

UNIT-I INTRODUCTION

PART-A

1. Define production planning and control.

Direction and coordination of firm's resources towards attaining the prefixed goals.

2. List the objectives of PPC.

- To organize the production facilities like machines, men, etc., to achieve stated
- production objectives quantity and quality time cost.
- Optimum scheduling of resources.
- To conform to delivery commitments.
- Materials planning and control.

3. What are the functions of production planning and control?

- Material function,
- Machines and equipment,
- Methods,
- Routing,
- Estimating
- Loading and scheduling,
- Dispatching,
- Expediting
- Inspection.

4. Define the term Standardization.

Standardization is a process of defining and applying the conditions necessary to ensure that given range of requirements can normally be met with a minimum of variety and in a reproducible and economic manner on the basis of the best current techniques.

5. What is the use of break-even point analysis?

It is used to make a choice between two machines tools to produce a given component

6. What is break even chart?

It is a graphical representation of the relationship between costs and revenue at a given time.

7. What are the phases of PPC?

- i. Preplanning Phase
- ii. Planning phase
- iii. Control phase

8. What is specialization?

It is a process where in particular firms concentrate on the manufacture of limited number of product types.

9. What are the disadvantages of simplification?

- i) Not able to meet the needs of wide range of customer preferences.
- ii) Possibility of loosing orders to competitors
- iii) Creates a constant source of conflict between marketing and production.

10. What is meant by simplification?

It is a process of reducing types of products within a definite range.

11. Define contribution

The difference between selling price and variable cost per unit is known as contribution or contribution margin.

$$\text{Contribution} = \text{Selling price} - \text{Variable cost}$$

12. Mention the various aspect of product

- Functional aspect
- Operational aspect
- Durability and Dependability
- Aesthetic aspect

13. What are the two types of continuous production?

- a) Mass Production b) Flow Production

14. Mention the types of production

- Job shop production
- Batch Production
- Mass Production

15. Define the term durability.

Durability refers to the length of the active life of the product under given working condition.

16. Define the term dependability.

Dependability refers to the reliability with which the product serves its intended function.

**Part-B**

1. What do you understand by production planning and control? Discuss its main elements.
2. Enumerates the activities involved in the production planning and control function under the Convenient points.
3. Explain different types of production systems. Differentiate between them
4. Explain the functional and operational aspects of product design.
5. Explain in detail the production aspects of product design.

UNIT –II WORK STUDY  
PART-A

1. What is meant by work study?

It is a term used to embrace the techniques of method study and work measurement which is employed to ensure the best possible use of human and other resources in carrying out a particular activity.

Work study=Method study + Work measurement

2. What is method study?

It is the systematic recording and critical examination of existing and proposed ways of doing work, as a means of developing and applying easier and more effective method reduced costs.

3. What are the objectives of method study?

- To present and analyze true facts concerning the situation.
- To examine those facts critically.
- To develop the best answer possible under given circumstances based on critical examination of facts.

4. What are the diagrams used for method study?

- Flow and string diagram,
- Models and templates,
- Cycle graph and chronocycle graph.

5. What is outline process chart?

The chart gives the bird's-eye view of the whole process by recording only the major activities and inspections involved in the process

6. Define multiple activity charts

It is a chart on which the activities of more than one subject are each recorded on a common time scale to show their inter relationship.

7. What is string diagram?

It is a scale plan or model on which a thread is used to trace and measure the path of workers, material or equipment during a specified sequence of events.

8. What is cycle graph?

It is a record of path movement, usually traced by a continuous source of light on a photograph.

9. What is chronocycle graph?

It is a special form of cycle graph in which the light source is suitably interrupted so that the path appears as a series of pear-shaped dots.

10. What is micro motion study?

It is used to make a detailed motion study employing either videotapes or motion pictures operating at a constant and known speed, when picture camera is utilized for study, then the procedure is known as micro motion study.

12. What is PMTS?

A work measurement technique whereby times established for basic human motions are used to build up the time for a job at the defined level of performance.

13. Define Productivity

It is the ratio of output produced to the input resources utilized in the production.

14. What is string diagram?

It is a scale plan or model on which a thread is used to trace and measure the path of workers, material or equipment during a specified sequence of events.

PART-B

1. Explain briefly the various steps involved in conducting the work study.
2. State and explain in brief the steps involved in conducting the method study procedure.
3. Briefly explain the various techniques of work measurement.
4. Define time study. List down the various steps in conducting a stopwatch time study.
5. Explain the following terms
  - a) Work sampling
  - b) Synthetic data
  - c) PMTS

## UNIT-III (PRODUCT PLANNING AND PROCESS PLANNING)

### Part-A

1. What is production planning?

It is the determination, acquisition and arrangement of all facilities necessary for future production products.

2. What is value analysis?

Value analysis is the systematic application of recognized techniques which identify the function of a product or service, establish a monetary value for the function and provide the necessary function reliably at that lowest overall cost.

3. What is process planning?

It is defined as the systematic determination of methods by which a product is to be manufactured economically and competitively.

4. What is meant by balancing?

It refers to the procedure of adjusting the times at workcentres to conform as much as possible to the require cycle time.

5. Define process

It is defined as any group of actions instrumental to the achievement of the output of an operations system in accordance with a specified measure of effectiveness.

6. What is the main function of process planning?

'Make or buy' decision is the main function of process planning. Here decision is made about which parts are to be made in the factory and which parts are to be bought from outside. Decision on whether to make or buy is taken by break even analysis.

7. What is the function of CAPP?

A computer aided process planning (CAPP) system offers the potential for reducing the routine work of manufacturing engines. At the same time, It provides the opportunity to generate production routings which are rational, consistent and optimal.

8. Mention the types of process planning

- a) Generative process planning
- b) Retrieval process planning

9. What are the advantages of generative process planning?

- a. Generate consistence process planning rapidly.
- b. New components can be plan easily.

10. What are the factors affecting process planning?

- i) Volume of production
- ii) Delivery dates for components
- iii) Accuracy and process capability of machines.
- iv) The skill and expertise of manpower.
- v) Material specifications
- vi) Accuracy requirements of components or parts.

## PART-B

1. What is value analysis? Describe the basic steps involved in the value analysis.
2. Explain the importance of process planning with reference to production control. Discuss the activities in process planning
3. Compare and contrast the manual process planning with CAPP
4. What is meant by machine loading? Also enumerate the various methods to the cycle time to a minimum
5. What do you mean by machine balancing? Also explain the effect of balancing on number of machines required with an illustration.
6. Write short notes on analysis of process capacities in a multiproduct system.

## Unit-IV (Production scheduling)

### Part-A

1. What is loading?

It is defined as the assignment of work to a facility. The facility may be men, machine, a Department, a group of men, group of machines of a plant.

2. What is scheduling?

It is time phasing of loading. It is defined as the assignment of work to a facility specifying the particular sequence of the work and the time of actual performance.

3. What are the different techniques of loading and scheduling?

- i) Master scheduling
- ii) Perpetual loading
- iii) Order scheduling
- iv) Loading by schedule period

4. What is master scheduling?

It gives an overall picture of the jobs. It is mainly used for small corners such as research and development laboratories, computer centre, foundries, repair shop etc.

5. What are the advantages of master scheduling?

- i) The overall cost of operating is minimum than any other loading and scheduling systems.
- ii) This method is very simple to understand.
- iii) This could be even maintained by clerical staff.
- iv) It could be easily kept current.

6. What are the disadvantages of master scheduling?

- i) The detailed information cannot be obtained.
- ii) It is efficient for small units only.

7. What is line balancing?

Assembly line balancing is associated with a product layout in which products are processed

8. What are the advantages of assembly line?

- i) Uniform rate of production.
- ii) Less material handling
- iii) Less work-in-process.
- iv) Easy production control.
- v) Effective use of facilities/labour.
- vi) Less congesting.

9. What are the steps in solving line balancing problems?

- i) Define task
- ii) Identify precedence requirements.
- iii) Calculate minimum number of workstations required to produce desired output.
- iv) Apply heuristics to assign task to each station.
- v) Evaluate effectiveness and efficiency.
- vi) Seek further improvement.

10. What are the advantages of Gantt load chart?

- i) This system is quite simple.
- ii) This could be maintained even by electrical staff after some training.
- iii) Overall cost of operation is small.

11. What are the disadvantages of Gantt load chart?

From the load chart it is not possible to learn the exact time of a work. It tells only the total load ahead of a department or a facility.

12. Explain the Kanban system.

Kanban system is a simple information system used by a work centre to signal its supplier work centre to request a replacement container and to authorize production of another container of that particular item.

13. What is production sequencing?

Determining the order of processing of all jobs at each work centre.

14. What is expediting?

Monitoring progress, taking corrective actions to minimize deviations. as they pass through a line of work centres. An assembly line can be considered as a production sequence where parts are assembled together to form an end product. The operations are carried out at different workstations situated along the line.

## PART-B

1. Explain the procedure by which scheduling 2 jobs in m machines can be done with suitable Example
2. Write short notes on:
  - a) Aggregate run-out method of batch scheduling. b) Line of balance method
3. Discuss the concepts, inputs, characteristics, working, outputs, and benefits of MRP
4. What are the functions of dispatching? Explain the various documents raised
5. What is progressing? Explain its function? Also write short notes on 'recording progresses

## Unit –V (Inventory control and Recent trends in PPC)

1. What are the types of inventories?
  - i) Raw materials, ii) Bought out parts, iii) Work-in-process inventories, iv) Finished goods inventories v) Maintenance, repair and operating stores.
2. What are the benefits of inventory control?
  - i) Improvement in customer's relationship because of the timely delivery of goods and services.

Smooth and uninterrupted production and hence no stock out.
  - ii) Efficient utilization of working capital.
  - iii) Helps in minimizing loss due to deterioration, obsolescence damage and preliferae.
  - iv) Economy in purchasing.
  - v) Eliminates the possibility of duplicate ordering.
3. What are the types of inventories?
  - i) Raw materials, ii) Bought out parts, iii) Work-in-process inventories, iv) Finished goods inventories v) Maintenance, repair and operating stores.
4. What is inventory turnover?

If the company maintains inventories equal to 3months consumption. It means that inventory turnover is 4 times a year, i.e., the entire inventory is used up and replaced 4 times a year.
5. 6. Define the term Re-order quantity.

This is the quantity of material to be ordered at the re-order level. Normally this quantity equals the economic order quantity.
6. What is demand?

It is the number of items required per unit of time. The demand may be either deterministic or probabilistic in nature.
7. Define the term order cycle.

The time period between two successive orders is called order cycle.

What is lead time?  
The length of time between placing
8. What are the various costs associated with inventory?
  - i) Purchase cost, ii) Capital cost, iii) Ordering cost, iv) Holding costs, v) Shortage cost.
8. What is an Economic order quantity?

It is the quantity to be ordered is one that strikes a balance between the inventory carrying cost and the inventory carrying cost. This quantity is referred to as Economic order quantity.
9. What is safety stock?

The additional stock of material to be maintained in order to meet the unanticipated increase in demand arising out of uncontrollable factors.
10. What are the advantages of ABC analysis?

This approach helps the manager to exercise selective control and focus his attention only on a few items.

13. What are the limitations of ABC analysis?

ABC analysis is a fundamental tool for exercising selective control over numerous inventory items but in present for do not precise consideration of all relevant problems of inventory management. It is not one time exercise and items are to be reviewed and recategorised periodically

14. What is inventory?

An inventory is a stock of an item (or) idle resource held for future use.

### PART-B

1. What do you understand by inventory control? Explain the purpose of maintaining inventory in any production unit

2. What is EOQ? Derive the expression for EOQ when the demand of the item is uniform, the production rate is infinite and no stock-outs are allowed

3.a) Explain the terms: lead time, stock out, buffer stock, inventory carrying cost

b) Distinguish between in-process inventory, safety stock inventory and seasonal inventory

4. Describe the fixed period quantity inventory model? Also compare and contrast P-system with Q-system

5. What is selective control of inventory and explain various selective control techniques.

6. What is ABC analysis? Explain its significance in the inventory control with suitable example.