

MBA 1st Semester Examinations, 2020
Fundamentals of Production and Operations Management
Paper: MBA-1707
(New Syllabus)

Time: 3 Hours

Full Marks: 80

The figures in the margin indicate full marks
Candidates are required to give their answers in their own words as far as practicable

GROUP A

Answer any six questions.

5×6=30

1. In the context of Operations Management, briefly explain the functions of operating system.
2. Explain the Dimensional analysis model for location of facilities problem.
3. What do mean by layout of facilities? Explicate the distinction between product layout and functional layout.
4. State the characteristics of inventory status file which is required for developing MRP schedule.
5. Why do we classify different types of attributes, such as, derived attribute, composite attribute and some more, in Database Management System?
6. Give the generalized expressions for the following methods of forecasting –
 (a) Linear trend; (b) Quadratic trend; (c) Polynomial trend; (d) Logarithmic trend; (e) Exponential trend; (f) Power trend.
7. Based on the following data, schedule the jobs using Earliest Due Date rule.

Jobs	Processing time (P_j)	Due dates (D_j)
J1	6	10
J2	10	15
J3	8	22
J4	6	20

8. Briefly describe the purchasing cycle with schematic diagram.

GROUP B

Answer any five questions.

10×5=50

9. Describe the Brown and Gibson's model on facilities location.
10. Briefly describe the MRP inputs and outputs.
11. Describe the position and role of MPS in Manufacturing with schematic diagram.

12. Apply Linear Regression to forecast the demand for month 7 based on the following data.

Month	1	2	3	4	5	6
Demand	18	28	42	64	76	88

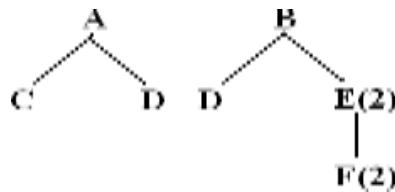
13. Using Capacity Bills technique and based on the following data, allocate the total capacity in hours to the three work centers.

MPS

Products	1	2	3	4	5	6	7	8	9	10	11	12	13
A	33	33	33	40	40	40	30	30	30	37	37	37	37
B	17	17	17	13	13	13	25	25	25	27	27	27	27

Direct labor time per unit of end product.

End product	Total direct labor in standard hours / unit
A	0.95
B	1.85



Routing Data

Product	Lot sizes	Operation	Work center	Standard setup hours	Standard setup hours per unit	Standard runtime per unit
A	40	1 of 1	100	1.0	0.025	0.025
B	20	1 of 1	100	1.0	0.050	1.250
Components						
C	40	1 of 2	200	1.0	0.025	0.575
		2 of 2	300	1.0	0.025	0.175
D	60	1 of 1	200	2.0	0.033	0.067
E	100	1 of 1	200	2.0	0.020	0.080
F	100	1 of 1	200	2.0	0.020	0.0425

14. Based on the following data, schedule the jobs under a flow shop scheduling method.

Job	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
Machine 1	10	3	5	2	11	3	12	4	9	2
Machine 2	2	10	7	4	8	11	16	1	7	3

15. Differentiate between Big-Q and little-q types of organisations with respect to various quality elements.

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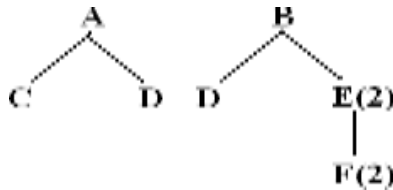
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