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BME-022

B.Tech. MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

00963

Term-End Examination

June, 2018

BME-022 : SOFT COMPUTING IN CIM

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **five** of the following questions.*

1. (a) Explain the role of Expert System in Semi-automated Assembly.

   (b) What are the elements of Expert Systems ? 7+7

2. (a) Discuss the scope of implementation of neural networks.

   (b) How are error terms for the unit of hidden layers calculated ? 7+7

3. (a) Describe in brief the advantages of fuzzy logic.

(b) Discuss the implementation procedure of genetic algorithm in process planning problem. 7+7

4. (a) What are the stopping criteria of tabu-based algorithm ?

(b) What is the analogy between Ant Colony Optimization (ACO) algorithm and biological process ? Explain. 7+7

5. (a) How would you solve a combinatorial optimization problem by ACO ?

(b) What is the practical relevance of different need theories mentioned in Maslow's Hierarchy ? 7+7

6. (a) What are the relative advantages and disadvantages of expert system over human expert ?

(b) Explain the applications of neural networks for process modelling, planning and scheduling of manufacturing systems. 7+7

7. (a) Describe in brief the various elements of Group Technology and Cellular Manufacturing.

(b) Discuss the different roles in artificial immune system. 7+7

8. (a) What is a situation in conflict ? Represent it using a part of a Petri Net.

(b) Explain the Fuzzy Neural Petri Nets. 7+7