

M.Sc. - II (Computer Science) (CBCS Pattern) Semester-III  
**PSCST10 - Paper-II - Soft Computing Techniques**

P. Pages : 2

Time : Three Hours



**GUG/W/24/11233**

Max. Marks : 80

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- Notes :
1. All questions are compulsory and carry equal marks.
  2. Draw neat and labelled diagram wherever necessary.
  3. Avoid vague answers and write the answers relevant to questions only.

**Either :**

1. a) Write down all steps of 'Hill climbing' search technique. 8
- b) Define soft computing. Explain the applications of soft computing. 8

**OR**

- c) Write and explain A\* algorithm. 8
- d) Write down the characteristics of production system in detail. 8

**Either :**

2. a) Which network among ANN and neural network is best? Explain. 8
- b) What is meant by MLP? Explain. 8

**OR**

- c) Explain the windows and Hebb's learning rule in detail. 8
- d) Explain error back propagations algorithm in detail. 8

**Either :**

3. a) Explain the formation and decomposition of fuzzy propositions in detail. 8
- b) What is member function? Explain the features of membership functions. 8

**OR**

- c) Describe fuzzy rule base system. 8
- d) Write down applications of fuzzy logic. 8

**Either :**

- |           |    |  |          |
|-----------|----|--|----------|
| <b>4.</b> | a) | Write about generational cycle of Genetic algorithm. | <b>8</b> |
|           | b) | Explain selection and fitness function in detail.    | <b>8</b> |

**OR**

- |           |     |   |          |
|-----------|-----|---|----------|
|           | c)  | Write a short note on                           | <b>8</b> |
|           | i)  | Mutation operator                               |          |
|           | ii) | Bitwise operator                                |          |
|           | d)  | Explain the basic concept of Genetic algorithm. | <b>8</b> |
| <b>5.</b> |     | Attempt all the questions.                      |          |
|           | a)  | Write a short note on soft computing.           | <b>4</b> |
|           | b)  | Explain artificial neural network with example. | <b>4</b> |
|           | c)  | Explain about fuzzy interface system.           | <b>4</b> |
|           | d)  | Write a short note on Mutation operator in GA.  | <b>4</b> |

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