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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)B.Tech IV Year I Semester Regular Examinations November/December-2022  
SOFT COMPUTING  
(Common to CSE & CSIT)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 a Illustrate the basic components of Artificial Intelligence and its applications. L3 6M  
b Compare soft computing and hard computing. L5 6M
- OR
- 2 a Distinguish between Supervised Learning and Unsupervised Learning. L4 6M  
b Describe the different activation functions in Neural Networks. L2 6M

**UNIT-II**

- 3 a Illustrate Learning Vector Quantization with neat sketch. L2 6M  
b Explain Hamming neural network with neat diagram. L2 6M
- OR
- 4 a Discuss Bidirectional Associate Memory and its applications. L2 6M  
b Analyze the Characteristics, limitations and applications of Associative memory. L4 6M

**UNIT-III**

- 5 a Explain with neat block diagram the various components of a Fuzzy Logic System. L2 6M  
b Differentiate the fuzzy sets and classical sets. L4 6M
- OR
- 6 a Demonstrate the membership functions in fuzzy logic. L3 6M  
b Define Fuzzification and explain membership value assignment in fuzzy logic. L2 6M

**UNIT-IV**

- 7 a Explain the basic terminologies in Genetic Algorithm and illustrate the working of GA. L3 6M  
b Discuss about Simple genetic algorithm with neat sketch. L2 6M
- OR
- 8 a Explain the various cross over operations performed in GA. L2 6M  
b Illustrate the different bitwise operators in GA. L3 6M

**UNIT-V**

- 9 a Discuss in detail about Genetic learning of Rule Base and Knowledge Base. L4 6M  
b Design a Fuzzy Logic Controller using Genetic Algorithm. L6 6M
- OR
- 10 a Infer the characteristics of Neuro-fuzzy Hybrid System. L4 6M  
b Describe the working principle of Neuro-fuzzy system learn? L2 6M

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