R09

Code No: C3301

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I Semester Examinations March/April-2011
AUTOMATION IN MANUFACTURING
(ADVANCED MANUFACTURING SYSTEMS)

Time: 3hours **Max.Marks:60**

Answer any five questions
All questions carry equal marks

\- - -

1. (a) Explain automation strategies to improve productivity in manufacturing operations.
(b) Define the following terms used in discrete or mass production. [12]
(i) Fixed automation
(ii) Production rate
(iii) Plant capacity

2. (a)Explain about Geneva mechanism.
(b) For a six slotted Geneva mechanism the driver rotates at 6 rpm. Determine the cycle time of the indexing machine the process time and time spent on each cycle in indexing the table to the next position. [12]

3.(a) How CIM is different from CAD/CAM? Explain with CIM circle diagram.
(b)Explain CIM based on cost justification to be implemented in industry. [12]

4(a) Explain two types of single station manufacturing cells and give their reasons.
(b) Explain the four basic manufacturing support systems. [12]

5(a) Explain the considerations in assembly line design.
(b) Explain the largest candidate rule. [12]

6. Explain the following terms along with their applications
(a) Single station manned cell
(b) Single station automated cell [12]

7. Define the following terms
(a) Automated loading systems
(b) Partial Automation
(c) Manufacturing cells
(d) Manufacturing lead time [12]

8(a) What are the production concepts and mathematical models?
(b) Explain what is manufacturing cost? What are the types of manufacturing costs? [12]

*****