



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Tech(ME/MSS/SE/MTI)/SEM-1/SE-102/MTI-101/  
ME-102/MMS-102/2012-13**

**2012**

**INDUSTRIAL MANAGEMENT**

*Time Allotted : 3 Hours*

*Full Marks : 70*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

Answer any five questions.

5 × 14 = 70

1. a) Distinguish between Personnel and Human Resource Management. 4
- b) Give basic tenets of Scientific management. 3
- c) Justify the need for manpower planning in the present context. 4
- d) Explain the role of IAMR. 3
2. a) Explain the 5 dimensions of TQM and analyze the connection between them. 4
- b) Analyze the quality characteristics of a service rendered. 2
- c) Explain the relationship between the following terms :  
Customer, manufacturer, customer satisfaction,  
customer needs, quality. 4
- d) Explain 5S philosophy. 4

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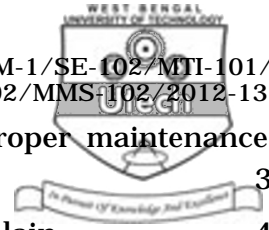
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3. a) Develop an expression for measurement of reliability. 5
- b) Explain with a diagram the failure pattern of complex product. 4
- c) Explain in brief the tests done for testing reliability. 2
- d) From the point of view of designing reliability what points would you consider as important ? 3
4. a) What are the different levels of organized management ? Explain in brief. 6
- b) What are meant by accuracy, time liness and relevance of data ? 3
- c) What are structured, semi-structured and unstructured data ? 2
- d) What is bar code ? How does it help in information processing ? 3
5. a) In a factory, there are 50 machines. It costs Rs. 20 to perform one preventive maintenance ( PM ) operation on any of these machines. Break-down maintenance costs in Rs. 300. Following are the part records :

PM Period	1	2	3	4	5	6	7	8	9	10	11	12
Break-down	0.05	0.02	0.03	0.04	0.04	0.05	0.08	0.11	0.13	0.14	0.15	0.16
Probability												

Based on the above information, develop a maintenance policy. 7



- b) Describe the factors for selecting proper maintenance method. 3
- c) "Failure rate is a function of age." Explain. 4
6. a) Define the term forecasting. Discuss the essential differences between econometric forecasting model and time series model of forecasting. 3
- b) Name four pure strategies of production that are used to prepare a production plan, which absorbs fluctuation in the demand of a finished good. Discuss the pros and cons of each of the strategies suggested by you. 6
- c) Using simple exponential smoothing technique, determine a forecast of demand of a product through period 2 to 7 ( vide table 1.0 ). You may consider the value of  $\alpha$  equal to 0.1. 4

<b>Period</b>	<b>Actual Demand (Unit)</b>
1	8
2	6
3	9
4	8
5	7
6	8
7	6

Table 1.0

- d) What are the consequences of  $\alpha$  values of 0 and 1 on a forecast made by using the single exponential smoothing technique ? 1



7. The month-wise net demand of a product is provided in Table 2.0 :

<b>Month</b>	<b>Demand</b>	<b>Month</b>	<b>Demand</b>
1	10	7	12
2	15	8	10
3	30	9	18
4	27	10	26
5	30	11	30
6	16	12	17

Table 2.0

Table 3.0 provides the production costs and constraints associated with the production of the product :

Maximum regular time production/month	—	10 units
Maximum overtime production/month	—	4 units
Cost of regular time production	—	\$ 30 units
Cost of overtime production	—	\$ 35 units
Cost of subcontracting	—	\$ 37 units
Inventory carrying cost/month	—	\$ 1 unit

Table 3.0

Given the information in table 2.0 and table 3.0 devise an economical production plan.

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