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**Question Paper Code : 60485**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Electrical and Electronics Engineering

EE 2025/EE 702 — INTELLIGENT CONTROL

(Regulations 2008)

(Common to PTEE 2025 — Intelligent Control for B.E. (Part-Time)  
Sixth Semester — EEE — Regulations 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by Intelligent control?
2. Differentiate between rule based system and knowledge based system.
3. What is scaling in ANN?
4. What is principal component analysis?
5. What is meant by cross over in GA technology?
6. What is the basic concept of ant-colony search techniques?
7. What is membership function?
8. Draw the block diagram of fuzzy logic control system.
9. How is stability analysis conducted for fuzzy control system?
10. Mention any two power system problem for which GA can be applied.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the various approaches to AI in detail. (16)

Or

- (b) Draw the architecture of various types of Expert system and explain its role in Intelligent control. (16)

12. (a) Draw the architecture of a single layer perceptron and explain its training algorithm in detail. (16)

Or

- (b) (i) What is meant by data processing in neural networks? Explain the various types of data Processing. (8)  
(ii) Explain in detail about the neural network based controller. (8)
13. (a) Explain in detail, the algorithmic steps in genetic algorithm based optimization technique for a typical control problem. (16)

Or

- (b) Write the Ant Colony search algorithm for optimization problem and explain. (16)
14. (a) Explain the application of fuzzy modeling and control for nonlinear system.

Or

- (b) Explain the working a self – organising fuzzy logic control for nonlinear delay systems.
15. (a) Explain the application of GA to any power system optimization problem. (16)

Or

- (b) With a case study, explain identification and control of non linear dynamic systems using Matlab-Neural network toolbox. (16)
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