

NEW**2017****M B A****2nd Semester Examination****PRODUCTION AND OPERATIONS MANAGEMENT****PAPER—MBA-203***Full Marks : 100**Time : 3 Hours*

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Answer any *eight* questions : 8×5
- (a) Discuss different attributes of "Batch Production".
 - (b) Elaborate "point rating method" for selecting plant location.
 - (c) What is plant layout? Define and briefly mention the essentials of fixed position layout.

(Turn Over)

- (d) What is material handling in a manufacturing plant? Mention the normally used material handling equipments used in a plant.
- (e) Table below shows factor ratings and location ratings for a location alternatives A and B. Identify most suitable location.

Factors	Factor Ratings	Location Ratings	
		Location A	Location B
Tax Advantage	4	8	6
Suitability of Labour Skill	3	2	3
Proximity to Customers	3	6	5
Proximity to Suppliers	5	2	4
Adequacy of water	1	3	3
Quality of educational system	3	2	5
Facility of Transport	4	3	4
Availability of Electricity	4	4	6

- (f) What are the objectives of production planning and control?

- (g) Elaborate the concept of Aggregate Planning.
- (h) Explain the difference between 'P' Chart and 'C' Chart in sampling process.
- (i) A work centre operates 5 days a week on 2 shifts per day basis, each shift of 8 hours duration. There are 5 machines of the same capacity in this work centre. If the machines are utilised 80% of the time at a system efficiency of 90%, what is the rated output in standard hours per week.
- (j) Explain 5-S practice of T.Q.M.
- (k) Briefly write about role of ISO upon quality audit.
- (l) What do you mean by "process production"?

2. Answer any *four* questions :

4×10

- (a) (i) Discuss all intermittent production process.

- (ii) A small scale industrial unit intends to select one of the three locations. The data on both tangible and intangible factors collected by the analyst is given below :

Items	Site A	Site B	Site C
(a) Investment ('000)	250	315	250
(b) Sales ('000)	340	390	350
(c) Expenses on Raw Materials ('000)	85	100	120
(d) Expenses on distribution ('000)	50	50	80
(e) Expenses on utilities ('000)	50	40	25
(f) Wages ('000)	25	30	25
(g) Community facilities	Poor	Good	Bad
(h) Community attitudes	Indifferent	Good	Indifferent

- (b) (i) Explain different types of maintenance in the plant.
- (ii) 10 samples, each of size 50, of a pipe were inspected in pressure testing. The results of the inspection are given below :

Sample No.	1	2	3	4	5	6	7	8	9	10
No. of defectives	2	3	2	0	2	3	2	1	2	3

Draw a P-chart and state your conclusion.

(c) State the concept of

(i) Work Study.

(ii) Method Study.

Calculate standard production per shift of 8 hours duration with following data :

Observed time per unit = 5 minutes,

Rating factor = 120%

Time allowance = $33\frac{1}{3}$ % of normal time.

(d) (i) Explain corrective maintenance of the plant.

(ii) In a textile firm, a worker is capable of tailoring 3 garments per day. Assume the time taken for each garment is the same.

Given : Hiring Cost = Rs. 3000/-

Layoff Costs = Rs. 4000/-

Current employee strength = 40

Aggregate demand for next four months is given in the following table:

	Jun.	Jul.	Aug.	Sep.
Demand	3170	3000	2900	2660
Working Days	24	25	23	24

Based on the given information, generate a production plan by following the varying workforce strategy.

- (e) A firm is involved in five types of jobs, each of which must be processed on '3' machines A, B and C in the order ABC. The processing time of each job (in hours) on the 3 machines is given below :

Job	Processing Times		
	A	B	C
1	18	10	8
2	19	12	18
3	12	5	16
4	16	6	14
5	21	9	10

Determine the sequence for the five jobs, that minimizes the total operation time. Also find the idle time of each machine A, B and C.

- (f) Write short notes on any two of the following :
- (i) Mass and Flow Production ;
 - (ii) Line of Balance (LOB) ;
 - (iii) Demming's PDCA cycle.

[Internal Assessment : 20 Marks]