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 5*S* philosophy. 4

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 texts done for testing reliability. 2

   d) From the point of view of designing reliability what points would you consider as impotant ? 3

4. a) What are the different levels of organized management ? Explain in brief. 6

   b) What are meant by accuracy, time lineness 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
Probabi-lity												

   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 forcecasting. 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 α equal to 0·1. 4

Period	***Actual Demand (Unit)***
1	8
2	6
3	9
4	8
5	7
6	8
7	6

Table 1·0

d) What are the consequences of α 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 :

Month	***Demand***	***Month***	***Demand***
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.