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Total No. of Questions : 09

B.Tech.(ECE) (2012 to 2017 E-III) (Sem.–7)

NEURAL NETWORKS & FUZZY LOGIC

Subject Code : BTEC-916

M.Code : 71921

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION-A

Q1. Answer briefly :

a) What is the difference between Learning and training?

b) State delta rule of learning.

c) What is the difference between sagittal diagram and venn diagram in fuzzy set theory and classical set theory?

d) What is the significance of membership function in fuzzy?

e) What does linguistic variables specify in fuzzy?

f) What is the need of reinforcement learning?

g) Explain the concept of linear separability.

h) Explain the outstar rule of learning.

i) List methods of supervised and unsupervised learning.

j) Fuzzy Set P=[0.2 0.3 0.9] and Q=[0.1 0.1 0.2 0.2]

Justify four fuzzy set operations for these given sets.

SECTION-B

Q2. What are radial bias neural networks? Discuss basic learning laws of RBF nets.

Q3. What is the significance of learning rules? Explain with example the learning rules for neural network.

Q4. How the delta learning for single output unit and for several output unit works? Also realize hebb net for the AND function with bipolar input and target.

Q5. What is the difference between fuzzy based controller and PID controller?

Q6. What is associative memory network? How the hetero associative memory neural network works? Explain with its architecture.

SECTION-C

Q7. What is fuzzy set theory? Explain the functional block diagram of Fuzzy system to fuzzify and defuzzify and the execution of if-then statements. What are the advantages, disadvantages and applications of fuzzy logic systems over conventional controllers?

Q8. Explain with the help of neat diagram how the architecture, training algorithm and application algorithm for Hopfield network works? How the learning in back propagation network happens? What is the difference between feedforward and feedback networks?

Q9. Write briefly about **any two** of following :

a) McCulloch-Pitts neural network

b) CMAC network

c) Anti braking system

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.