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EBM803

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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 pats 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.

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