

**Code: 13MBA1010****ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI  
(AUTONOMOUS)****I MBA II Semester Regular/Supplementary Examinations, April - 2016  
PRODUCTION AND OPERATIONS MANAGEMENT****Time: 3 hours****Max Marks: 60****Answer any Five questions  
All questions carry EQUAL marks  
Question No.8 is Compulsory**

1. a) Distinguish between manufacturing and service ?  
b) What are the various types of production systems? Explain
2. Write a detailed note on Flexible Manufacturing Systems(FMS) and sketch different layouts used in FMS.
3. How Material Requirement Planning (MRP) is different from Inventory control. Also explain the different inputs of MRP.
4. A raw material undergoes two machining process at machines turning (M1) and grinding (M2) in sequence before becoming a finished item before. There are six raw material available in buffer for machining and the time required performing the turning & grinding are given below.

Book	1	2	3	4	5	6
M1	4	8	2	6	5	7
M2	7	3	5	2	1	5

Calculate the total elapsed time to complete the job and also the idle times at both the machines.

5. What is Productivity? Explain the various elements in the Total Productivity Model..
6. Compare Method Study and Work Measurement. Also explain how they influence the overall improvement of an Organization.
7. Describe the following
  - a) Control Chart for Attributes
  - b) Six Sigma

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8.CASE STUDY.

15 samples of size 4 were drawn and the following Measurement were made.

Sample No.	Observations
1	40, 28, 41, 14
2	50, 44, 60, 58
3	33, 23, 60, 71
4	30, 41, 42, 31
5	37, 38, 35, 39
6	38, 42, 34, 24
7	42, 39, 36, 42
8	19, 29, 28, 24
9	19, 30, 36, 39
10	44, 38, 43, 34
11	42, 24, 45, 34
12	35, 44, 59, 61
13	24, 43, 40, 45,
14	33, 44, 45, 32
15	18, 36, 22, 21

Determine UCL and LCL for X-chart and R-Chart and draw these charts ( for  $n=4$ ,  $A_2=0.729$ ,  $D_3=0$  &  $D_4=2.282$ )