Hall Ticket No | | | | | | | | | | | Question Paper Code: BCS208

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech II Semester End Examinations (Supplementary) - January, 2019

Regulation: IARE–R16

SOFT COMPUTING

Time: 3 Hours **(CSE)** **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) What are the differences between soft computing and hard computing? **[7M]**
   (b) What is neural network? Write the advantages of neural networks. **[7M]**
2. (a) Explain different models of artificial neural networks with neat sketch. **[7M]**
   (b) What is the linear separability? Explain in detail with example. **[7M]**

UNIT – II

3. (a) Explain the training process of auto associative memory with neat sketch. **[7M]**
   (b) What is hopfield network. Write the testing algorithm for discrete hopfield network. **[7M]**
4. (a) Explain the architecture of linear vector quantization with neat sketch. **[7M]**
   (b) What is the weight updation learning rule on winning? Explain. **[7M]**

UNIT – III

5. (a) What is fuzzy membership? Explain the methods of membership value assignment. **[7M]**
   (b) Given two fuzzy sets A= {1/2 + 0.3/4 + 0.5/6 + 0.2/8 }, B={0.5/2 +0.4/4 + 0.1/6 +1/8 } perform union , intersection, difference and compliment over the sets A and B. **[7M]**
6. (a) Explain Max-Min composition and Max Product composition with an example. **[7M]**
   (b) Explain lambda (λ) cut for fuzzy relation in detail with an example. **[7M]**

UNIT – IV

7. (a) What is categorical reasoning? Explain its formulations in detail. **[7M]**
   (b) What are the steps to compute output in Mamdani FIS. **[7M]**
8. (a) Explain in detail about multi objective decision making. **[7M]**
   (b) With a neat diagram explain fuzzy closed loop control system. **[7M]**

UNIT – V

9. (a) Compare natural evolution and genetic algorithm terminology. **[7M]**

   (b) What is fitness? Explain fitness function with an example. **[7M]**

10. (a) Explain with example single point cross over and two point cross over. **[7M]**

    (b) List and explain the applications of genetic algorithms. **[7M]**

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