No. of Printed Pages : 3

BME-005

01321

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

December, 2013

BME-005 : COMPUTER INTEGRATED MANUFACTURING

Time : 3 hours *Maximum Marks : 70*

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

1. (a) Explain the various types of production systems. Compare continuous and descrete type of production systems. 7

   (b) Discuss enterprisewise integration of CIM using SME CIM wheel. 7

2. (a) Explain the working of Coordinate Measuring Machine (CMM). 7

   (b) The part dimension L given in figure 1. is to be measured. The dimension is aligned with x-axis, so it can be measured using x - coordinate locations. When the probe is moved toward the part from the left, contact made at $x = 70.93$ is recorded (mm). When 7

the prob is moved toward the opposite side of the part from the right, contact made at $x = 137.44$ is recorded. The prob tip diameter is 3.00 mm. What is the dimension L. ?

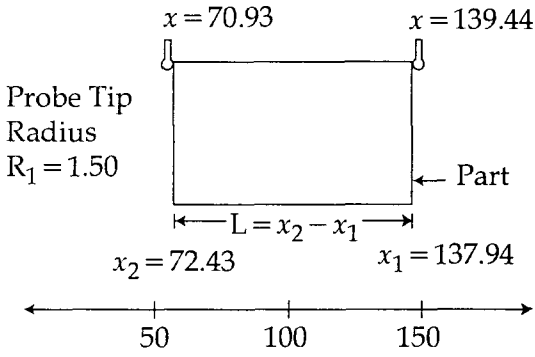

Figure - 1

3. (a) What are the elements of discrete event simulation ? 7

(b) What are the various simulation packages used in modelling FMS ? Briefly discuss the various steps in developing a discrete event simulation model. 7

4. (a) What are different approaches to CAPP ? Describe briefly. 7

(b) Write advantages and disadvantages of variant process planning. 7

5. (a) What do you understand by machine loading ? Write its objectives. 7

(b) Define the term : 7

(i) System imbalance

(ii) Through put

(iii) Essential operation

(iv) Optional operation

6. (a) Differentiate between : 7

(i) static and dynamic simulation model

(ii) continuous and discrete simulation models ?

(b) Discuss in brief : 7

(i) Simulated Annealing

(ii) Tabu search

(iii) Genetic algorithm

7. (a) Explain the recent trends in manufacturing. 7

(b) Describe the role of information system in automated factory. 7