

# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## September / October 2023 Supplementary Examinations

**Programme: B.E.**

**Branch: Information Science and Engineering**

**Course Code: 20IS5PEAIS**

**Course: Artificial Intelligence**

**Semester: V**

**Duration: 3 hrs.**

**Max Marks: 100**

**Date: 21.09.2023**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
 2. Missing data, if any, may suitably assumed.

### UNIT - I

- 1 a) Explain Iterative Deepening search with an example. **10**  
 b) Describe the structure of intelligent agents and environment in artificial intelligence with an example. **10**

### UNIT - II

- 2 a) Write and explain the algorithm for Best-first search with an example. **10**  
 b) Write the algorithm for problem reduction. Illustrate with an example. **10**

### OR

- 3 a) Write and explain A\* algorithm with an example. **10**  
 b) Explain the algorithm for Generate-and-Test. Illustrate with an example. **10**

### UNIT - III

- 4 a) Write the algorithm for backward chaining. Illustrate with an example. **10**  
 b) Write and Describe the syntax and semantics of first order logic. **10**

### UNIT - IV

- 5 a) Describe the basic probability notation. Illustrate the working of Bayesian Belief Network with an example. **10**  
 b) Describe Bayes' rule. Illustrate the working of Bayes' rule in combining evidences. **10**

### OR

- 6 a) Describe knowledge representation in an uncertain domain. Illustrate with an example. **10**  
 b) Discuss the axioms of probability in detail. **10**

### UNIT - V

- 7 a) Explain the characteristics of an expert system. **10**  
 b) Describe the architecture of MYCIN and EMYCIN expert systems. **10**

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.