

00337

**BACHELOR OF TECHNOLOGY IN
MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

**Term-End Examination
June, 2010**

BME-022 : SOFT COMPUTING IN CIM

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions.

1. What is an expert system ? Discuss the role of expert system in semi - automated Assembly. 10
2. What is process planning ? How training of neural networks is done ? 10
3. What is fuzzy membership function ? Discuss the advantages of fuzzy logic ? 10
4. Describe the necessary steps required for implementing Ant Colony Optimization (ACO) Algorithm in travelling salesman problem. 10

5. Briefly describe the application of genetic algorithm in process planning problem. 10
6. Write the code of tabu search algorithm in the context of outsourcing problem in C++ and thereafter compare the results with other conventional algorithms. 10
7. What is the similarity between particle swarm optimization and Ant Colony Optimization ? Explain. 10
8. Describe the various elements of Group Technology and Cellular Manufacturing. Explain plant layout problem using A.I. tools. 10
9. Discuss the various components of human immune system, describing clearly the antibody - antigen interaction mechanism. 10
10. What do you mean by fuzzy IF - THEN rules ? Describe the physical significance of fuzzy IF - THEN rules in C.I.M. 10