

MANAGEMENT PROGRAMME

Term-End Examination

02878

December, 2011

**MS-53 : PRODUCTION/OPERATIONS
MANAGEMENT**

Time : 3 hours

Maximum Marks : 100

(Weightage 70%)

Note : Section A has five questions carry 20 marks each.

Attempt any three questions from section - A. Section

B is compulsory and carries 40 marks.

SECTION - A

1. (a) What are the important elements of JIT manufacturing ? How does JIT system eliminate waste, enforce continuous improvement ? What are the benefits of JIT manufacturing ? **10**
- (b) A company is producing certain type of circuit breakers. The fixed cost of land building, etc, is Rs 40,000. The variable cost is Rs. 10 per unit production. If the sales price of the product is Rs. 20 per unit, what should be the minimum production level ? If the firm is operating at present so that production is 8000 units what is the firms profit ? **10**

2. (a) Define Productivity. Discuss the importance of productivity measurement and productivity improvement in an industry. **10**
- (b) A group of six jobs are to be processed through a two-step operation. The first operation involves cleaning and the second involves painting. Determine a sequence that will minimize the total completion time for this group of jobs. Processing times are as follows :

Job	Processing Time (hours)	
	Work centre - I	Work centre - II
A	20	27
B	16	30
C	43	51
D	60	12
E	35	28
F	42	24

3. (a) Explain the various factors that are to be taken into account for plant location. Discuss in connection with setting up an electronic equipment plant. **10**
- (b) Processing times (including set up times) and due dates for six jobs waiting to be processed at a work centre are given in the following table. **10**

Determine the sequence of jobs, the average flow time, average job lateness and average number of jobs at the work centre, for each of these rules.

- (i) SPT, and
- (ii) EDD.

4. (a)

10

Job	Processing Time (days)	Due date (days)
A	2	7
B	8	16
C	4	4
D	10	17
E	5	15
F	12	18

What is materials management ? How does materials management in a manufacturing operation differ from that in a non-manufacturing operation ?

- (b) A time study of a restaurant activity yielded a cycle time of 2.00 minutes, and the waitress was rated at **PR=96** percent. The restaurant chain has a 20 percent allowance factor. Find the standard time. 10

5. (a) What are some ways managers can try to keep organisations current on Technology? Discuss with suitable examples. **10**
- (b) The following are 3 months of demand data for emergency room service at a hospital. Using $\alpha = 0.2$ and a forecast of 706 for the first month, calculate the exponentially smoothed forecasts for the demand in months 2 through 4. **10**

Month	Actual
1	721
2	816
3	671

SECTION - B

6. (a) Suppose you were asked to set up a cost-control program for an established automobile manufacturing firm. Explain briefly, the steps you would feel were absolutely vital for such a program. **10**
- (b) A local distributor for a national tyre company expects to sell approximately 9600 steel-belted radial tyres of a certain size and tread design next year. Annual carrying costs are Rs. 16 per tyre, and ordering cost are Rs. 75. The distributor operates 288 days a year. **10**
- (i) What is the EOQ ?
- (ii) How many times per year does the store reorder ?
- (iii) What is the length of an order cycle ?
7. Write short notes on *any five* of the following : **5x4=20**
- (a) Zero defects
- (b) Preventive Maintenance
- (c) The House of Quality Matrix
- (d) Flexible Manufacturing systems
- (e) Vendor Rating
- (f) Group Technology
- (g) Chronic loss
- (h) Job enrichment.
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