No. of Printed Pages : 2

BME-022

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BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

June, 2012

BME-022 : SOFT COMPUTING IN CIM

Time : 3 hours *Maximum Marks : 70*

Note : *Answer **any seven** questions. All questions carry **equal** marks.*

1. Describe in brief the back propagation, and discuss its applications in neural networks. **10**

2. What are the relative advantages and disadvantages of expert systems over human systems ? Explain with the help of suitable examples. **10**

3. Describe the steps in solving a machine loading problem in a flexible manufacturing system using CLONAL G. **10**

4. What is group technology ? Describe the various elements of group technology and cellular manufacturing. **10**

5. Write the complete code of genetic algorithm in context of travelling salesman problem in C++. 10

6. What do you understand by Partical Swarm Optimisation (PSO) technique ? Discuss the role of time varying acceleration coefficients in modified PSO. 10

7. Explain the applications of neural networks for quality control, quality assurance and fault diagnosis of manufacturing systems. 10

8. Describe the random search optimization technique (RSOPT) to solve operation and scheduling problems in a manufacturing system. Also list the benefits of scheduling. 10

9. What is meant by generalised stochastic petri net ? Describe application analysis and properties of petri nets in engineering and manufacturing systems. 10

10. Describe with suitable example, the role of expert systems in any manufacturing sector. 10