



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 101806**

Roll No.

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

## B. Tech.

### (SEM. VIII) THEORY EXAMINATION, 2014-15 ARTIFICIAL INTELLIGENCE & ITS APPLICATIONS IN BIOMEDICAL ENGINEERING

Time : 3 Hours]

[Total Marks : 100

- 1 Attempt any four parts of the following : **5×4=20**
- (a) Explain in brief artificial neuron and neural networks.
  - (b) Explain and describe type of learning.
  - (c) Explain the application of Neural Networks.
  - (d) What are the characteristics of Neural Networks ?
  - (e) Explain multiple category classification problems.
  - (f) Discuss supervised learning decision surface.
- 2 Attempt any four parts of the following : **5×4=20**
- (a) Explain unsupervised learning.
  - (b) Explain and describe Kohonen Network.
  - (c) Explain and describe Hebbian Learning.
  - (d) Explain the adaptive resonance theory (ART).

- (e) Explain and describe clustering.
- (f) Explain and describe Vector Quantization for ART.
- 3** Attempt any two parts of the following : **10×2=20**
- (a) Explain the Fuzzy system design. Also mention its applications.
- (b) Explain and describe Fuzzy logic with example.
- (c) Explain the following :
- (i) Fuzzy sets and Fuzzification techniques
- (ii) Crisp Vs Fuzzy sets.
- 4** Attempt any two parts of the following : **10×2=20**
- (a) Explain the Adaptive Fuzzy system algorithms and Input Data Processing.
- (b) Explain the left hand side and right hand side computations.
- (c) Explain expert system v/s fuzzy inference engines.
- 5** Attempt any two parts of the following : **10×2=20**
- (a) What are the basic operations used in genetic algorithm ?
- (b) What are the advantages of using Genetic Algorithm in Biomedical Engineering.
- (c) Explain application of Artificial Intelligence in Biomedical engineering.
-