b. Develop AO* algorithm for AI applications. (10 Marks)

OR

- 2 a. Solve water jug problem using production rule system. (10 Marks)
b. Explain problem characteristics with respect to heuristic search. (10 Marks)

Module-2

- 3 a. Consider the following set of well formed formulas in predicate logic :
i) Man (Marcus)
ii) Pompeian (Marcus)
iii) $\forall x : \text{Pompeian}(x) \rightarrow \text{Roman}(x)$
iv) Ruler (Caesar)
v) $\forall x : \text{Roman}(x) \rightarrow \text{loyalto}(x, \text{Caesar}) \vee \text{hate}(x, \text{Caesar})$
vi) $\forall x : y \text{loyalto}(x, y)$
vii) $\forall t_1 : \forall y : \text{Man}(x) \wedge \text{Ruler}(y) \wedge \text{tryassassinate}(x, y) \rightarrow \text{loyatto}(x, y)$
viii) Tryassassinate (Marcus, Caesar) (10 Marks)
b. Write the propositional Resolution algorithm. (10 Marks)

OR

- 4 a. Write the algorithm for conversion to clause form. (10 Marks)
b. Distinguish forward and backward reasoning with an example. (10 Marks)

Module-3

- 5 a. Propose implementation of DFS and BFS in the context of reasoning. (10 Marks)
b. Explain Bayesian Networks. (10 Marks)

OR

- 6 a. Explain certainty factors and rule based system in statistical reasoning. (10 Marks)
b. Explain property inheritance algorithm for frames. (10 Marks)

Module-4

- 7 a. Explain CYC. (10 Marks)
b. Explain conceptual Dependency along with its goals and representation. (10 Marks)

OR

- 8 a. Write the algorithm for minimax (position, depth, players) and explain. (10 Marks)
b. Write a note on global ontology. (10 Marks)

Module-5

- 9 a. Explain spell checking technique. (10 Marks)
b. Explain Winston's learning program. (10 Marks)

OR

- 10 a. Explain the Augmented Transition Network with an example. (10 Marks)
b. Explain three types of automated discovery systems in the context of learning. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8=50, will be treated as malpractice.