Name :
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Invigilator's Signature :
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# CS/ M.Tech(ME/ MSS/ SE/ MTI)/ SEM-1/ SE-102/ MTI-101/ME-102/ MMS-102/ 2012-13 <br> 2012 <br> INDUSTRIAL MANAGEMENT 

as far as practicable.Answer any five questions. ..... $5 \times 14=70$

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 theconnection 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 ofreliability.
b) Explain with a diagram the failure pattern of complex product.
c) Explain in brief the texts done for testing reliability.
d) From the point of view of designing reliability what points would you consider as impotant?
4. a) What are the different levels of organized management? Explain in brief.
b) What are meant by accuracy, time lineness and relevance of data?
c) What are structured, semi-structured and unstructured data?
d) What is bar code ? How does it help in information processing?
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 <br> Period | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Break- <br> 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 <br> -lity |  |  |  |  |  |  |  |  |  |  |  |  |

Based on the above information, develop a maintenance policy.
b) Describe the factors for selecting proper maintenance method.
c) "Failure rate is a function of age." Explain.
6. a) Define the term forcecasting. Discuss the essential differences between econometric forecasting model and time series model of forecasting.
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.
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 $0 \cdot 1$.

| Period | Actual Demand <br> (Unit) |
| :---: | :---: |
| 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?
7. The month-wise net demand of a product is provided in Table $2 \cdot 0$ :

| 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 $2 \cdot 0$
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.

