

VPM's
DR VN BRIMS, Thane
Programme: PGDM (2014-16)
Fourth Trimester (Operations) Examination September 2015

Subject	Manufacturing Resource Planning and Control		
Roll No.		Marks	60 Marks
Total No. of Questions	7	Duration	3 Hours
Total No. of printed pages	2	Date	24.09.2015

Note: Q1 is compulsory and solve any FOUR from the remaining SIX questions.

Q1) 20 Marks (Compulsory)

Q-1 A) Mention the appropriate name for the given information (5 marks)

- Visual depiction of the requirements in a bill of materials, where all components are listed by levels. _____
- Restructuring the bill of materials so that multiple occurrences of a component all coincide with the lowest level the component occurs _____
- It is actual build schedule and Exact end-item configurations _____
- This shows the materials, parts and components needed for the product _____
- _____ provides a system to capture and make data available in real time do decision makers and other users in the organization.

Q-1 B) Case Study

(15 marks)

Electric Control Pvt. Limited (ECL) is a manufacturer of electrical control panels. It was started 10 years ago by Mr. Aggerwal an entrepreneur, who did not have a formal business management education.

Within a few year of its inception it produced high volume of standard products. Demand was very high and the company managed its inventory on an order point system so as to ensure adequate stock to meet customer service. During the last few years, the company started booking order which were customized. By now the company had moved from it initial status as a high volume production of standard panels to a customized production control panel. In recent years, the company had accumulated a backlog of 10 months. It would have been more but for some recent cancellation of order. The company did not turn down any order. With this backlog, planning department did not feel the need for demand forecasting and- master scheduling. The orders received were put into a detailed schedule. This resulted in most of the order slipping the delivery deadline and needed continuous expedition to push them through the production shop. Most of the major orders ended up with a delay of 12 to 18 weeks delay. These delays resulted in customer dissatisfaction and also affected new business. The company in addition to shipment delays was having problem of cost overrun. Most of the departments were exceeding their cost budgets resulting in high negative cost variance.

After a detailed discussion with the planning staff Mr. Aggerwal realized that most of the delays resulted from non-availability of critical items. The inventory control seems to be poorly functioning. Another major contribution to the problem was changes from design department and Sales. These changes came much later stage of production resulting in up-setting the production plan and changes in production schedules.

Questions for discussion:

- What factors are the contributors to increasing cost and delays in executing orders?
- What is your suggestion to solve the problems of ECL.
- What changes would you recommend to Mr. Aggerwal for improvement in PPC.

Attempt Any FOUR from the Remaining SIX Questions

Q2) Any two from (a) or (b) or (c) _____ (5x2) = 10 Marks

- State the importance of Master Production Schedule.
- Discuss different manufacturing environment.

c) Explain Dependent and independent demand with the help of examples and graphical representation.

Q3) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) Discuss scheduling and control functions in detail.
- b) Explain the different benefits of Materials requirement planning.
- c) How capacity planning is linked to other MPC systems modules.

Q4) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

Write Short notes on following

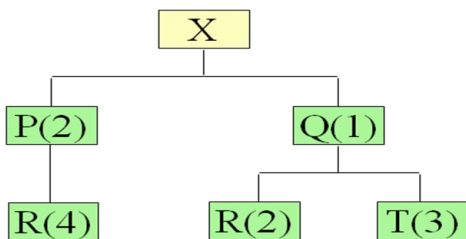
- a) Bill of Materials
- b) Priority rules for job sequencing
- c) Sales and operations planning

Q5) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- a) What are the practical problems may arise while implementing MRP II?
- b) Explain the strategy considerations for ERP.
- c) What do you understand by line balancing and systematic layout planning?

Q6) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

Requirements include 70 units (50 firm orders and 20 forecasts) of X in week 8



Item	On-Hand	L
X	35	
P	60	
Q	30	
R	10	
T	15	

- a) Plan the materials requirement for P
- b) Plan the materials requirement for Q
- c) Plan the materials requirement for R

Q7) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

The following task must be performed on an assembly line in the sequence and time specified:

Task	Task Time (Sec)	Tasks that must Precede
A	50	-
B	40	-
C	20	A
D	45	C
E	20	C
F	25	D
G	10	E
H	35	B,F,G

- a) Draw the schematic diagram.
- b) What is the theoretical minimum number of stations required to meet a forecast demand of 400 units per eight- hour day?
- c) Use the longest-task time rule and balance the line in the minimum number of stations to produce 400 units per day.