

2023

M.E. Electrical Engineering (Power System)

First Semester

EE-8106: Artificial Intelligence Techniques for Power System Optimization

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt any five questions.

x-x-x

- I. Define the following Reasoning methods with detailed real-life examples:-
- Inductive Reasoning
 - Deductive Reasoning
 - Abductive Reasoning
 - Monotonic Reasoning
 - Default Reasoning (5x2)
- II. What do you mean by Fuzzy Logic, and where can it be implemented? Explain in detail about Fuzzy Logic Architecture with diagrams. (10)
- III. Write all about Multilayer feed-forward networks. While defining the activation function, give detail about the three most popular activation mechanisms. (10)
- IV. Write about the working of the Back Propagation Algorithm with the help of examples, diagram and required equations. (10)
- V. How are Evolutionary Algorithms and Neural Networks related? Write the differences between Genetic algorithm (GA) and Evolutionary programming (EP). (10)
- VI. What are Genetic fuzzy systems? Explain all types of Genetic operators. Provide diagrams and equations wherever applicable. (10)
- VII. Define the following:-
- Load forecasting using AI
 - Economic Load Dispatch Using AI Technique with equality and non-equality constraints (4,6)
- VIII. Explain the DC Motor Speed Control Using Machine Learning. Explain with required equations and diagrams (10)

x-x-x