

--	--	--	--	--	--	--	--	--	--

## Fifth Semester B.E. Degree Examination, Feb./Mar.2022

### Principles of 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. Define Artificial Intelligence? Give the brief history of AI. (10 Marks)
- b. Explain the current trend and development of AI. (10 Marks)

OR

- 2 a. Explain Intelligent system in AI. (10 Marks)
- b. Describe water jug problem with production rules and give solution. (10 Marks)

#### Module-2

- 3 a. Explain minimax (position, depth, player) algorithm. (10 Marks)
- b. Explain alpha beta pruning with example. (10 Marks)

OR

- 4 a. Explain Bounded look ahead strategy with an example. (10 Marks)
- b. List the properties of  $\alpha$ - $\beta$  pruning and minimax algorithm. (10 Marks)

#### Module-3

- 5 a. Write the resolution algorithm for predicate logic with example. (10 Marks)
- b. Give the syntactic difference between propositional logic and predicate logic. (10 Marks)

OR

- 6 Explain the following:
  - a. Resolution refutation. (05 Marks)
  - b. Semantic tableau system. (05 Marks)
  - c. Logic programming. (05 Marks)
  - d. Natural deduction system. (05 Marks)

#### Module-4

- 7 a. Explain the types of planning system. (07 Marks)
- b. Explain logic based planning. (07 Marks)
- c. Explain block world problem. (06 Marks)

OR

- 8 a. Explain non linear planning strategies in problem solving. (10 Marks)
- b. Explain linear planning using a goal stack. (10 Marks)

#### Module-5

- 9 a. Explain 4 approaches to knowledge representation. (12 Marks)
- b. Explain knowledge representation using frames. (08 Marks)

OR

- 10 a. What is expert system, explain the introduction phases. (10 Marks)
- b. Explain architecture ES verses traditional system. (10 Marks)