



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

**POST GRADUATE DIPLOMA IN MANAGEMENT (2019-21)
END TERM EXAMINATION (TERM -IV)**

Subject Name: Production Planning & Control
Sub. Code: PGO06

Time: **02.30 hrs**
Max Marks: **60**

Note:

1. All questions are compulsory in Section A& C. Section A carries 8 questions of 2.5 marks each, Section B carries 5 questions of 04 marks each, and Section C carries 1 Case Study of 20 marks.

SECTION-A

2.5×08 = 20 Marks

Attempt all questions. All questions are compulsory.

- Q.1 (A): Explain the aggregate planning and its advantages in production.
Q. 1 (B): What is the meaning of line balancing? Explain with example
Q. 1 (C): What is the importance of Route sheet in Production Planning and Control?
Q. 1 (D): Explain the Terms: Lead Time, Stock Out, Buffer Stock, Inventory Carrying Cost.
Q. 1 (E): Explain the Value Stream Mapping with example and its advantages in production Planning.
Q. 1 (F): What is backward and forward scheduling? Explain with an example?
Q. 1 (G): What is Kanban and its application in lean-manufacturing?
Q. 1 (H): Define and explain purpose of Scheduling with suitable example.

SECTION – B

04×05 = 20 Marks

Attempt any five out of six questions

- Q. 2: Discuss the procedure and documentation in production management with example of ISO 9000.
Q. 3: Explain the role of Agile manufacturing to meet the demand of customer in today's Environment.
Q. 4: Outline and compare the various types of Production Systems with a relevant example of pharma production, automobile and plan industry.
Q. 5: Discuss the objectives of Material Requirement Planning. Explain the inputs to MRP System?
Q. 6: A materials manager adopts the policy to place an order for a minimum quantity of 500 of a particular item in order to avail discount of 10%. It was found from the company records that for last year 8 orders were placed of size 200 nos, ordering cost is Rs. 500 per order Inventory carrying cost charges at 40% cost per unit Rs.400
i) Is the decision of manager justified?
ii) What is the effect of this decision on company?
Q. 7: Explain the Master Production Schedule (MPS) with example of food products Manufacturing.

SECTION – C

10×02 = 20 Marks

Read the case and answer the questions

Q. 8: Case Study: ERP Implementation In A Small Manufacturing Company

ERP is a single, integrated software system that supports the managerial need for real time information and decision making by all departments and functions of an organization. Historically, various departments and units in a company tended to use their own systems developed by certain vendors particularly for their functional areas. These different systems were notoriously unable to “talk” to or share data with each other directly. The ultimate goal of integrating various standalone, functional sub-systems under one single, umbrella information system (now known as ERP)

became possible only after the past three decades of dramatic development in computer capacity and speed and network technology. The ERP system can save managers a tremendous amount of time and energy and give them more accurate data and information in real time. It enhances the firm's overall competitiveness and improves its communication as well. An ERP project may widely impact a company's operation and management from business process and procedures to organizational structure and culture, and to employees' and managerial roles and responsibilities. There are the special challenges and difficulties facing small and medium-sized companies in implementing a major technology change.

Founded in 2000 in Shenzhen, China, ANC Electronics Inc. is a privately-owned producer of uninterruptible power supply (UPS). As an independent manufacturer, ANC develops, produces, sells, and provides service for seven series and more than 80 types of UPS equipments for both industrial customers (e.g., mega data centers) and consumers (e.g., PC users). With 71 employees in 2010, ANC was organized into 10 departments, including R&D, Accounting, Production, Marketing and Sales, and so on. Its sales in 2010 was over RMB 20 million (\$2.42 million) with over 5,000 units sold. When starting up in 2000, all ANC had as its management information tool was a few personal computers. In 2003, ANC introduced a financial management system developed by Kingdee and an inventory management system by Vanward, two popular enterprise software vendors in China. Both systems turned out to be very useful in facilitating the firm's business growth. ANC's other departments, such as marketing and sales, however, still had not adopted any information systems by that time. **John Guo, co-founder and CEO of ANC**, believed the key to ANC's survival and constant growth lay in a more effective approach that enables the small firm to respond more promptly to the market changes and control its total costs more precisely. He felt an ERP system should enable the company to effectively accomplish its goals given the system's scientific nature despite its rigidity and inflexibility in many cases.

After several rounds of discussion, Guo and his management team set four primary goals for implementing ERP - integrating internal resources and centralizing data; efficiently managing capital; synchronizing material, capital, and information flows; and involving all departments in quality assurance and cost control. They also formed an ERP taskforce to carry out these goals. The actual responsibilities of leading the ERP development and implementation project mostly fell on the shoulder of Hu, a self-educated computer and network expert who had been working in ANC for five years but with no experience of administering an ERP system.

After a short period of testing in March 2014, the system was ready to roll out on a trial basis. A company-wide training program was provided to various department heads and key employees ahead of time, trying to teach them about the significance of the system and its operation principles and procedures. But the lack of attendance of the training program was a big problem despite Hu's hard push. Moreover, many operation workers on the shop floor who were supposed to use the system in their daily operation missed the training due to heavy production load.

The ERP system runs into plenty of unexpected problems in various departments over the trial period as described by several executives below.

- **Tim Li, vice president of finance**, "The work procedures of the finance department had been to examine and book-keep the data of purchase, sales, and inventory, which used to be reported monthly to us by other departments. Now we have to tabulate every record in the purchase and sales modules in the ERP system by ourselves before we can examine those data. Thus we have to understand every department's work process and know every product's model, specification, and code. My staff felt these were not on their job descriptions and it was just too difficult for them to concentrate on their own accounting duties with all these extra hassles."

- **Bill Yang, vice president of marketing and sales, shared Li's complaints**: "We used to be able to give our customer a quote directly based on the cost structure provided by the material control people in the production department. Now it's no longer the case. The material control unit won't send us their purchase information anymore. Instead we have to search for it in the system by ourselves, calculate the costs, and then quote the customer. The interface between the sales department and the material control department is now blurred and completely different from the past."

- **Aaron Wang, the material control manager**, "The ERP system runs a little smoother in our department than in the finance. But our purchase procedures were greatly changed as well. My buyers now have to analyze the structure of the materials needed by our UPS products and the

conditions of the supplier under the new system. Besides, the prices of our materials fluctuate dramatically. Sometimes we have to artificially change the purchase cycle so as to avoid the price hike and reduce costs, even when the system shows the materials needed are already out of stock. This is completely against the system's essential requirements. The biggest challenge yet came from the production department. Many operation workers have poor computer literacy and have rarely used computers before. They felt the production module in the ERP system was just too complex to run and was useless. Some of them gave it a try but gave it up right away. Moreover, they sometimes sneak around the system in order to meet the deadline and cut the cycle."

Considering the strong, overall resistance to the ERP system by users from several key departments, and in order to maintain stable production and the established modules, CEO Guo asked the developer to modify the system as much as the departments wished.

By now, the delivery cycle at ANC became unmanageable; the purchase cycle lost its elasticity; the departmental responsibilities were blurred; and the employees felt stressed out due to overtime work and lack of desire to participate. But the marketplace waits for nobody, and the competition is still the same severe as before, if not worse.

Question

Q 8(A): Analyze what went wrong in ANC's ERP implementation and how ANC could have done better?

Q8(B): "What does Guo need to do next when facing the situation by the end of the case?"

Mapping of Questions with Course Learning Outcome

| Question Number | CLO |
|-----------------|-------------|
| Q. 1 (A): | CLO-1 |
| Q. 1 (B): | CLO-1 |
| Q. 1 (C): | CLO-1 |
| Q. 1 (D): | CLO-1 |
| Q. 1 (E): | CLO-1 |
| Q. 1 (F): | CLO-1, CLO3 |
| Q. 1 (G): | CLO-1 |
| Q. 1 (H): | CLO-1 |
| Q. 2: | CLO2, CLO3 |
| Q. 3: | CLO2, CLO3 |
| Q. 4: | CLO-1, CLO2 |
| Q. 5: | CLO2 |
| Q. 6: | CLO3 |
| Q. 7: | CLO-1, CLO2 |
| Q 8(A): | CLO4 |
| Q8 (B): | CLO3, CLO4 |