

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

POST GRADUATE DIPLOMA IN MANAGEMENT (2025-27)
MID TERM EXAMINATION (TERM -III)

Subject Name: Production Planning and Control

Time: 01.00 hrs

Sub. Code: PGO31

Max Marks: 20

Note: All questions are compulsory. Read the case and answer the questions

Kindly write the all the course outcomes as per your TLEP in the box given below:

CO1- To understand the theoretical and basic elements of production planning and control. Recognize the practices of production planning systems to meet the customers' and stakeholders' expectations.(L2, L4)
CO2- Apply theoretical knowledge in key decision-making areas like aggregate planning, master production scheduling, Inventory and capacity planning, and project management for effective operation management.(L2, L3)
CO3- Develop the ability to assess and solve production planning-related problems effectively and efficiently (L3, L4)
CO4- Analyze the production planning with mathematical models and IT tools for improving overall business performance (L4, L5)
CO5- Analysis and interpretation of production and planning theories in real case study examples (L2, L3)
CO6- Scenarios and techniques to make the production with precise control and make the system highly efficient (L3, L5, L6)

Read the case and answer the questions

Case Study 1: Production Planning and Control at ABC Manufacturing Ltd.

ABC Manufacturing Ltd. is a medium-sized company that produces electric water heaters. The company supplies its products to retailers across India. Due to increasing demand, the company has recently expanded its production capacity.

However, despite expansion, the company is facing several issues:

- Delays in order delivery
- Excess inventory of raw materials
- Frequent machine breakdowns
- Poor coordination between departments

Problem Situation

1. Demand Fluctuation

Demand for water heaters is seasonal (high in winter, low in summer). The company does not have an effective forecasting system, leading to:

- Overproduction in off-season
- Stock shortages during peak season

2. Poor Production Planning

The production department prepares schedules without considering:

- Machine capacity
- Availability of raw materials
- Workforce constraints

As a result:

- Idle machines during some shifts
- Overburdened workers in others

3. Inventory Issues

- Excess stock of heating coils and metal sheets
- Shortage of thermostats (critical component)

This imbalance leads to:

- Increased holding cost
- Interrupted production

4. Inefficient Routing & Scheduling

There is no proper routing plan. Jobs are assigned randomly, causing:

- Increased production time
- Bottlenecks at assembly stage

5. Weak Production Control

- No proper monitoring system
- Delays are identified too late
- No corrective action is taken in time

Questions

1. What are the main problems faced by ABC Manufacturing Ltd.? (5 marks) CO1
2. How can ABC Ltd. reduce its inventory costs? (5 marks) CO1

Q2.Study the situation of inventory system of Johnson and Company and answer the question.

JOHNSON & CO.

The Company' Sales Department has opened up four new warehouses at different location to speed up customer services and the last one was made operational just before the peak season started.

The result were, how ere, not as anticipated and the sales dropped by 10% to 15% in each district, partially due to lack of experience in running warehouses and also due to improper coordination between plant and warehouse.

Mr Jacob Johnson the president of the company, on the other hand had been informed by Mr. Smith, the Inventory Manger, that due to incorporation of new warehouses, company is forced to carry huge inventories. Mr. Johnson was very upset due to increased cost and less sales, and therefore called for details from Mr. Parry, the Sales Manager.

Mr. Parry, upset himself with loss in sales and failure of warehousing system, was unable to understand the complaint from Mr. Johnson and apprised him that the plant did not cooperate with warehouses and was still supplying nearly 40% of total orders, to customers directly from plant. This has resulted in demoralization of sales force and wanted Mr. Johnson interference in the matter so as to support the field staff by increasing the supplies to warehouse. He also clarified that the total inventories of four warehouses and one at central location was still at the same level as before and the total inventory has not increased.

The report from Mr. Parry was then forwarded to Mr. Smith for his detailed comments and proposed action plan, so that field staff is satisfied and inventory level is maintained satisfactory. Mr. Smith reverted to Mr. Johnson stating that warehousing operation was not scientifically management, since they were not sending any advance information regarding the requirements. The orders of customers for shortage items always got precedence over warehouse order but the warehouse orders were in any case dispatched within 2 to 3 weeks. He also confirmed that although all the parts were available between the central location and four warehouses combined, the shortage occurred at different warehouse. The plant was forcing him to carry huge inventory because it had to work on a steady rate even during slack period, while the warehouses were keeping very sleek inventory levels during slack period to boost high inventory turnover.

Therefore, Mr. Parry suggested dispatch of 3 month produce to central location and four warehouses to avert the dissatisfaction of sales department and also install a costly closes loop Computer Network between four warehouses and central location so that contingencies could be attended to.

Question:

1. Mr. Johnson requires your recommendation as an expert consultant on Inventory System to take care of his inventory problem. (5 marks) CO2
2. Discuss various problems in the case study (5 marks) CO2

Kindly fill the total marks allocated to each CO's in the table below:

COs	Blooms Taxonomy Levels	Marks Allocated
CO1	L1	10 Marks
CO2	L2	10 Marks

Blooms Taxonomy Levels given below for your ready reference:

L1= Remembering

L2= Understanding

L3= Apply

L4= Analyze

L5= Evaluate

L6= Create