

USN

--	--	--	--	--	--	--	--

## Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 Operations Management

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Define operations management and explain briefly how the production systems are classified. (10 Marks)
- b. Explain briefly with a schematic model the functions within business organization and operation management. (10 Marks)

OR

- 2 a. What is decision making? Briefly explain the characteristics of operations decisions. (10 Marks)
- b. Explain Break even analysis with necessary equations, graph and assumptions (10 Marks)

### Module-2

- 3 a. Define forecasting and explain briefly the steps involved in forecasting process. (10 Marks)
- b. Briefly explain the components of time series method with sketches. (10 Marks)

OR

- 4 a. Explain the following forecasting methods:
  - (i) Exponential smoothing.
  - (ii) Linear regression.(10 Marks)
- b. A company adopts method of least squares to develop a linear trend equation for the data as shown in the table below:

Year (x)	1	2	3	4	5	6	7	8	9	10	11
Shipment in tones (y)	2	3	6	10	8	7	12	14	14	18	19

Calculate the trend forecast for the year 12 and 20.

(10 Marks)

### Module-3

- 5 a. Define the following :
  - (i) Design capacity
  - (ii) System capacity
  - (iii) Capacity planning
  - (iv) Facility layout.(10 Marks)
- b. Sketch and explain any two types of layouts. (10 Marks)

OR

- 6 a. What factors determines the types of layout used in an organization? (05 Marks)
- b. What are the determinants of effective capacity and briefly explain any two of them? (05 Marks)
- c. A metals processing firms wishes to install enough automatic moulders to produce 2,50,000 good castings per year. The moulding operation takes 1.5 minutes per casting, but its output is typically about 3% defective. How many moulders will required if each one is available for 2000 hours (of capacity) per year? (10 Marks)

**Module-4**

- 7 a. Define Aggregate planning and master scheduling. Explain the pure strategies used for aggregate planning in brief. (10 Marks)
- b. A firm has developed the following demand forecast in units for a item which is influenced by seasonal factors. Suppose the firm estimates that it costs Rs 150/unit to increase production rate Rs 200/unit to decrease production rate Rs 50/unit/month to carry the inventory and Rs 100/unit subcontracted. Compare the costs incurred if the pure strategies are followed.

Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug
Forecast Demand	270	220	470	670	450	270	200	370

(10 Marks)

**OR**

- 8 a. Discuss the general techniques of aggregate planning process with flow chart. (08 Marks)
- b. State the functions of Master Scheduling. (04 Marks)
- c. What are the objectives and importance of Aggregate planning? (08 Marks)

**Module-5**

- 9 a. What is a Material Requirement Planning? What are the various steps involved in the implementation of MRP? (08 Marks)
- b. What are the benefits and limitations of MRP? (06 Marks)
- c. Define CRP and BOM. (06 Marks)

**OR**

- 10 a. What is Supply Chain Management? What are its functions? (08 Marks)
- b. Briefly explain Make or Buy decision. (06 Marks)
- c. Explain the different approaches to SCM. (06 Marks)

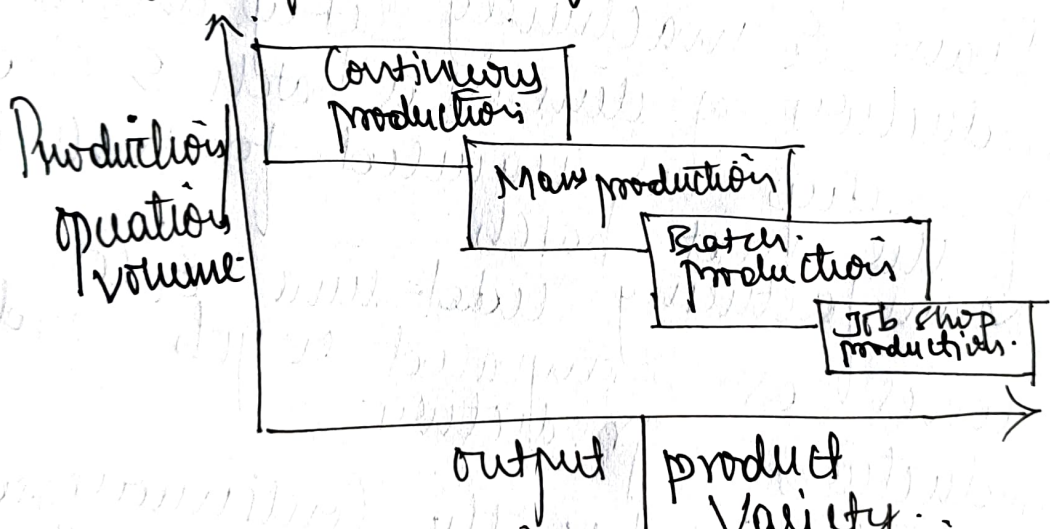
\* \* \* \* \*

1. a Define operation management & explain briefly how the production systems are classified.

sol

Operation management is the process, which combines & transforms various resources used in the production operation subsystem of the organization into value added product / services in a controlled manner as per the policies of the organization.

Classification of production system.



Classification of production systems

Job shop production

Job-shop production is defined by the production of one or few quantities of products designed & manufactured to the specifications of customer within a predetermined time & cost.

- ① Ques It is characterized by.
1. High variety of product & low volume.

2. use of general purpose m/c's & facilities.
3. Highly skilled operators.
4. Large inventory of material, tools, parts.

## Batch production

Batch production is a type of manufacturing in which jobs are handled through functional departments in lots or batches, with each lot having a unique routing. Batch production is distinguished by the features.

1. Special production runs.
2. Plant & machinery are flexible.
3. Plant & machinery setup is used for the production of item in a batch & change of setup is required for producing the next batch.
4. Manufacturing lead-time & cost are lower as compared to job order production.

## Mass production

Mass production refers to the continuous production of discrete parts or assemblies. The high volume of production justifies this production system. Machines are setup in a line or product layout.

- It is characterized by.
1. Cost of product & process sequence.

2. Large volume of products.
3. Shorter cycle-time of production.
4. Lower in process inventory.
5. Perfectly balanced production lines.

### Continuous production

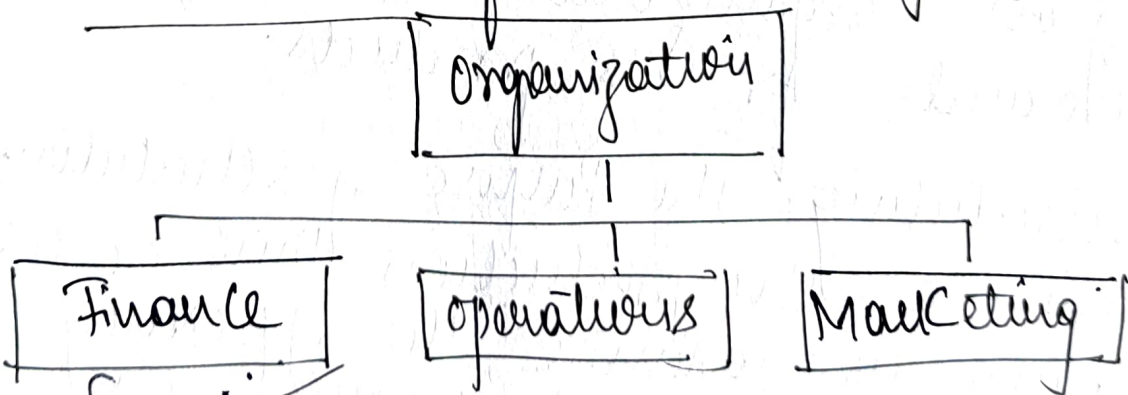
Production facilities are organized in accordance with the sequence of production operations beginning with the first operations & ending with the finished product.

- It is characterized by:
1. Dedicated plant & equipment with zero flexibility.
  2. Material handling is fully automated.
  3. Process follows a predetermined sequence of operations.

1.b

Explain briefly with a schematic model the functions of business organization & operations management.

### Functions of business organization



③

~~Gain~~

Finance:- is responsible for securing financial resources, allocating those resources throughout the organization & providing funds for operations.

Marketing is responsible for assessing consumer wants & needs, & selling & promoting the organization's goods or services.

operations:- are responsible for producing the goods or providing the services offered by the organization.

operations management functions

\* Forecasting:- It is used to determine how to allocate the budgets & resources for an upcoming period of time.

\* Capacity planning:- It is the process of determining the production capacity needed by an organization to meet changing demands for its products.

\* Scheduling: The purpose of scheduling is to minimize the production time & costs. It aims to maximize the efficiency of the operations & reduce costs.

(4)

\* Assuring Quality: - Quality management is concerned with controlling activities with the aim of ensuring that products & services are fit for their purpose & meet the specifications.

\* Motivating Employees: - Effectiveness of job design, rewards, employee participation, training.

Q. a. What is decision making? Briefly explain the characteristics of operational decisions.

Sol Decision making is a process of consciously choosing an alternative among the several available. It is a cognitive ability.

Characteristics of operational decisions.

\* Operational decisions range from simple judgments to complex analysis.

\* Judgemental decisions are made by basic knowledge, experience & common sense.

\* Both subjective & objective data is used to arrive at a choice.

(5)

- \* The decisions are characterized by:
  - The significance of the decision being made.
  - The time & cost involved.
  - The degree of complexity of the decision being made.

\* Significant decisions :- deserve more consideration than trivial or routine one.

\* Time availability & cost analysis.

- \* Decision Complexity :- increases when
  - many variables are involved by the variables are highly interdependent or sequentially related. &
  - the data describing the variables are incomplete or uncertain.

Q.6 Explain break even analysis with necessary equations, graph & assumptions.

Break even analysis - (BEA).

This technique helps us to determine the volume of business operations at which the total costs become equal to the total revenue. i.e. no profit or no loss situation.

6



For any investment, it is important to know the BEP vis-a-vis level of market demand & thus the safety margins of operation.

At BEP, total revenue = total cost.

$$\text{Total revenue} = \text{Total fixed cost} + \text{total variable cost.}$$

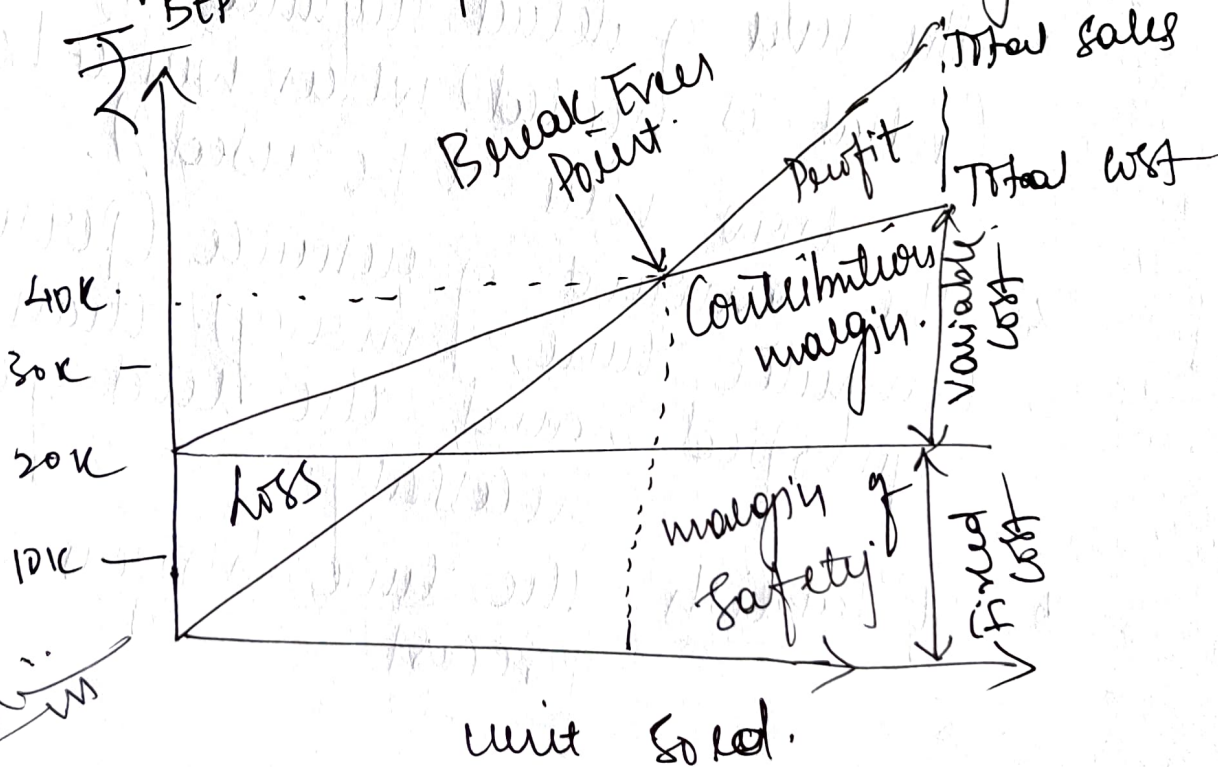
$$(\text{Price/unit}) \times \text{volume at BEP} = \text{Total fixed cost} + (\text{variable cost/unit}) \times \text{volume at BEP.}$$

$$P \times V_{\text{BEP}} = FC + VC \times V_{\text{BEP}}$$

$$\text{Hence, } V_{\text{BEP}} = FC / (P - VC)$$

As  $(P - VC)$  is known as contribution margin from the unit sold. We have.

$$V_{\text{BEP}} = FC / \text{Contribution margin}$$



The advantage of BEA are that (i) it is very simple to understand, (ii) it addresses profitability of an investment which is very important, (iii) it allows quicker manipulation of the model & easier sensitivity analysis.

3a. Define forecasting & explain briefly the steps involved in forecasting process.

8/

Forecasts are a basic input in the decision processes of operations management because they provide information on future demand.

- \* Determine the purpose / use of the forecast.
- \* The level of detail required in the forecast (what is needed? when will it be needed? how will it be used?).
- \* The amount of resource (personnel, computer time, money) that can be justified, and the level of accuracy necessary.
- \* Establish the time horizon of the forecast.

⑧ Ques

- \* It is the length of time in the future for which the forecast is to be prepared.
- \* The forecast must indicate a time interval.
- \* Accuracy of forecast decreases as the time horizon increases.

### Forecasting time horizons.

- \* Short-range forecast: - are typically for daily, weekly, or monthly sales demand for the future, approximately two years into the future, depending on the Company & the type of industry.
- \* A long-range forecast, - is usually for a period longer than two years into the future. A long-range forecast is normally used for strategic planning to establish long-term goals, plan new products for changing markets, enter new markets, develop new facilities, develop technology.

⑨ Obtain, clean, & analyse appropriate data

- \* Statistical data & accumulated expertise who collect the data.
- \* The data may need to be "cleaned" to get rid of outliers & obviously incorrect data before analysis.
- \* Obtaining the data can involve significant effort.

Select the forecasting technique / models

- \* Qualitative & Quantitative.

- \* Make the forecast.

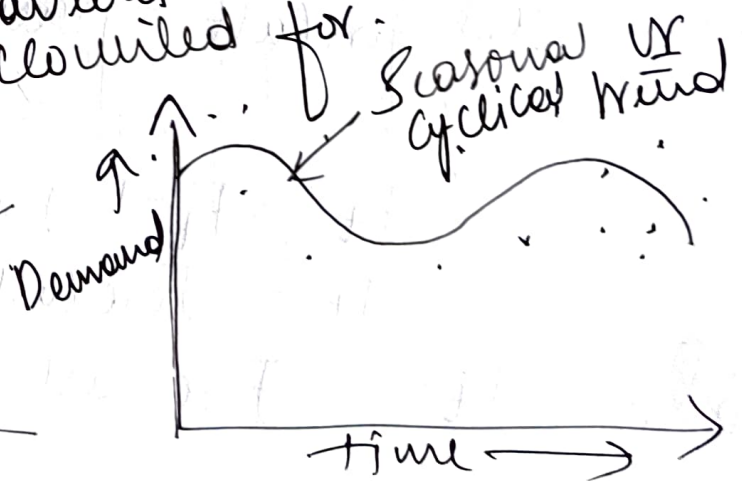
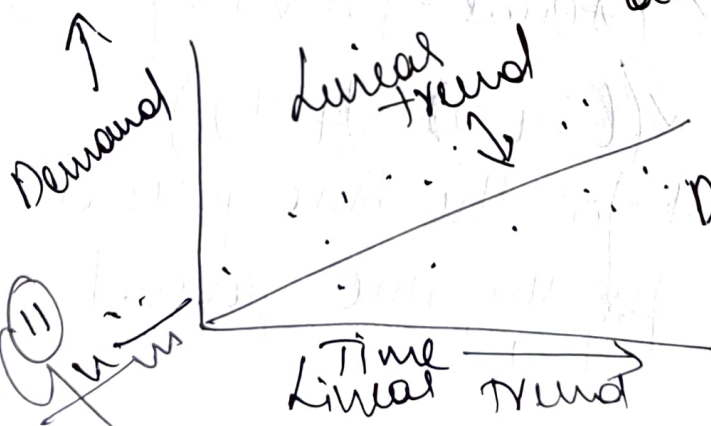
- \* Implement result & monitor forecasts across to adjust when needed.

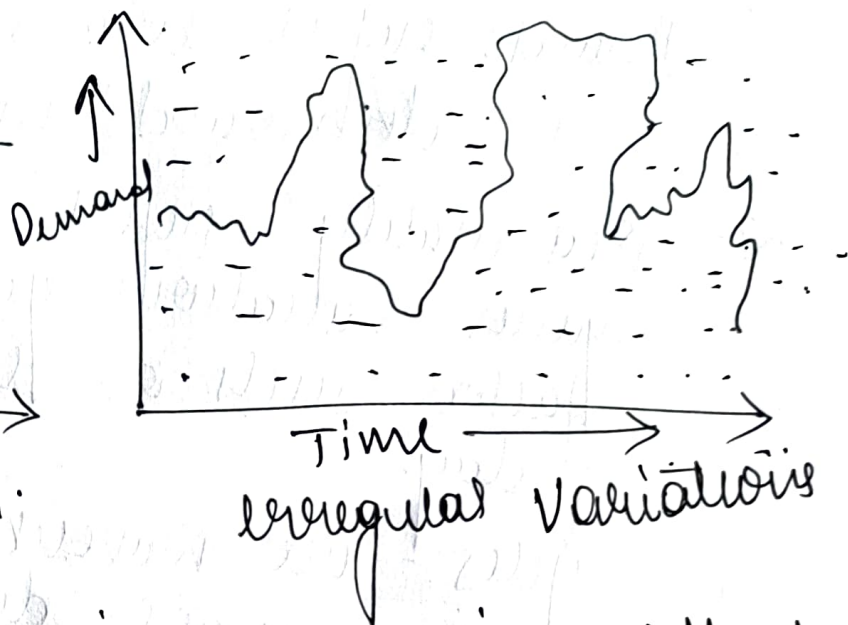
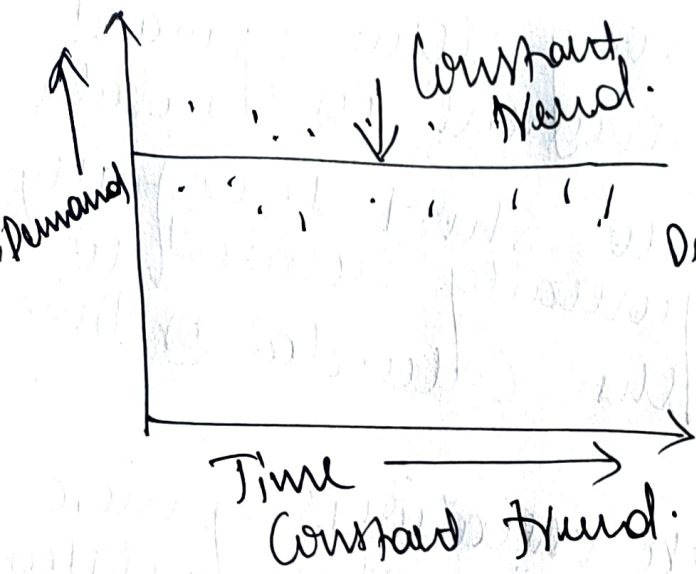
3b Briefly explain the components of time series method with sketches.

Sol The most general type of time series is influenced by all four components; a stable pattern consisting of trend, cyclical, & seasonal components observed in the presence of the error components.   
 random

10  
Gm's

1. Trend: refers to a long-term upward or downward movement in the data.
2. Seasonality: refers to short-term, fairly regular variations generally related to factors such as the calendar or time of day.
3. Cycles: all wave-like variations of more than one year's duration. These are often related to a variety of economic, political, & even agricultural conditions.
4. Irregular variations all due to unusual circumstances such as severe weather conditions, strikes, or a major change in a product or service.
5. Random variations: all residual variations that remain after all other behaviours have been accounted for.





- 4a. Explain the following forecasting methods
- (i) Exponential Smoothing
  - (ii) Linear regression.

Sol

### Exponential Smoothing

In this type each new forecast is based on the previous forecast plus a percentage of the difference between that forecast & the actual value of the series at that point.

$$\text{Next forecast} = \text{previous forecast} + \alpha (\text{Actual} - \text{previous forecast})$$

$$F_t = F_{t-1} + \alpha (D_{t-1} - F_{t-1})$$

$F_t$  = Forecast for the time period 't'.

⑫  $F_{t-1}$  = Forecast for the time period "t-1".

$\alpha$  = Smoothing Constant ( $0 \leq \alpha \leq 1$ )

$D_{t-1}$  = Actual demand for the time period "t-1".

for example:

Suppose the previous forecast was 42 units.

Actual demand was 40 units

&  $\alpha = 0.10$ .

The new forecast would be computed as follows.

$$F_t = 42 + 0.10(40 - 42) = 41.8.$$

Then, if the actual demand turns out to be 43, the next forecast would be:

$$F_t = 41.8 + 0.10(43 - 41.8) = 41.92.$$

ii) Linear regression.

\* Linear regression is a method of forecasting in which a mathematical relationship is developed between demand & some other factor that causes demand behaviour.

\* A linear trend line relates a dependent variable to one independent variable, time, in the form of a linear equation

(15) Yours

$$(y = a + bx)$$

\* where  $a$  = intercept (at period 0)  
 $b$  = slope of the line  
 $x$  = the time period  
 $y$  = forecast for demand for period  $x$ .

The parameters of the linear trend line can be calculated using the least square formulas for linear regression.

$$b = \frac{\sum xy - n\bar{x}\bar{y}}{\sum x^2 - n\bar{x}^2}$$

$$a = \bar{y} - b\bar{x}$$

$n$  = number of periods

$\bar{x} = \frac{\sum x}{n}$  = the mean of the  $x$  values

$\bar{y} = \frac{\sum y}{n}$  = the mean of the  $y$  values.

4b. A Company adopts method of least squares to develop a linear trend equation for the data as shown in the table below.

Year ( $x$ )	1	2	3	4	5	6	7	8	9	10	11
Shipment in tones ( $y$ )	2	3	6	10	8	7	12	14	14	18	19

Calculate the trend forecast for the year 12 & so.

14/11/20



509

Middle year.  $\rightarrow$

year. $x$	year. $x-6=x$	$y$ tones	$xy$	$x^2$
1	-5	2	-10	25
2	-4	3	-12	16
3	-3	6	-18	9
4	-2	10	-20	4
5	-1	8	-8	1
6	0	7	0	0
7	1	12	12	1
8	2	14	28	4
9	3	14	42	9
10	4	18	72	16
11	5	19	95	25

---

$\Sigma x = 0$     $\Sigma xy = 119$     $\Sigma xy = 181$     $\Sigma x^2 = 110$

$$a = \frac{\Sigma y}{n} = \frac{113}{11} = 10.27$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{181}{110} = 1.645$$

$$y = a + bx = 10.27 + 1.645x$$

$$y_{12} = x = 12 \quad x_1 = 12 - 6 = 6$$

$$y_{12} = 10.27 + 1.645 \times 6 = 20.14$$

$$y_{20} = 10.27 + 1.645 \times 14 = 33.30$$

⑮ Quins

5.a Define the following.

- i) Design Capacity.
- ii) System Capacity.
- iii) Capacity planning.
- iv) Facility layout.

Sol i) Design Capacity: - Design Capacity is the planned (engineered) rate of output of goods or services under normal, or full scale, operating conditions.  
Ex: - of Sugar, Cement, Automobile.

ii) System Capacity: - The maximum output of a specific product or product mix that the system of workers & machines is capable of producing as an integrated whole.

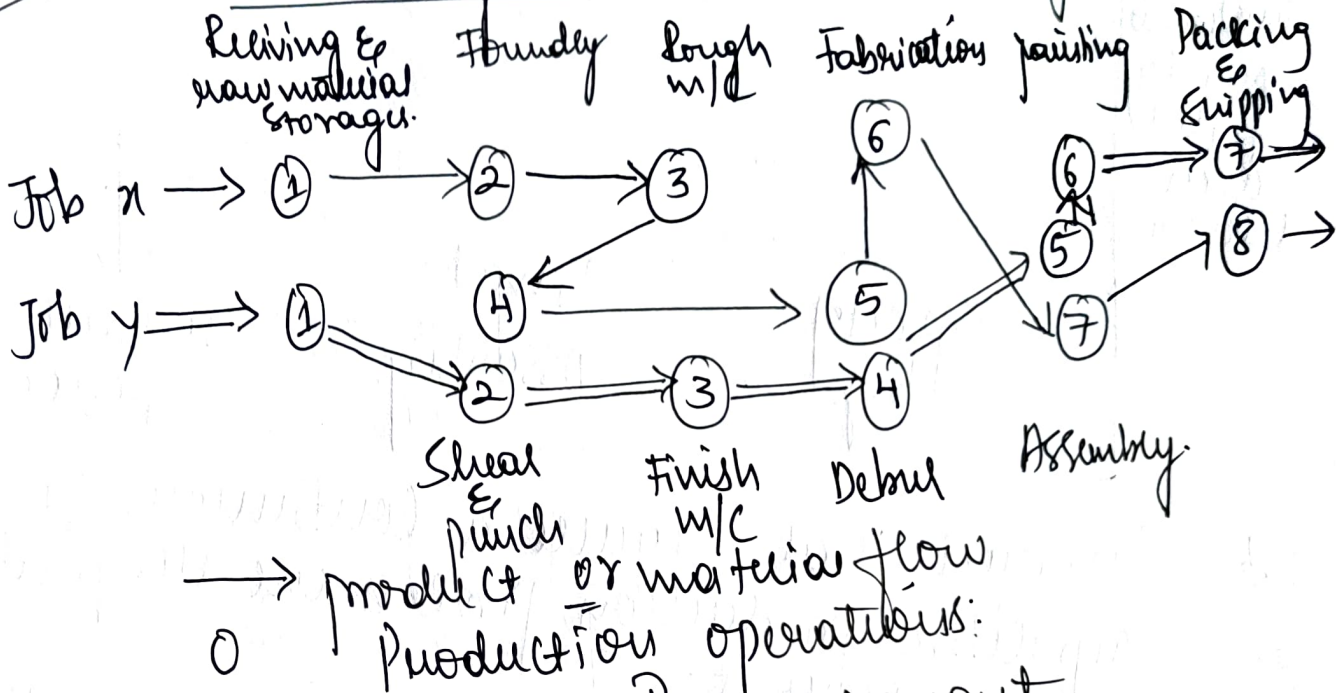
iii) Capacity planning: - is determining optimum utilization of resource (human & equipment/machines).

iv) Facility layout: - is the physical arrangement of various department/unit, machine/equipments within the departments, stores, walking spaces, etc. within the plant premises.

5b. Sketch & explain any two types of layouts:

8/1

i) Process layout      ii) Product layout



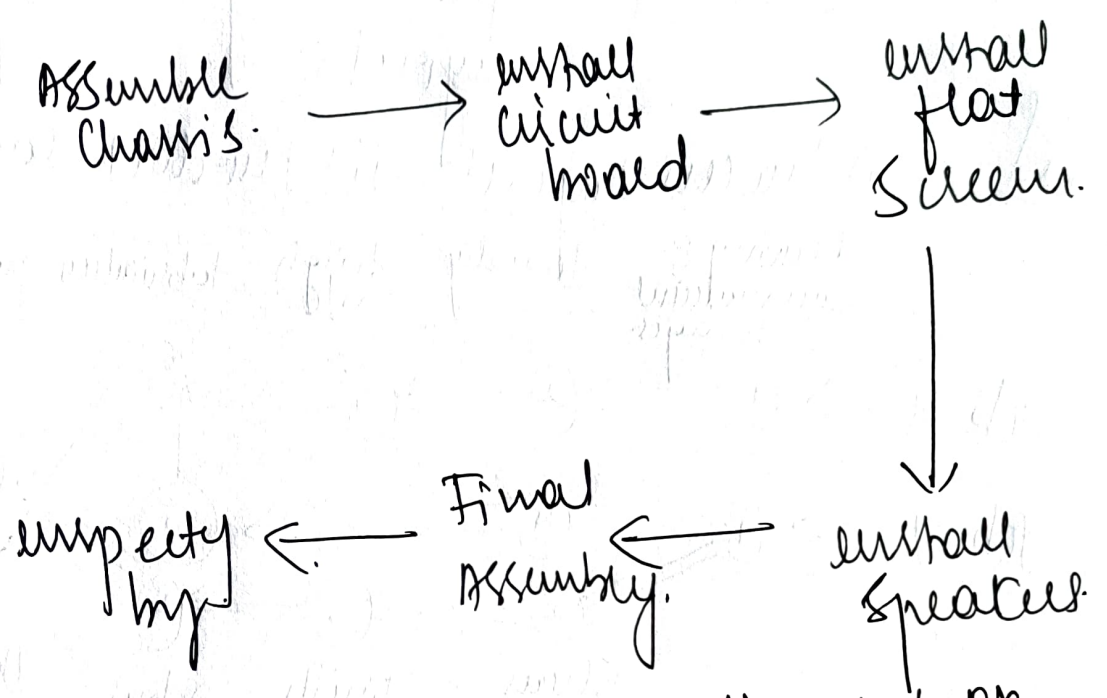
Process layout

- \* The process layout arranges workflow around the production process so workers performing similar tasks, all grouped together.
- \* Product pass from one work station to another (but not necessarily to every work station).
- \* This layout is best for firms that produce small numbers of a wide variety of product.

17/

ii)

Product  
(assembly  
line) layout  
assembly  
of flat  
Screen  
television



\* Product that require a continuous or repetitive production process use the product layout.

\* When large quantities of a product must be processed on an ongoing basis, the work stations or departments are arranged in a line with products moving along the line.

Ex: - Automobiles, food processing plants, pharmaceuticals, consumer goods, etc.

18  
~~Ques~~

6a. What factors determine the types of layout used in an organization?

Sol

- \* Space utilization
- 1 Shipping & Receiving.
- \* Ease of communication & support.
- \* Impact on employee morale & job satisfaction.

2 Promotional value (small business, where visitors in the form of customers, vendors, investors, etc.).

- \* Safety - The facility layout should enable the firm to effectively operate in accordance with occupational safety & health administration guidelines & other legal restrictions.

6b. What are the determinants of effective capacity & briefly explain any two of them?

Sol

- i) Facilities factors.
- ii) Product / services factors.
- iii) Process factors.
- iv) Human resource factors.

19

- \* Operational factors.
- \* External factors.

Product / Service factors:- Uniformity in Product / Service provides opportunities for standardization of methods & materials. This leads to greater effective capacity.

Process factors:- The quantity & quality Capability of a process or equipment increases the rate of output & hence the effective capacity.

6C. A metal moulding firm wishes to install enough automatic moulders to produce 2,50,000 good castings per year. The moulding operation takes 1.5 min per casting, but its output is typically about 3% defective. How many moulders will be required if each one is available for 2000 hours (of capacity) per year?

Ex

$$\text{System Capacity} = \frac{\text{Actual output}}{\text{Efficiency}}$$

20

$$\begin{aligned}
 &= \frac{2,50,000}{0.97 (100\% - 3\%)} \\
 &= 2,57,732 \text{ units/year.} \\
 &= \frac{2,57,732 \text{ units/year.}}{2000 \text{ hrs/year.}} \\
 &= 129 \text{ units/hr.}
 \end{aligned}$$

Given: Molding Capacity = 1.5 min/unit  
 $\times 1 \text{ hrs} / 60 \text{ min}$

$$= 40 \text{ units/mach-hrs.}$$

$$\text{No. of machine, } N = \frac{129 \text{ units/hr.}}{40 \text{ units/hr.}}$$

$$= 3.2 \text{ molding eqpt.}$$

7. a Define aggregate planning & master scheduling. Explain the strategies used for aggregate planning in brief.

Q1 Aggregate planning (AP)

Aggregate levels of sales & operations planning for product lines or families  
 AP determines the quality & timing of production of the entire product

Q1

family of an organization for the entire medium-term future. (Generally 6-18 months).  
Called the "planning horizon".

Master production schedule (MPS), also called the master schedule, specifies which end items or finished products a firm is to produce, how many are needed & when they are needed.

Aggregate planner adapts a number of strategies:

- 1) Maintain a level workforce.
- 2) Maintain a steady output rate.
- 3) Match demand period by period.
- 4) Use a combination of decision variables.

The first three strategies are "pure" strategies because each has a single focal point, the last strategy is "mixed" because it lacks the single focus.

Pure strategies:-

- a) Building & utilizing inventory through constant workforce.

22) ~~Given~~ The company can use constant work force during the planning horizon.



which will result into a constant output during each period in the planning horizon.

b) varying the size of the work force  
 The company can employ varying work force such that the output matches with the demand in each period of the planning horizon.

This pure strategy can be implemented through hiring & firing of employees.

7.6 A firm has developed the following demand forecast in unit for a item which is influenced by seasonal factors.  
 Suppose the firm estimates that it costs Rs 150/unit to increase production, Rs 200/unit to decrease production, Rs 50/unit/month to carry the inventory & Rs 100/unit sub contracted.  
 Compare the costs incurred if the pure strategies are followed.

Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug
Forecast Demand	270	220	470	670	400	270	200	370

23) Q. 7.6

Sol (Chase Strategy)

Quarter	Forecast Demand units	Costs of increasing the production (Rs)	Cost of decreasing the production (Rs)
1	270	-	-
2	220	-	10,000
3	470	37,500	-
4	670	30,000	-
5	450	-	44,000
6	270	-	36,000
7	200	-	14,000
8	370	25,000	-

Total Cost = Rs 1,97,000

(Inventory or level production strategy)

Quarter	Forecast Demand units	Regular Production	Inventory
1	270	365	$365 - 270 = 95$
2	220	365	$95 + 365 - 220 = 240$
3	470	365	$240 + 365 - 470 = 135$
4	670	365	$135 + 365 - 670 = -170$
5	450	365	$-170 + 365 - 450 = -255$
6	270	365	$-255 + 365 - 270 = -160$
7	200	365	$-160 + 365 - 200 = 5$
8	370	365	$5 + 365 - 370 = 0$

24 ~~Q~~ Avg production rate =  $2920 / 8 = 365$

\* Sub Contracting @ Rs 100/unit: Assume regular production as 200 units.

Quarter	Demand forecast	Production unit	Subcontract unit	extra cost at Rs 100/unit
1	200	200	70	7000
2	220	200	20	2000
3	470	200	270	27000
4	670	200	470	47000
5	450	200	250	25000
6	270	200	70	7000
7	200	200	0	0
8	370	200	170	17000

Total cost of the Strategy = Rs. 1,32,000

8a. Discuss the general techniques of aggregate planning process with flow chart.

8b

Aggregate planning consists of techniques that range from informal trials to formal & advanced mathematical methods.

Trial- & Error technique using Graphs & Spreadsheets.

25  
Ques

Trial- & -error approaches consist of developing simple table or graphs - that enables planners to visually compare projected demand requirements with existing Capacity.

## 1. Linear Programming.

Linear Programming is an optimization approach that enables the user to determine the maximum profit or minimum operating cost based on the availability of the limited resources & other constraints.

A unique linear programming model known as - transportation model can get the aggregate plan that balance Capacity & demand while minimizing cost.

## 2. Mixed - integer Programming.

Mixed - integer Programming is more beneficial to an aggregate plan prepared for a product family where the plan is the sum of the plans for independent product lines.

### 3. Linear decision rule

The linear decision rule is an optimization technique - that minimize the total cost of production using a set of cost-approximation functions to get a single quadratic equation.

8b. State the functions of master scheduling.

Sol. The functions -

- \* Translating aggregate plans, and items in specific time periods.
- \* Evaluating alternative master

basis, initially - schedule & error  
requirement & verified. Material & Capacity.

- \* Generating material & Capacity requirement
- \* Facilitating information processing - when deliveries have to be made.
- \* Effectively utilizing the Capacity - load utilization, finance, marketing & equipment for m/c.

27  
Guw

8C. What are the objectives & importance of aggregate planning?

Q1

The objective of aggregate planning are:-

- \* To develop an economic strategy for meeting demand through:
  - Adjusting capacity.
  - Producing at a constant rate & using inventory to absorb fluctuations in demand.
  - Hiring & firing workers to match demand.
  - Increasing or decreasing working hours.
  - Subcontracting work to other firms.

The importance of Aggregate planning.

- \* Achieving financial goals by reducing overall variable cost & improving the bottom line.
- \* Maximum utilization of the available production facility.
- \* Provide customer delight by matching demand & reducing wait time for customers.

Q. a what is a material requirements planning? what are the various steps involved in the implementation of MRP?

SA

- \* A technique of determining the quantity & timing for the acquisition of dependent demand items needed to satisfy the MRP requirement.
- \* A computerized inventory control & production planning system.
- \* The main objective of any inventory system is to ensure that material is available when needed.

The steps involved in the implementation of MRP are:-

- 1) Identifying requirements:
  - \* Quantity on hand.
  - \* Quantity on open purchase order.
  - \* Quantity in process planned for manufacturing.
  - \* Quantity committed to existing order.
  - \* Quantity forecasted.

Steps 1:- important information MRP is

- \* Company Sensitive
- \* Location Sensitive
- \* Date Sensitive

Step 2:- Running MRP - Creating the Suggestions

- \* Critical items
- \* Expedite items
- \* Delay items

Step 3:- Firming the suggestions

- \* Manufacturing orders
- \* Purchasing orders
- \* Various reports

Qb. What are the benefits & limitations of MRP?

Sol

Benefits of MRP:

- \* Low levels of in-process inventories
- \* Ability to track material requirements
- \* Ability to evaluate capacity requirement
- \* Means of allocating production time.



- \* Access work load requirements
- \* Issue work order & schedule production
- \* Supply customer with project delivery planning.

## Limitation of MRP

- \* Only looks at materials, ignores capacity, shop floor conditions.
- \* Requires user discipline.
- \* Require accurate information/data.
- \* Requires valid MPS.
- \* Not appropriate for all areas.
- \* High volume production.
- \* Projects.

g.c. Define CRP & BOM.

So Capacity requirement planning

also known as CRP in MRP

business to plan a head to determine how large their future inventory capacity needs to be in order to meet demand.

## Bill of material (BOM)

A listing of all the subassemblies, intermediate parts, & raw material that go into a parent assembly, showing the quantity of each required to make an assembly.

10.a. What is Supply Chain Management? What are its functions?

Sol → Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacture, warehouses, & stores, so that merchandise is produced & distributed at the right quantities, to the right locations & at the right time in order to minimize system-wide costs while satisfying service requirements.

Functions of Supply Chain Management

(32)  
~~Yuv~~

# 1. Purchasing.

The first function of supply chain management is purchasing. In the manufacturing process, raw materials are required to produce goods & products.

# 2. Operations.

Demand planning & forecasting are usually required before material can be procured, as the demand market will dictate how many units to be produced & how much material is required for production.

# 3. Logistics.

Logistics is the part of supply chain management that co-ordinates all aspects of planning, purchasing, production, warehousing & transportation so that the products are available to the end-consumer without any hindrance.

# 4. Resource management

Production consumes raw material, technology, time & labor, Resource management ensure that the

rights resources all allocated to the  
rights activities in an optimized manner.

5. Information workflow

information showing & distribution is  
what keeps all of the other functions  
of supply chain management on  
track.

10. b. Briefly explain make or  
buy decisions

Def

A make-or-buy decision is an act  
of choosing between manufacturing  
a product in house or purchasing  
it from an internal or supplier.

it is also referred as an outsourcing  
decision. a make-or-buy decision  
compares the costs & benefits associated  
with producing a necessary good or  
service internally to the costs &  
benefits involved in hiring an  
supplier for the resources  
requirement.

34 Ques outside

\* A make-or-buy decision is an act of choosing b/w manufacturing a product in-house or purchasing it from an external supplier.

\* Make-or-buy decisions, like outsourcing decisions, speak to a comparison of the costs & advantages of producing in-house versus buying it elsewhere.

\* There are many factors at play that may tilt a company from making an item in-house or outsourcing it, such as labour costs; lack of expertise

\* Companies use quantitative analysis to determine whether making or buying is the most cost-efficient method.

10.c. Explain the different approaches to SCM.

Sol. The different approaches to SCM all (in meeting big demand) predicting launch & early stage demand

1) The company could use data analytics around product sales performance of similar products in previous years.

35

or look for geographic / retailer location to point to demand take up at the very Company. early stages of launch - & use that information to decide the level of follow-up order & production.

2. Multi-strand manufacturing :- The Company could estimate its base load, supply the initial & follow-up production quantities that will be needed & place corresponding order for components with upstream suppliers around the world.

3. Lead time & optimize positioning :- The Company should closely monitor the off-take pattern of the initial production batch & lead off fully committing stock.

A. Prioritize allocation :- By deciding to commit a certain percentage - say 80% of the initial 60% produced - to selected outlet where relationships are collaborative, the sales pattern is more likely to be transferred back to the Company.

36  
Gw  
12/09/24  
pe  
12/9/22