

19/9/22

## Industrial Management (Internal)

### Topics :-

- ✓ Functions of Management ✓ Concept of EOT, LOT, Slack, Float
- ✓ Organization Structure
- ✓ Morals vs Ethics ✓ PERT, CPM concept
- ✓ Management as a system ✓ Employee Satisfaction
- ✓ Organization culture, climate ✓ Concept of crashing & updating (Important, application)
- ✓ Labour Law Concept

### # Managements :-

Management involves creating an internal environment which puts into use the various factors of production

### Need :-

- Design and manage a system • Improve productivity

### # Functions of management :-

At most fundamental level, management is a discipline that consists of a set of 5 general functions:

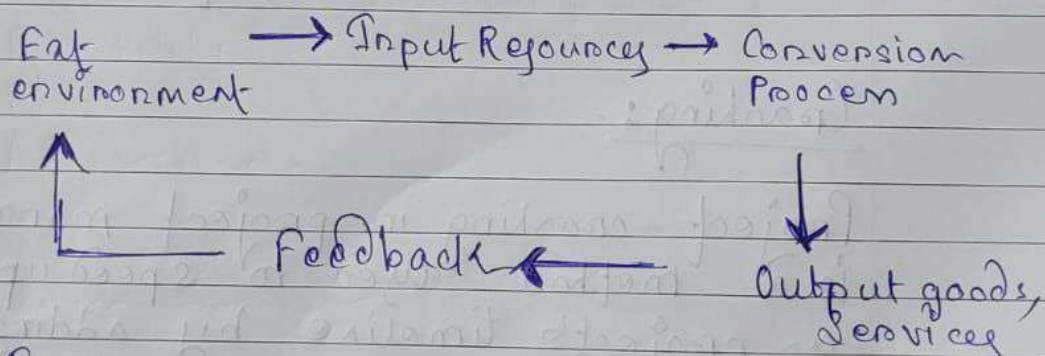
- planning • organizing • staffing • leading • controlling



## Management of a System :-

### System:-

It may be defined as a collection of interacting elements that operate to achieve a predetermined objective.



### Types:-

- 1) Mechanistic :- It is a system in which though the entire thing is mechanized yet the choice of system composition remains in hands of human.
- 2) Quasi-mechanistic :- Here human beings carry out some mechanical functions. eg fighters plane.
- 3) Non-mechanistic :- Here human elements work in non-mechanical manners and take decision to improve the system.



## Employee Satisfaction factors:

- Fair Policies & Practices
- Promotion
- Safety & Security
- Respect from co-workers
- Relationship with supervisors
- Initiation and leadership
- Flexibility
- Pay
- Appreciation

## # Organizational Culture:-

Organizational culture refers to a system of shared meaning held by its members. It is expressed in terms of norms, values, attitudes and beliefs shared by organisational members. It is a stable attribute.

→ Best Culture (Google)

→ Worst Culture (Forever 21)



### Objectives:

- It helps to establish who is in charge of what. It also highlights the chain of commands.
- It helps to define departments, jobs, roles.
- It helps in flow of information.

### Factors affecting organization structure:-

- Strategy
- Technology
- People
- Decision
- Task
- Size
- Environment

### Types of organisation Structure:-

- Functional - It groups employees into different departments by work specialization.  
Top-down decision making process.
- Divisional - It organizes employees around a common product or geographic location.  
It is independent and mainly follows a



## decentralized framework

- Matrix Structure:-

Team members report to several managers at once. Employees from different departments to come together for temporarily working on team projects.

- Team Structure :

It creates small team that focuses on delivering one product or service. Team members only have full control on their project.

- Network Structure:-

It is an act of joining the efforts of two or more organization with the goal of delivering one product or service.

- Flat-tall structure :-

In flat organizational structure, there are few middle managers b/w employees and top managers.



All structure has many hierarchical levels and involve a long chain of command.

## # Morals vs Ethics

Morals is an individual code of behaviour shaped by religious or philosophical principles.

Ethics and morals relate to "right" and "wrong" conduct. While they are sometimes used interchangeably, they are different. ethics refers to rules provided by an external source. eg. codes of conduct in workplace or principles in religion.

Morals refer to an individual's own principle regarding right and wrong.

### Factors: (of morals)

- family • School • friends • Age • Grades



Climate:-

It refers to those aspects of the environment that are consciously perceived by organizational members. It is often defined as the recurring patterns of behaviour, attitudes and feelings that characterize life in organization.

Climate

•> It refers to the current atmosphere of the organization

•> Superficial level manifestation

•> manipulated & changed

Culture

•> This has evolved over a number of years.

•> Deep-rooted, underlying values and assumption.

•> can't be changed.



# CPM - PERT Numericals and  
FOI and LOI, Slack Concept all  
from one single sum given  
in classroom

Module - 2 (Sums) [left-top  
corner]

Crashing:-

Project crashing in project management is a method used to speed up a project's timeline by adding additional resources without changing course of project.

Updating:-

It is a process which involves comparison b/w actual execution and original plan and if required take necessary actions to set things back on schedule, hence if required upward flow of

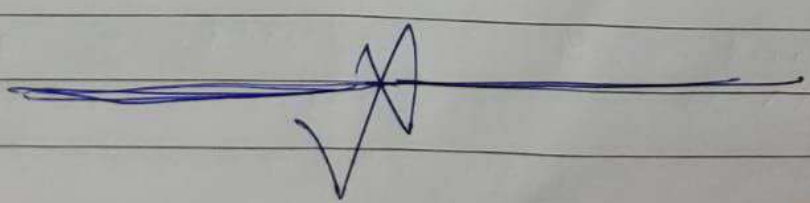


information. If all activities are progressing as per as schedule then updating is seldom required.

\* for further elaboration on this you can go through sums given in classroom but not in syllabus of internal.

### # Labour-law Concept

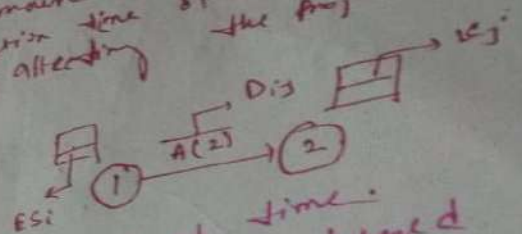
It is the varied body of law applied to such matters as employment, remuneration, conditions of work etc. Elements of labour law are less homogeneous than rules governing a particular legal relation. It deals with statutory requirements and collective relations that are increasingly important in mass production societies. It defines the rights and obligations of each worker.





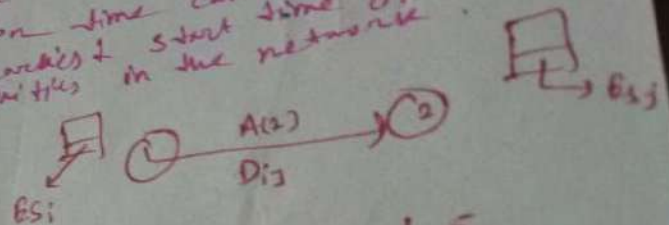
(C) Total float: It is the amount of time that the completion time of an activity can be delayed without affecting the project completion time.

$$TF_{ij} = LC_j - ES_i - D_{ij}$$



Free float: It is the amount of time that the activity completion time can be delayed without affecting the earliest start time of immediate successor activities in the network.

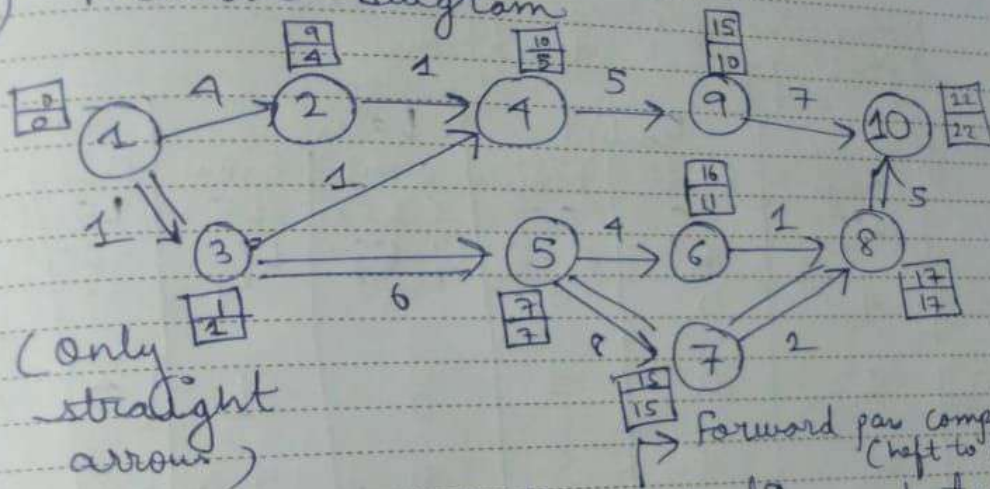
$$FF_{ij} = ES_j - ES_i - D_{ij}$$



Activity (ij)	Duration (D <sub>ij</sub> )	Total float (TF <sub>ij</sub> )	Free float (FF <sub>ij</sub> )
A 1-2	2		



Q5) Network Diagram



Q5) Compute earliest event time, latest event time. (Right to left)   
 Forward pass computation (left to right)   
 Backward pass computation

□ latest time   
 □ earliest time

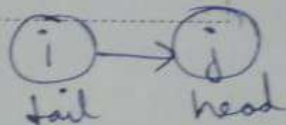
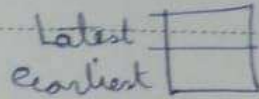
1st fill earliest time   
 earliest time of starting node is zero   
 In forward pass,

add, take max   
 In such a case  $\rightarrow 0$

In backward,   
 subtract, take min



Notes :



Determine critical path and total project duration

Activity	Time (days) ( $t_{ij}$ )	Earliest		Latest		Total Float	
		Start (ES) $E_i$	Finish (EF) $E_i + t_{ij}$	Start (LS) $L_j - t_{ij}$	Finish (LF) $L_j$	Float (LS - ES) $L_j - E_i$	Float (FF - EF) $L_j - E_i - t_{ij}$
1-2	4	0	4	5	9	5	0
1-3	1	0	1	0	1	0	0
2-4	1	4	5	9	10	5	0
3-4	1	1	2	9	10	8	3
3-5	6	1	7	1	7	0	0
4-9	5	5	10	10	15	5	0
5-6	4	7	11	12	16	5	0
5-7	8	7	15	7	15	0	5
6-8	1	11	12	16	17	5	0
7-8	2	15	17	15	17	0	0
8-10	5	17	22	17	22	0	5
9-10	7	10	17	15	22	5	5

→ Double lines in graph



Qs) 3) Determine critical path and total project length duration

An activity is said to be critical if total Float ( $TF_{ij}$ ) for any activity ( $i, j$ ) is Zero.

Critical path conditions -

$$ES_i = LF_i$$

$$ES_j = LF_j$$

$$ES_j - ES_i = LF_j - LF_i = t_{ij}$$

$$1 - 3 - 5 - 7 - 8 - 10$$

Project duration =  $1 + 6 + 8 + 2 + 5 = 22$

11  
15  
17  
17  
22  
22