

00751

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

**Term-End Examination  
December, 2010**

**BME-022 : SOFT COMPUTING IN CIM**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Assume suitable missing data, if any. Answer  
any five of the following.*

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1. (a) What is the need of combining expert system and C.A.D ? 7
- (b) Discuss the role of Expert system in Semi-automated Assembly. 7
2. (a) What do you mean by back propagation ? Explain the procedure of back propagation 7
- (b) How fuzzy membership function is determined by neural network approach? 7
3. (a) Discuss the implementation procedure of genetic algorithm in process planning problem. 7

- (b) What are the termination criteria in ACO (Ant Colony Optimisation ) 7
4. (a) Explain the applications of neural networks for process modelling planning and scheduling of manufacturing systems. 7
- (b) Discuss the application of Genetic algorithm in loading problem. 7
5. (a) List the three basic properties of Petri Nets? 7
- (b) Describe in brief the different steps of Artificial immune system based data analysis learning algorithm. 7
6. (a) Explain Petri Nets Application in Manufacturing system operations. 7
- (b) Explain the Fuzzy Neural Petri Nets with their application. 7
7. (a) Discuss application of fuzzy logic in flexible manufacturing system. 7
- (b) Discuss Circuit Board Assembly (CBA) expert system. 7
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