

**328754(28)**

**B. E. (Seventh Semester) Examination, 2020**  
**(Old Scheme)**  
**(EEE, Et & T Engg. Branch)**

**NEURAL NETWORK and FUZZY LOGIC**

***Time Allowed : Three hours***

***Maximum Marks : 80***

***Minimum Pass Marks : 28***

***Note : All questions are compulsory. Part (a) carries two marks and part (b), (c) and (d) carries seven marks each. Attempt any two parts from (b), (c) and (d). Part (a) is compulsory.***

**Unit-I**

1. (a) What is Neuron? 2
- (b) Explain various models of neurons. 7

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- (c) Compare artificial intelligence and neural network. 7
- (d) Describe the biological model of neural network. 7

**Unit-II**

- 2. (a) Define supervised and unsupervised learning. 2
- (b) Explain error correction learning. 7
- (c) Describe multilayered feed forward network. 7
- (d) Explain Recall and adaptation. 7

**Unit-III**

- 3. (a) Define perception. 2
- (b) Explain back propagation algorithm. 7
- (c) Describe delta rule and its applications. 7
- (d) Explain Adaline and medaline in detail. 7

**Unit-IV**

- 4. (a) Write applications of neural network. 2
- (b) Explain Traveling sales person problem. 7
- (c) Explain Talking network. 7
- (d) Explain Handwritten digit recognition. 7

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**Unit-V**

- 5. (a) Define Fuzzy logic. 2
- (b) Explain fuzzy associative memories. 7
- (c) Compare neural network and fuzzy logic. 7
- (d) Consider two given fuzzy sets

$$\underline{A} = \left\{ \frac{1}{2} + \frac{0.3}{4} + \frac{0.5}{6} + \frac{0.2}{8} \right\} \text{ and } \underline{B} = \left\{ \frac{0.5}{2} + \frac{0.4}{4} + \frac{0.1}{6} + \frac{1}{8} \right\}$$

Calculate union, intersection, difference and complement over fuzzy sets  $\underline{A}$  and  $\underline{B}$ . 7