

14/5/8 good

7. Write short notes on the following :-

- (a) Value analysis and benefits of value analysis
 (b) Method study and work measurement 328
 (c) New product development process.

2004

**PRODUCTION AND OPERATION
 MANAGEMENT**

Paper : 202

Full Marks - 70

Time - Three hours

The questions are of equal value.

Answer any five questions.

1. (a) Describe a framework for strategic planning approach for production and operation function of an organisation. 0
- (b) Explain total factor productivity and its variances. Describe the measures of any two partial factor productivity most frequently used in production-operation management. 0
2. (a) Demand of a component was 200 in April, 50 in May and 150 in June. The forecast for April was 100 units. With a smoothing constant of 0.15 and using first order exponential smoothing, what is the July forecast? 459 0

2004

(b) Explain how different types of layout design apply to different situations. *82 notes*

3. (a) Describe major factors which influence the choice of plant location. *27*

(b) Draw precedence diagram of the following activities and balance the line for a cycle time of 9 minutes. What is the minimum number of stations required and what is the actual possible efficiency?

Task	Immediate predecessor	Duration (min)
A	-	5
B	A	3
C	A	7
D	A	5
E	C	6
F	C, D	3
G	B	4
H	E, F	6
I	D	8
J	G, H, I	9

4. (a) Explain how a flexible manufacturing system differ from a job shop and from an assembly line system. *134*

(b) Outline the purpose of MRP and explain how an MRP system can achieve these purposes. *253*

5. (a) What is meant by cost of quality? Describe its four components. *391*

(b) The annual demand of a product is 48,000 units. The average LT is 4 weeks. The standard deviation of demand during LT is 75 units/week. The cost of ordering is Rs. 400 per order. The cost of purchase of the product per unit is Rs. 10. The cost of carrying per unit per year is 15% of the purchase price. The maximum delay in LT is 2 weeks and the probability of this delay is 0.25. Assume a service level of 0.95. Find recorder level if Q-system is followed.

6. (a) Give a brief classification of quality control techniques. *385*

(b) Explain 'Producer's risk' and 'Consumer's risk' with the help of an OC curve.

(c) Critically examine the operational issues in the Product Life Cycle. *132*