

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

Term-End Examination

June, 2017

00525

BME-022 : SOFT COMPUTING IN CIM

Time : 3 hours

Maximum Marks : 70

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

1. (a) Describe the need of combining an expert system and CAD.
(b) What is a processing function ? Discuss its role in a network's function. 7+7

2. (a) How is a fuzzy membership function determined by neural network approach ?
(b) What is the physical significance of fuzzy IF-THEN rules ? Explain. 7+7

3. (a) What is the practical relevance of different need theories mentioned in Maslow's Hierarchy ?
(b) Explain the mechanism of proliferation and maturation in an artificial immune system. 7+7

4. (a) Describe the complete steps of a conventional simulated annealing algorithm.
- (b) Write the complete code of a genetic algorithm in context of the travelling salesman problem in C++. 7+7
5. (a) Describe the characteristics of operation and scheduling problems and also list out the benefits of scheduling.
- (b) What are the advantages of using neural networks for control applications in Flexible Manufacturing Systems (FMS)? 7+7
6. (a) Define fuzzy petri nets. Also explain weighted fuzzy production rules.
- (b) What is a deadlock in a petri net? List the three basic properties of petri nets. 7+7
7. (a) What do you understand by Computer Integrated Manufacturing? List out the various benefits of CIM.
- (b) Explain the application of neural networks for modelling and design of manufacturing systems. 7+7
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