



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Tech (ME)/SEM-1/PTM-102/2009-10**  
**2009**  
**PRODUCTION 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. What is the historical background behind the evolution of concept of "Industrial Management".
2. Explain the fundamental concept of Management, Production Management, Productivity, Industrial Engineering & Industrial Management.
3. What are Quality, Quality Control and TQM ? Explain in detail different statistical techniques for controlling quality.
4. What is forecasting ? Explain in detail the different mathematical forecasting models. How is the sales forecasting predicted analytically ?



5. Write short notes on the following :

- a) EOQ
- b) JIT
- c) FNSD analysis
- d) Product life cycle
- e) MRP.

6. A manufacture of engines is required to purchase 4800 castings per year. The requirement is assumed to be known as fixed. These castings are subject to quantity discounts. The price schedule is as follows :

Quantity	Cost per unit ( Rs. )
Less than 500 units	150
500 or more but less than 750	138.75
750 or more units	131.25

Monthly holding cost expressed as a decimal fraction of the value of the unit is Rs. 0.02, set up cost associated with the procurement of purchased items is Rs. 750 per procurement. Find optimum order quantity per procurement.



7. Draw  $P$  chart for the following problem :

Date	Number of pieces inspected ( $a$ )	Number of defective pieces found ( $b$ )	Fraction defectives $P = b/a$	% defective $100 p$
November 4	300	25	0.0834	8.34
November 5	300	30	0.1000	10.00
November 6	300	35	0.1167	11.67
November 7	300	40	0.1333	13.33
November 8	300	45	0.1500	15.00
November 10	300	35	0.1167	11.67
November 11	300	40	0.1333	13.33
November 12	300	30	0.1000	10.00
November 13	300	20	0.0666	6.66
November 14	300	50	0.1666	16.66
Total days = 10	3000	350		

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8. The sales figure of a certain company is given below. Compute four-yearly moving averages as forecasting techniques.

Serial No.	Year	Sales in Rs. X 1000
1	1950	200
2	1951	190
3	1952	210
4	1953	180
5	1954	188
6	1955	204
7	1956	216
8	1957	220
9	1958	208
10	1959	224
11	1960	200
12	1961	240
13	1962	184

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