

01343

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

**Term-End Examination**

**December, 2012**

**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 part routing problem ? 7
- (b) What is fuzzy membership function ? How fuzzy membership function is determined by neural network approach ? 7
2. (a) What are cooperative and adaptive process in Self Organizing Map (SOM) ? 7
- (b) What is back propagation and what is the use of back propagation in neural networks ? 7
3. (a) Discuss the role of Expert Systems in Interactive Design Advisors. 7
- (b) What are the differences between rule base and knowledge base ? 7

4. (a) What is Expert System ? 7  
(b) What is the need of combining Expert Systems and CAD ? 7
5. (a) How AIS (Artificial Intelligence System) can be implemented in Data Analysis Model ? 7  
(b) What are the termination conditions of the basic particle swarm optimisation algorithm ? Discuss the role of tuning parameters in affecting the solution quality. 7
6. (a) Detail the step - wise implementation of simulated annealing to calculate the makespan value in FMS scheduling problem. 7  
(b) Discuss the various types of random search optimisation technique. 7
7. (a) Describe the manner in which a Hopfield Neural Network can be applied on machine loading problem. 7  
(b) What is a situation conflict ? Represent it using a part of a petrinet. 7
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