2017

Management Studies

PAPER : 3.4(B)

MANUFACTURING PLANNING AND CONTROL

FULL MARKS:70 Time :3 hours

{ The figures in the margin indicate full marks for the question.}

A. All questions are compulsory: 2x5=10

1. What is a naive forecast? 2
2. Why is an intermediate range production plan called an aggregate production plan. 2
3. What are independent demand items?Do spare parts belong to the independent demand category. 2
4. What is bottleneck operation and how should a bottleneck be managed? 2
5. What is a kanban system?How does it work? 2

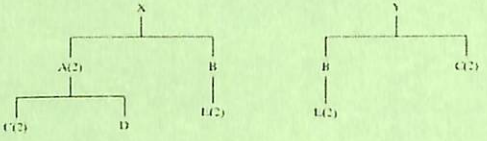
SECTION-B

B. Answer any five: 4x5=20

1. A high-valued item has a tracking-signal-action limit of 4 and has been forecast as shown intable below.Compute the tracking signal, and indicate whether some corrective action is appropriate. 4

Period	Actual	Forecast
1	80	78
2	92	79
3	71	83
4	83	79
5	90	80
6	102	83

2. Differentiate between loading and scheduling? 4
3. Using the following product tree, construct the appropriate single-level trees. How many Cs are needed to make 50 Xs and 100 Ys?



4. Discuss the general execution and control process for a traditional planning environment. 4

5. Calculate the critical ratios for the following orders and establish in what order they can be run.Today's date is 75. 4

Order	Due Date	Lead Time remaining(days)
A	87	12
B	95	26
C	100	21

6. What are the possible consequences on planning and control if the organization has a wide cross-section of product types (MTS, ATO, MTO) within the same organization? 4

7. Complete the following table.Lead time for the part is two weeks.The order quantity (lot size) is 100 units. 4

Week	1	2	3	4
Gross Requirements		50	45	20
Projected Available 75				
Net Requirement				
Planned Order Receipt				
Planned Order Release				

SECTION-C

C. Answer *any five:* 8x5=40

1.A food processing company uses a moving average to forecast next month's demand. Past actual demand (in units) is as shown in table below:

(a).Compute a simple 5-month moving average to forecast demand for month 52. 4

(b).Compute a weighted 3-month moving average, where the weights are highest for the latest months and descend in order of 3, 2 and 1. 4

Month	Actual Demand
43	105
44	106
45	110
46	110
47	114
48	121
49	130
50	128
51	137

2. Complete the following problem. The lead time is one week and the demand time fence is week 3. There are 20 on hand. The lot size is 60. 8

Period	1	2	3	4	5	6
Forecast	20	21	22	20	28	25
Customer Orders	19	18	20	18	30	22
Projected Available Balance 20						
MPS						
ATP						

3.Describe the steps of general sales and operations planning process. 8

4.(a).Back schedule the following shop order.All times are given in days.Move time between operations is 1 day, and wait time is 1 day.Due date is day 150.Assume orders start at the beginning of the day and finish at the end of the day. 4

Operation Number	Work center	Operation Time(days)	Queue Time (days)	Arrival Date	Finsih Date
10	111	2	3		
20	130	4	5		
30	155	1	2		
	Stores		150		

(b). Complete the following input/output report for weeks 1 and 2. 4

Week	1	2	3	4	Total
Planned Input	37	37	36	41	
Actual Input	33	33	31	43	
Cumulative Variance Planned Output	40	40	40	40	40
Actual Output	39	35	40	38	
Cumulative variance Planned Backlog 32					
Actual Backlog 33					

5. Explain the principles of customer-managed ordering and vendor-managed inventory. 8

6.Describe the concept of manufacturing planning and control. 8

7. A company wants to develop a level production plan for a family of products.

The opening inventory is 600 units, and a decrease to 200 units is expected by the end of the plan. The demand for each of the months is given in what follows. How much should the company produce each month? What will be the ending inventory in each month? Do you see any problems with the plan? 8

Month		Jan	Feb	Mar	Apr	May	Jun	Total
Working days		20	22	20	20	18	19	
Forecast Demand		1200	1300	800	700	700	900	
Planned Production								
Planned Inventory	600							

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