Exam.Code:1017
Sub. Code: 7473

2123

M.E. Electrical Engineering (Power System)

First Semester

EE(PS)-8103: Artificial Intelligence Techniques for Power System Optimization

Time allowed: 3 Hours Max. Marks: 50

***NOTE**: Attempt <u>any five</u> questions.*

x-x-x

I. a) Define Artificial Intelligence and explain its significance in modern technology.
b) Discuss one common problem-solving method used in AI. (2x5)

II. a) Explain the concept of heuristic search in the context of AI.
b) Compare and contrast depth-first search and breadth-first search. (2x5)

III. a) Define Fuzzy Logic and explain its importance in AI.
b) Describe a real-world application of fuzzy logic. (2x5)

IV. a) What is an artificial neural network and how does it function?
b) Discuss the importance of the backpropagation algorithm in neural networks. (2x5)

V. a) Explain the basic principles of genetic algorithms.
b) How are genetic algorithms applied in optimization problems? (2x5)

VI. a) Define a Neuro-Fuzzy system and its advantages over traditional systems.
b) Give an example of a real-world application of Neuro-Fuzzy systems. (2x5)

VII. a) Explain how AI is used in load forecasting.
b) Discuss the benefits of using AI for load forecasting in power systems. (2x5)

VIII. a) Describe the role of AI in reactive power control.
b) Compare AI methods to traditional methods in reactive power control. (2x5)

x-x-x