



Institute of Management
JK LakshmiPat University
Jaipur

END TERM EXAMINATION 2018

Programme: BBA Sem IV
MM: 50 Marks

Sub.: Operations Management
Time: 3 Hours
Subject code: OM08

Instructions: Attempt any three questions from Section A. Section B is compulsory.

Section A

- Q1. Explain the characteristics of modern production and operation management. (10 marks).
- Q2. Write a short essay entitled 'Quality and the pursuit of zero defect' encompassing definitions of quality, Quality Gurus, Quality Tools and Quality Management (10 marks).
- Q3. Define Productivity and explain the Types of Productivity. What are the factors affecting Productivity. (10 marks).
- Q4. Explain objectives of Maintenance in an industry. Discuss various types of maintenance. (10 marks).
- Q5. Explain product layout, process layout, fixed position and group layout in detail. (10 marks).
- Q6. Vision Graphics produces copy services for law in Mumbai suburbs. Five customers submitted their orders at the beginning of the week. Specific scheduling data re as follows: (10 marks).

Job (in order of arrival)	Processing Time (Days)	Due date (Days hence)
A	3	5
B	4	6
C	2	7
D	6	9
E	1	2

Compute the Mean Flow Time and Average lateness using the Five Priority Rules and determine the best Priority Rule to Sequence the jobs.

- Q7. Explain what is meant by the Economic Order Quantity (EOQ) model used in inventory control. (10 marks).

Section B

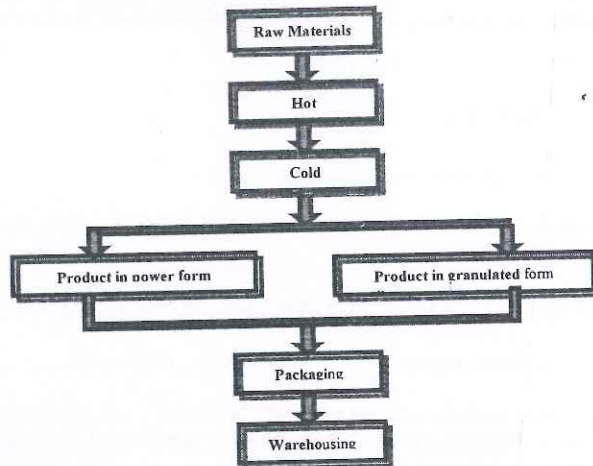
- Q6. IndoChem is the India subsidiary of a multinational corporation. It is based at Ahmedabad, and manufacture and sells chemical products. By local standards, its sales volume makes it a typical medium- sized company. Most of the productive capacity is used to supply the domestic market, while any temporary excess capacity is used to produce exportable products. Owing to international competition, these products are mostly sold to countries such as Sri Lanka, Thailand, and Bangladesh at discount prices. Since the profit margins of the company are typically low, exports are still less profitable but desirable in periods of lower demand, to utilize the full capacity and increase total profits.

The globalization process and increased market competition have forced a significant drop in the market share position of the company. By the same token, the same process conjugated with reduced import tariffs has made the company lose its profitability. The productivity has lowered and, unless overtime work is widely used, delivery dates are often not met.

Although the production is by process, as is usual in chemical industry, the specific requirements of each customer impose a batch or 'made-to-order' kind of production. Each product is made from the same basic compound, is unique according to customer specifications. These products have variations obtained by the application of additives which change the basic physical and chemical characteristics of the product, such as color, shock resistance, and transparency.

The greatest challenge faced by the company was overcoming its low productivity, as measured by the larger than expected gap between nominal capacity and effective production. The reason for this inefficiency seems to be

related to the unproductive time required for cleaning the mixers when a new batch is introduced. Cleaning times vary from 20 to 200 minutes significant 10 times variation depending on the preceding and succeeding product pair-Thus, poor sequence planning would generate enormous production inefficiency. For small orders, the production run was even shorter than the cleaning operation. Figure 13-19 shows the production process at IndoChem. The main activities is the mixer and its output, a powder product, which, if the customer desires, can be further processed into a granulated product.



The company normally operates in two shifts and the maximum capacity depends on the sequence, variety, and quantity of each batch produced. Every order placed by the customers would specify the quantity and due date. However, many customers prefer to split their orders to receive the product on two or more delivery dates. This created the alternative policies of splitting production or producing in batches, which led to earliness costs. Very often, customers asked for a change in the quantities ordered or advanced the due dates. Thus, a revision of the orders already placed constituted the norm rather than an exception. Such a complex environment is a challenge to a company which does not have a clear and round approach to customer needs. Therefore, the absence of a production sequencing routine contributes to the resulting low efficiency, poor customer service, and lack of competitiveness.

To solve the production sequencing problem, the methodology in practice is a kind of trial and error approach. Production would priorities lots, according to their due dates, in order to avoid excessive lateness. In periods of lower demand, the existence of idleness would make this policy appear satisfactory. However, in periods of stronger demand, this policy would only be possible at higher production costs, with intensive use of overtime work.

There are many conflicts of the production department with the sales department. This is due to the pressure exerted by the sales department to improve customer service in a difficult environment, own uncertainties. Thus, the deficiency of production sequencing procedures add to the internal and classical conflict between production and sales. In addition, the physical distribution system of the company was largely affected by the inefficiencies of the production system as it stood.

The company has a policy of accepting small orders. Small orders usually represent a new or special product, typically requiring long set-up times and short production times. The company believed that these orders were unprofitable, due to the long idle times and special laboratory arrangements required to satisfy them. Despite this, the management was usually willing to accept such orders as a way to please customers and eventually open new market opportunities. Nevertheless, the effective cost of these orders constituted an open question.

Discussion Questions:

(20 marks).

1. Is it strategically right on the part of the company to accept small orders?
2. Suggest a suitable sequencing method for IndoChem to alleviate its problems.

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