M.Sc.- II (Computer Science) (CBCS Pattern) Sem-III

PSCST10 - Paper-II : Soft Computing Techniques

P. Pages : 1 **GUG/W/22/11233**

Time : Three Hours * 1 9 6 7 * Max. Marks : 80

Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat and labeled diagrams wherever necessary.
3. Avoid vague answers and write answers relevant and specific to questions only.

Either:

1. a) Define soft computing Techniques and explain its brief history. **8**

b) Write a brief note on **8**

i) Breadth First search. ii) Depth first search.

OR

c) Explain predicate logic. Also explain monotonic and non- monotonic reasoning. **8**

d) What is Heuristic search? Explain Hill climbing algorithm. **8**

Either:

2. a) Describe window and Hebb's learning rule in detail. **8**

b) Explain error back propagation algorithm in details. **8**

OR

c) Explain MLP in brief with its different activation functions. **8**

d) Explain the characteristics of EBPA and also discuss its applications. **8**

Either:

3. a) What is Fuzzy Logic? Explain important applications of Fuzzy Logic. **8**

b) Explain fuzzy set theory in brief. Also differentiate between fuzzy set versus crisp set. **8**

OR

c) What is membership functions? Explain the features of membership functions. **8**

d) What is fuzzy interface system? Explain in detail. **8**

Either:

4. a) What is encoding? Explain the various types of Encoding. **8**

b) Explain fitness function in detail. **8**

OR

c) Explain Basic working principle of Genetic Algorithm. **8**

d) Explain Evolutionary algorithm and also explain how it is different from other traditional methods. **8**

5. Attempt all the questions.

a) Write a note on Underestimating and Overestimating in A* algorithm. **4**

b) Describe artificial neural network. **4**

c) Explain the aggression of fuzzy rules in details. **4**

d) Explain the inheritance operator in GA. **4**

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