- **Device Management :** keeps track of all devices. This is also called I/O controller that decides which process gets the device, when, and for how much time.
- **File Management :** allocates and de-allocates the resources and decides who gets the resources.
- **Security :** prevents unauthorized access to programs and data by means of passwords and similar other techniques.
- **Job accounting :** keeps track of time and resources used by various jobs and/or users.
- **Control over system performance :** records delays between request for a service and from the system.
- **Interaction with the operators :** The interaction may take place via the console of the computer in the form of instructions. Operating System acknowledges the same, does the corresponding action and informs the operation by a display screen.
- **Error-detecting aids :** Production of dumps, traces, error massages and other debugging and error-detecting methods.
- **Coordination between other software and users:** Coordination and assignment of compilers, interpreters, assemblers and other software to the various users of the computer systems.

☑ **Examples of Operating System (OS)**
- Windows (GUI based, PC)
- GNU/Linux (Personal, Workstations, ISP, File and print server, Three-tier client/Server)
- macOS (Macintosh), used for Apple's personal computers and work stations (MacBook, iMac).
- Android (Google's Operating System for smartphones/tablets/smartwatches)
- iOS (Apple's OS for iPhone, iPad and iPod Touch).

☑ **Disk Operating System (DOS)**
- The Disk Operating System (DOS) is the old and single user operating system in the computer.
- Though it is not used by many people at present, it is better to study DOS with a view to understand how the files are created, maintained and copied in the computer.
- As this operating system is mainly dealing with different disks like floppy, hard disk etc., it is called as Disk Operating System (DOS).
- When we open the computer, it makes the system to work in its internal parts like RAM, ROM and other peripherals.
- Then it will check whether the operating system has been loaded in it or not.

- If it is loaded, it will start work. Disk operating system is thus that part of system which will co-ordinate all the parts of the computer.

☑ **Functions of DOS**
- It takes commands from from the keyboard and interprets them.
- It shows all the files in the system.
- It creates new files and allots space for programme.
- It changes the name of a file in place of old name.
- It copies information in a floppy.
- It helps in locating a file.
- It searches where the file is located in the disk.
- If we want the information in the file to be printed, it gives printout of the information.
- It hides the files and directories so as not to be seen by others.
- It permanently removes the file.

☑ **Features of DOS**
The primitive operating system of DOS has the following features :
- It is the primary system where the user will get an environment about the input and output devices, e.g. monitor, Keyboard, Printers etc.
- It is Helpful in performing file management, e.g. creating, editing, deleting files etc.
- It is a single user operating system. One user can operate at one time in this operating system.
- It is character based interface system. We can type letters (or character in this OS).

☑ **Windows**
- Microsoft introduced an operating environment named Windows on November 20, 1985.
- Windows (created by Microsoft) is the most dominant OS on the market today.
- The two most popular versions of Windows for the desktop are XP and Vista (Vista being the latest version). There is also a mobile version of Windows as well as a server version of Windows (the latest being Windows Server 2010).
- Windows is all proprietary, closed-source which is much different than Linux licenses.
- Most of the popular manufacturers make all of their hardware compatible with Windows which makes Windows operate and almost all kinds of new hardware.
- As of October 2018, the most recent version of Windows for PCs, tablets, smartphones and embedded devices is Windows 10.
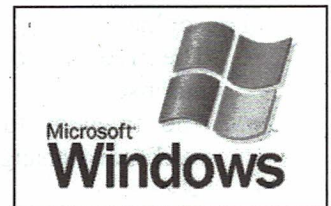
- The most recent versions for server computers is Windows Server 2019. A specialized version of Windows runs on the Xbox One video game console.
- Windows is the most vulnerable OS to attacks.
- Security software is a must when you're using Windows which is much different then Linux and OS X. It has been criticized for its susceptibility to malware, viruses, trojan horses, and worms.
- Security issues are compounded by the fact that users of the Home edition, by default, receive an administrator account that provides unrestricted access to the underpinnings of the system.
- If the administrator's account is broken into, there is no limit to the control that can be asserted over the compromised PC.
- Windows has historically been a tempting target for virus creators because of its world market dominance.
- Security holes are often invisible until they are exploited, making preemptive action difficult.
- Microsoft has stated that the release of patches to fix security holes is often what causes the spread of exploits against those very same holes, as crackers figured out what problems the patches fixed, and then launch attacks against unpatched systems. It is recommended to have automatic updates turned on to prevent a system from being attacked by an unpatched bug.

☑ **LINUX**
- Just like Windows XP, Windows 7, Windows 8, and Mac OS X, Linux is an operating system.
- Linux is distributed under an open source license.
- Open source follows the following key philosophies:
  - The freedom to run the program, for any purpose.
  - The freedom to study how the program works, and change it to make it do what you wish.
  - The freedom to redistribute copies so you can help your neighbor.
  - The freedom to distribute copies of your modified versions to others.
- Linux is the best-known and most-used open source operating system.
- As an operating system, Linux is software that sits underneath all of the other software on a computer, receiving requests
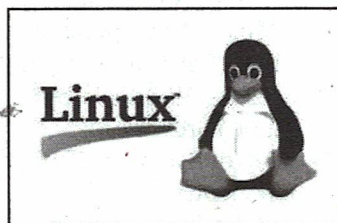
from those programs and relaying these requests to the computer's hardware.
- For the purposes of this page, we use the term "Linux" to refer to the Linux kernel, but also the set of programs, tools, and services that are typically bundled together with the Linux kernel to provide all of the necessary components of a fully functional operating system.
- Some people, particularly members of the Free Software Foundation, refer to this collection as GNU/Linux, because many of the tools included are GNU components.
- However, not all Linux installations use GNU components as a part of their operating system. Android, for example, uses a Linux kernel but relies very little on GNU tools.

How does Linux differ from other operating systems?
- In many ways, Linux is similar to other operating systems you may have used before, such as Windows, OS X, or iOS.
- Like other operating systems, Linux has a graphical interface, and types of software you are accustomed to using on other operating systems, such as word processing applications, have Linux equivalents.
- In many cases, the software's creator may have made a Linux version of the same program you use on other systems.
- If you can use a computer or other electronic device, you can use Linux.
- But Linux also is different from other operating systems in many important ways.
- First, and perhaps most importantly, Linux is open source software.
- The code used to create Linux is free and available to the public to view, edit, and—for users with the appropriate skills to contribute to.
- Linux is also different in that, although the core pieces of the Linux operating system are generally common, there are many distributions of Linux, which include different software options. This means that Linux is incredibly customizable, because not just applications, such as word processors and web browsers, can be swapped out.
- Linux users also can choose core components, such as which system displays graphics, and other user-interface components.

Who uses Linux?
- You're probably already using Linux, whether you know it or not.
- Depending on which user survey you look at, between one- and two-thirds of the webpages on

the Internet are generated by servers running Linux.

ॐ Companies and individuals choose Linux for their servers because it is secure, and you can receive excellent support from a large community of users, in addition to companies like Canonical, SUSE, and Red Hat, which offer commercial support.

ॐ Many of the devices you own probably, such as Android phones, digital storage devices, personal video recorders, cameras, wearables, and more, also run Linux. Even your car has Linux running under the hood.

☑ UNIX

ॐ Unix is a portable, multitasking, multiuser, time-sharing operating system (OS) originally developed in 1969 by a group of employees at AT&T. Unix was first programmed in assembly language but was reprogrammed in C in 1973.

ॐ Unix has been ported to more machine families than any other operating system.

ॐ As a result, it has come to be identified with the concept of open systems. Unix operating systems are widely used in PCs, servers and mobile devices.

ॐ The Unix environment was also an essential element in the development of the Internet and networking.

ॐ Unix was developed based on the philosophy that the power of the system comes from the relationships among programs, rather than on the programs themselves.

ॐ Unix programs are written to do one thing well, and programs are written so that they work together.

ॐ As such, Unix developers espouse simplicity, portability and clarity in design. In order to adhere to this philosophy, Unix systems are characterized by:

➡ The use of text files for data storage
➡ A hierarchical file system
➡ A large number of small programs, strung together through a command-line interpreter
➡ Use of shell scripts
➡ The avoidance of captive user interfaces

ॐ Unix had a significant impact on other operating systems and can be credited (in whole or in part) for the following:

➡ The use of high-level language in operating systems
➡ Hierarchical file systems

➡ Its syntax for regular expressions found widespread use
➡ Unix shell inspired many of the command line interpreters that followed
➡ C programming language became more ubiquitous
➡ Began the movement toward modularity and reusability in software engineering
➡ Helped contribute to the explosion of the Internet by making TCP/IP protocol more widely available
➡ Contributed to the launch of the free software movement

ॐ Free Unix-like operating systems such as Linux and BSD now hold a large portion of the market originally held by Unix.

What is the difference between Unix and Linux?

ॐ You may have heard of Unix, which is an operating system developed in the 1970s at Bell Labs by Ken Thompson, Dennis Ritchie, and others.

ॐ Unix and Linux are similar in many ways, and in fact, Linux was originally created to be similar to Unix.

ॐ Both have similar tools for interfacing with the systems, programming tools, filesystem layouts, and other key components.

ॐ However, Unix is not free.

ॐ Over the years, a number of different operating systems have been created that attempted to be "unix-like" or "unix-compatible," but Linux has been the most successful, far surpassing its predecessors in popularity.

४. Database Management System : Data, Information and Database, Types of Database, Data Security

☑ Concept of database management

ॐ The process of managing data within database is called database management.

ॐ To manage database, a database management software/system is required.

ॐ Database management includes the following activities:

➡ Writing schema for creating new data files, updating structure of existing data file, deleting a data file.
➡ Setting relationship among data files.
➡ Inserting, deleting and updating data values within data files.
➡ Maintaining data dictionary.
➡ Creating, updating and deleting database objects other than data files, such as views, synonyms, procedures, functions, triggers, indexes, etc.

Concept of Data

- Data, in the context of databases, refers to all the single items that are stored in a database, either individually or as a set.
- Data in a database is primarily stored in database tables, which are organized into columns that dictate the data types stored therein.
- So, if the "Customers" table has a column titled "Telephone Number," whose data type is defined as "Number," then only numerals can be stored in that column.

Database Management System

- A database management system (DBMS) is system software for creating and managing databases.
- The DBMS provides users and programmers with a systematic way to create, retrieve, update and manage data.
- A DBMS makes it possible for end users to create, read, update and delete data in a database.
- The DBMS essentially serves as an interface between the database and end users or application programs, ensuring that data is consistently organized and remains easily accessible.
- The DBMS manages three important things: the data, the database engine that allows data to be accessed, locked and modified -- and the database schema, which defines the database's logical structure.
- These three foundational elements help provide concurrency, security, data integrity and uniform administration procedures.
- Typical database administration tasks supported by the DBMS include change management, performance monitoring/tuning and backup and recovery.
- Many database management systems are also responsible for automated rollbacks, restarts and recovery as well as the logging and auditing of activity.
- Database management system is a collection of software programs through which database can be managed.
- Given Figure shows an example of real-life database of children's' schoolbag. It is a stationery database which contains entities such as notebook, textbook, compass box, geometry case, etc. Entity Notebook has distinguished notebooks of various subjects; Entity Textbook has distinguished textbooks of various subjects; Entity Compass box has pencils, erasers, sharpeners, ruler, etc., and Entity Geometry box has common mathematical tools.

Objectives of database management system

- **Data availability :** The data availability is responsible for the cost performance and the query update. Availability functions make the database available to users helps in defining and creating a database and getting the data in and out of a database.
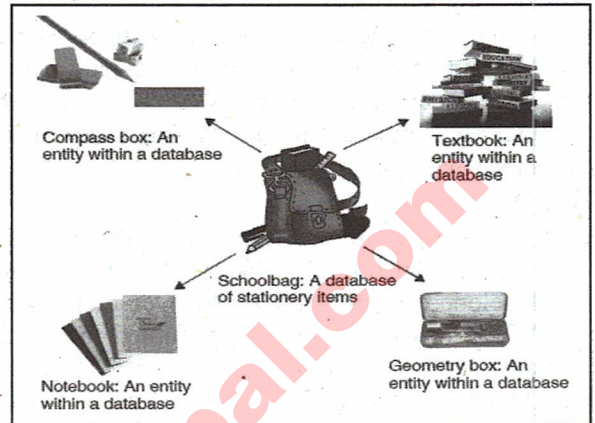
- **Data integrity :** The data integrity provides protection for the existence of the database and maintaining the quality of the database.
- **Data independence :** DBMS provides two types of data independences. First is a physical data independence program, which remains unaffected from the changes in the storage structure or access method, and the second is the logical data independence program, which remains unaffected from the changes in the schema.

Importance of database management system

- Database is required for efficient and easy storage, retrieval, updation and deletion of data records.
- Interrelated data should be grouped in one named storage area for easy access. This storage area may be physical or logical which resides in computer.
- For avoiding unnecessary repetition of data values, checking correctness of data by applying some validation rule, and searching the required information faster thus saving time and effort, etc.
- Database is required for flexibility, i.e., as and when required we can connect the database with different front-ends.
- Once a database is created, it can be shared by many users. Hence, to share data with many applications a database is required.
- Database is needed for storing high volume and complex data, such as documents files,

photographs or images, multimedia data, mobile user's data, audio and video files.

- For managing multi-dimensional data.
- Database is required for proper transaction management or transaction handling.

☑ Characteristics, or Features, or Advantages of database management system

- It provides facility to use same data file with different applications, i.e., data can be shared.
- Duplication of data can be minimized. There is no need to enter same data again and again as data can be shared between different applications.
- Proper transaction management is provided by DBMS. When data are shared between applications, there is a problem of updation when two users try to change same data at the same time. Data can be changed by only one user at a time. DBMS itself decides the priority to allow only one user to change the data at a time. The priority is decided by the DBMS software on the basis of some algorithms. In this way, DBMS handles transactions more efficiently than the file-based management system.
- There is no need to write long programs to manage data. It can be done by writing a simple single line command using structured query language, which is the generalized language provided with DBMS software.
- It is easy to maintain data file structures in DBMS using structured query language.
- Data can be integrated easily, i.e., change in one data is reflected automatically in the related data file's data.
- Data inconsistency can be avoided. As data are integrated, user is not bothered about updation of same data in different data files. It is handled by the database software. In this way, data will be consistent.
- User management becomes easier. There may be many users of the same database who may access the database from local or remote machines. By providing user rights and authorization checks, the DBMS can control and restrict users.
- Validation rules can be applied on data before data is entered in the database. It will prevent wrong data inputs.
- Change in data file structure becomes very easy.
- Security can be enforced on data by assigning privileges for different users.
- Appropriate backup procedure is available to avoid loss of data in any adverse circumstances,

such as power failure, server failure, hardware crash. In case of failure, the data can be recovered using recovery procedures.

- DBMS provides Import and Export facility using which data files can be imported from one DBMS and exported to another.

☑ Components of Database System

- **User:** User is any person who uses a database or any other object of the database. User may be of different types and at different levels in an organization.
- **Hardware:** Hardware is a permanent storage where the database is stored. It may be a hard-disc, or any other secondary memory. One single database may be stored on more than one storage devices depending on the volume of data stored within the database. For security purpose, a copy of database could be kept on some other storage device. Besides storage device, other hardware, such as computer, peripherals, etc., are also required to perform database-oriented operations.
- **Software :** Software are programs or applications which are used to access data from database. These applications reside in DBMS or there may be some applications which could be interfaced with DBMS to manage data. For example, programming languages are used to display data on monitor. There are some software programs, which are part of DBMS, that manage data dictionary or metadata, define schema for the database objects, and are used to write query on database. The common language available with all the databases is known as Structured Query Language; if which is popularly known as SQL and sometimes pronounced as 'Sequel'.
- **Data:** Data is the most important component of a database system. Data is a plural of word 'datum'. In our daily life, we use the word data to describe facts about any person, event, place or thing. Data are raw facts which may be numbers, values, names, dates, etc. When we combine related data, they describe any real-world entity. When data is stored in database, it should be stored along with its definition, data type and size, constraints, such as duplicate values are allowed or not, possible range of values, formula if it is derived from some other data, etc., display format, format in which it should be entered, validation rules, etc.

☑ Difference between file-based management system and database management system.

File-based Management System	Database Management System
Needs individual application program to perform any operation on data file.	Any operation on data file is done using single-line commands.
Programming is done using 3GL (Third Generation Languages, such as COBOL, C, PASCAL).	Programming is done using 4GL (Fourth Generation Languages such, as SQL-Structured Query Language).
Transaction management is very difficult.	Transaction management is easy.
Same data file cannot be used simultaneously.	Same data file can be used simultaneously.
Security features cannot be enforced.	Security features can be enforced.
Backup and recovery facility is not available.	Backup and recovery facility is available.
Duplication of data cannot be minimized.	Duplication of data can be minimized.
Examples: C, COBOL, PASCAL languages' file management system.	Example: dBASE, FoxPro, MS Access, Oracle.

☑ Limitations of Database

Nothing is 100% perfect. Advantages also bring along limitations with them. Database management system also has some limitations. They can be described as:

↳ Cost of database management system is very high. As the number of users increase, we need to pay more.

↳ To install database in a network, high-end hardware and skilled personnel to manage the network and database is required.

↳ As data can be shared through DBMS, it is difficult to control and keep track of data accessed by users. Proper encryption and decryption techniques are required to secure data over a network.

↳ Efficient employees are required to handle users and decide policies about data access, which requires considerable and constant training.

↳ If data volume is very high, performance will be poor. Also, when too many users are using database at the same time, it may generate traffic on network and slow down the response time.

↳ It will be more complex when DBMS contains many databases within it. It may reduce the speed of data access.

☑ State about the types of database. How the security of data can be maintained ? Clarify.
(RBB, 4th Level, 074/11/04)

There are mainly five types of databases.

↳ **Relational Database :** The relational database is the most common and widely used database out of all. A relational database stores different data in the form of a data table.

↳ **Operational Database :** Operational database, which has garnered huge popularity from different organizations, generally includes customer database, inventory database, and personal database.

↳ **Data Warehouse :** There are many organizations that need to keep all their important data for a long span of time. This is where the importance of the data warehouse comes into play.

↳ **Distributed Database :** As its name suggests, the distributed databases are meant for those organizations that have different workplace venues and need to have different databases for each location.

↳ **End-user Database :** To meet the needs of the end-users of an organization, the end-user database is used.

Data Security

Data security refers to protective digital privacy measures that are applied to prevent unauthorized access to computers, databases and websites.

↳ Data security also protects data from corruption. Data security is an essential aspect of IT for organizations of every size and type.

↳ Data security is also known as information security (IS) or computer security.

↳ Examples of data security technologies include backups, data masking and data erasure. A key data security technology measure is encryption, where digital data, software/hardware, and hard drives are encrypted and therefore rendered unreadable to unauthorized users and hackers.

↳ One of the most commonly encountered methods of practicing data security is the use of authentication. With authentication, users must provide a password, code, biometric data, or some other form of data to verify identity before access to a system or data is granted.

Data security is also very important for health care records, so health advocates and medical practitioners in the U.S. and other countries are working toward implementing electronic medical record (EMR) privacy by creating awareness about patient rights related to the release of data to laboratories, physicians, hospitals and other medical facilities.
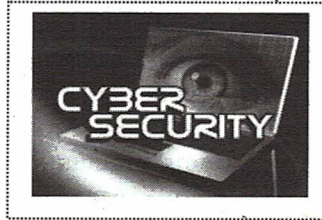
☑ **Examples of DBMS and Its Vendors**

Database Management System	Vendor (Supplier)
Oracle	Oracle
SQL Server	Microsoft
Access	Microsoft
DB2	IBM

☑ **Introduction of Cyber Security**

- Cybersecurity is the protection of internet-connected systems, including hardware, software and data, from cyberattacks.

- In a computing context, security comprises cybersecurity and physical security -- both are used by enterprises to protect against unauthorized access to data centers and other computerized systems.

- Information security, which is designed to maintain the confidentiality, integrity and availability of data, is a subset of cybersecurity.

☑ **Elements of Cyber Security**

Ensuring cybersecurity requires the coordination of efforts throughout an information system, which includes:

- **Application security :** It focuses on keeping software and devices free of threats. A compromised application could provide access to the data its designed to protect. Successful security begins in the design stage, well before a program or device is deployed.

- **Information security :** It protects the integrity and privacy of data, both in storage and in transit.

- **Network security :** It is the practice of securing a computer network from intruders, whether targeted attackers or opportunistic malware.

- **Disaster recovery/business continuity planning :** IT define how an organization responds to a cyber-security incident or any other event that causes the loss of operations or data. Disaster recovery policies dictate how the organization restores its operations and information to return to the same operating capacity as before the event. Business continuity is the plan the organization falls back on while trying to operate without certain resources.

- **Operational security :** It includes the processes and decisions for handling and protecting data assets. The permissions users have when accessing a network and the procedures that determine how and where data may be stored or shared all fall under this umbrella.

- **End-user education :** It addresses the most unpredictable cyber-security factor: people. Anyone can accidentally introduce a virus to an otherwise secure system by failing to follow good security practices. Teaching users to delete suspicious email attachments, not plug in unidentified USB drives, and various other important lessons is vital for the security of any organization.

One of the most problematic elements of cybersecurity is the constantly evolving nature of security risks. The traditional approach has been to focus resources on crucial system components and protect against the biggest known threats, which meant leaving components undefended and not protecting systems against less dangerous risks.

☑ **What Cyber Security can prevent ?**

- The use of cybersecurity can help prevent cyberattacks, data breaches and identity theft and can aid in risk management.

- When an organization has a strong sense of network security and an effective incident response plan, it is better able to prevent and mitigate these attacks.

- For example, end user protection defends information and guards against loss or theft while also scanning computers for malicious code.

☑ **Importance of Cyber Security**

- In today's connected world, everyone benefits from advanced cyberdefense programs. At an individual level, a cybersecurity attack can result in everything from identity theft, to extortion attempts, to the loss of important data like family photos.

- Everyone relies on critical infrastructure like power plants, hospitals, and financial service companies. Securing these and other organizations is essential to keeping our society functioning.

- Everyone also benefits from the work of cyberthreat researchers, like the team of 250 threat researchers at Talos, who investigate new and emerging threats and cyber attack strategies.

- They reveal new vulnerabilities, educate the public on the importance of cybersecurity, and strengthen open source tools.

- Their work makes the Internet safer for everyone.

NRB it policy, 2068

☑ **Background**

The Nepal Rastra Bank (NRB), established in 2013 BS (1956 AD) under the NRB act 2012, is the central bank of Nepal. From its inception, it has relied on manual processing for its operation till 2029 BS (1972 AD). Computer was first introduced in this organization in 2030 BS (1973 AD) for Family Budget Survey. NRB later established Computer Section under Research Department in 2042 BS (1985 AD) and upgraded to Computer Division under Personnel Administration Department (current HRMD) in 2049 BS (1992 AD) and finally formed independent Information Technology Department (ITD) in 2056 BS (1999 AD).

Over the years, IT Department has been involving in the following IT related activities:

i.   Design, develop, implement and maintain IT infrastructure of NRB.
ii. Provide information through various mechanisms including its web-site.
iii. Acquire, maintain, manage and disseminate data to/from NRB's information system.
iv. Software development and management.
v.   Hardware and Network maintenance.
vi. Development and maintenance of NRB's website, intranet, E-mail and internet services.
vii. IT knowledge transfer and capacity building.
viii. Acquire IT equipments and services.
ix. Regulate, inspect and supervise IT Infrastructure of bank and financial institutions.

A successful organization requires up to date IT policy, IT code of conduct, IT guidelines, adequate IT awareness, efficient, effective and economic use of IT systems, quality software, adequate physical infrastructure, efficient inter-office and backup connectivity, adequate power backup mechanism, disaster recovery system, business continuity plan, appropriate IT human resource plan and adequate capacity building. NRB has come a long way for the development IT infrastructure in these years. But, still lot has to be done for the implementation of modern and state of art IT infrastructure in NRB.

☑ **Vision, Mission and Goal of NRB for IT**

Vision

To create robust, resilient, secured and credible IT environment in Nepalese Banking and Financial System, particularly in Nepal Rastra Bank.

Mission

To have online, automated, real-time, secured, paperless, modern IT infrastructure to support in achieving goals and objectives of NRB.

Goal

The goals are as follows:

i.   Provide integrated, single sign-on IT system in banking and financial system.
ii. Implement efficient and secured payment system.
iii. Establish online data collection and dissemination system.
iv. Maintain information confidentiality and integrity honouring peoples' right to information.

☑ **Objectives of IT Policy**

The major objectives of IT policy are:

i.   To ensure secure, stable and standard IT infrastructure.
ii. To ensure availability, integrity and confidentiality of information.
iii. To enhance user awareness for efficient, effective and economic use of IT system.
iv. To minimize Information Technology related risks.
v.   To facilitate efficient operation of information system in financial sector.

☑ **IT Policy of NRB**

This policy is guided by national IT policy and will cover the overall management of IT related activities in NRB, including but not limited to standards of IT equipments and services, procurement of IT equipments and services, usage of IT infrastructure, code of conduct and penalizing for violation of this policy. The implementation of this policy will be guided by "NRB IT Code of Conduct" and "NRB IT Guidelines".

It will come into effect immediately after it gets approval from the Board of Directors of NRB. To achieve the objective of the organization and meet its vision, mission and goal, NRB will adopt the following policies regarding IT products and services:

i.   Ensure efficient, effective and economic IT operation by implementing appropriate IT systems, e.g., Financial Information System (FIS), Management Information System (MIS), Enterprise Resource Planning (ERP) System, Real Time Gross Settlement System (RTGS), Scripless Securities Settlement System (SSSS) etc.

ii. Maintain well structured, secured physical layout of its IT infrastructure with proper documentation.
iii. Maintain multilevel security for Information.
iv. Implement IT system audit.
v. Develop, implement and maintain data backup and recovery policy.
vi. Establish and maintain efficient, effective and economic Disaster Recovery (DR) System as an instrument to "Fail Safe System" with minimum down time. Also, develop and maintain Business Continuity Plan (BCP).
vii. Develop and implement IT Outsourcing and Third Party involvement mechanism.
viii. Maintain uniform and legitimate IT infrastructure in all its offices.
ix. Provide IT directives to licensed Banks and Financial Institutions.
x. Set a standard for IT procurement and shall be reviewed based on technological development.
xi. Promulgate "NRB IT Code of Conduct" for proper usage of NRB IT resources.
xii. Strengthen IT capacity building of employees.

☑ **Explanation of above mentioned policies are given separately hereunder.**

This policy shall be reviewed annually or as and when required. The Governor will have final authority to review, update and amend as required for effective implementation of this policy on recommendation of the "**High level IT Steering Committee**" constituted as below:

Senior Deputy Governor – **Convener**

Deputy Governor - **Member**

Executive Director, Corporate Planning Department- **Member**

Executive Director, Financial Management Department- **Member**

Executive Director, General Services Department- **Member**

Chief, IT Department, **Member Secretary**

The Committee may invite IT experts and other professionals.

☑ **Enforcement**

NRB employees, outsourced manpower, third party consultants, and all other stakeholders using NRB IT facilities should strictly adhere to this policy. The breach of this policy shall be penalized in accordance with "**NRB Employee Service By-laws, 2062**" and relevant national/international laws.

☑ **Discrepancy**

Any IT related discrepancies not addressed by this policy shall be referred to the Board of Directors under the recommendation of "**High Level IT Steering Committee**".

☑ **Clarification**

NRB IT policy is brief and it gives the outline of IT infrastructure, information management, several issues like security, procurement, system audit, and IT capacity building. The following are the clarification of the ideas incorporated in the policy document.

i. Efficient, effective and economical IT operation requires cautious planning and execution of the plan for acquiring and implementing IT related products and services. The hardware and software acquired should be compatible with each other and should give optimal performance.

ii. IT infrastructure layout includes network map, physical facility map, equipment location map and hardware and software specification and configuration. They should be in standard format and properly documented.

iii. Multilevel security for information implies role based security. IT resources will be allocated and given access to users' position and business requirement.

iv. IT system audit is an examination of the controls within an information technology infrastructure. The evaluation of obtained evidence determines if the information systems are safeguarding information assets, maintaining data integrity, operating effectively and dispensing information to authorized parties.

v. Data is the heart of any organization. To protect the data, NRB needs to implement a data backup and recovery plan. Backing up files can protect against accidental loss of user data, database corruption, hardware failures and even natural disasters. IT administrator makes sure those backups are performed and that backup tapes are stored in a secure location. The plan considers importance of data, its frequency of change, equipments to perform backup, job assignment for backup and recovery, backup storage site etc.

vi. Disaster recovery is the process, policies and procedures related to preparing for recovery or continuation of technology infrastructure critical to an organization after a natural or

human-induced disaster (i.e. Earthquake, Storm, Flood, Fire, Terrorist acts, rites etc.). It focuses on the IT or technology systems that support business functions. Disaster recovery is a subset of business continuity. Business continuity involves planning for keeping all aspects of a business functioning in the midst of disruptive events.

vii. IT outsourcing is the contracting out of IT related business function, commonly those previously performed in-house, to an external provider (third party). It requires contractual agreement involving an exchange of services and payments. The motive behind outsourcing is cost and time saving, quality assurance, focus on core business etc.

viii. Legitimate IT infrastructure refers to IT products and services legally acquired, implemented and operated. The source providing such products and services should be legal business houses.

ix. NRB provides guidelines for opening and operation to licensed Nepalese financial institutions. As these organizations heavily rely on IT, it becomes necessary on the part of NRB to provide IT directives to safeguard electronic data and transactions, to encourage use of state of the art IT infrastructure so as to enhance peoples' trust in banking.

x. Information technology is highly dynamic in the sense it comes with new ideas and products in short intervals. In this context, NRB should set standard for IT procurement based on business need and technological trend.

xi. To get high productivity, NRB needs to have state-of-the-art IT infrastructure. The other equally important factor is to have skilled employee to operate IT system. Users should be familiar with the capability, limitation of the system and behave accordingly to achieve high performance and should knowingly/unknowingly refrain from its unacceptable usage. The "NRB IT Code of Conduct" document helps users in this regard.

xii. IT capacity building is a regular and never ending process. Operational training, system installation, management and maintenance training, IT Workshops and seminars can be instrumental in this context.

NRB IT Guidelines

1. **Executive summary**

The use of information technology by financial sector has changed the way they do their business. It has become a part of business rather than supporting factor of business and has created challenges of managing and governing it. Issues of tackling with changes in technology, migrating system from one to another, maintain adequate internal control system, limiting access to system and data from unauthorized access, securing electronic transactions , meeting legal requirements, managing outsourcing services, and managing other IT related risks have been emerged in banking sector. New delivery channels such as ATM, internet banking, mobile banking have increased the risk of financial loss and electronic frauds along with other banking risks. Technology risk is not only concerned with operation risk of the bank, other banking risks like credit risk, reputation risk, compliance risk, market risk, strategic risk are also increased due to it. Moreover; emerging concept such as virtualization, data centre and disaster recovery site hosting, security outsourcing etc. have also increased the challenges of dealing with these issues. Technology has also given new avenue for cyber fraud and the modus operandi of fraud from both internal staffs and external parties have been changing. Frauds related to debit and credit card, ATM, internet banking and mobile banking are emerging in present financial organization in the world. In this scenario, NRB has felt necessary to regulate and guide IT related activities in commercial banks with the objectives of strengthening banks for tackling with emerging cyber frauds, managing information technology prudently and mitigating risk aroused from implementation of information technology.

2. **Applicability of the guidelines**

The objectives of this guideline are to promote sound and robust technology risk management and to strengthen system security, reliability, availability and business continuity in commercial banks of Nepal. Banks should compulsorily comply with this guidelines within two years from the date of issuance. The Action Plan (along with time frame for each action) for the implementation of the guidelines should be developed and provided to Bank Supervision Department, Nepal Ratra Bank within six month from the issuance. The extent of compliance of

this guideline will be examined during the periodic onsite/offsite supervision from NRB.

☑ **GUIDELINES**

1. **IT governance**

IT has been adopted by most of the commercial banks to some degree from branch automation to providing alternate delivery channelsi. This pervasive nature of IT has increased the challenge on governing it. Since IT is very critical in supporting and enabling business goals and is strategic for business growth, due diligence on its governance is essential. IT governance is a continuous process where IT strategy drives the process using necessary resources. In this context; NRB expects commercial banks to follow following guidelines

1. Bank1 should have a board approved IT related strategy and policy and IT policy should be reviewed at least annually. IT strategy can be long term and short term and long term strategy should be mapped to short term strategy periodically. There should be detail operational procedures and guidelines to manage all IT operations.

2. Organizational structure for IT should be commensurate with the size, scale and nature of business activities carried out by the bank and may differ from bank to bank. Broadly the organization structure consists of Development, Technology, IT Operation and Information Assurance.

3. Bank should assess the requirement of expertise to successfully complete required IT functions. A periodic IT training requirement for IT personnel according to the IT functions of the bank should be assessed.

4. Bank should have performance monitoring and measuring system of IT functions and it should be reported to appropriate level of management.

5. IT related risk should also be considered in the risk management policy or operational risk policy of the bank and it should cover all e-banking activities and supplier activities as well. Periodic update of risk management is essential.

6. Banks are encouraged to implement international IT control framework such as COBITii as applicable to their IT environment.

7. The board should be adequately aware of the IT resources of the bank and ensure that it is sufficient to meet the business requirement.

8. Bank should designate a senior official of the bank as Information Security Officer (ISO) who will be responsible for enforcing information security policy of the bank. ISO will also be responsible for coordinating and communicating security related issues within the organization or with relevant external organization.

9. Bank needs to carryout detail risk analysis before adopting new technology/system since it can potentially introduce new risk exposure. The new technology/system should be assessed as a part of product approval process which incorporates security related issues and regulatory requirements. The new technology/system should have fulfilled among other things, security related aspect, regulatory and legal aspects, employed industry standard controls or compensating controls and should be tested to ensure security issues of the technology.

10. Bank should have process in place to identify and adequately address the legal risk arising from cyber law and electronic transaction related laws and acts of Nepal.

2. **Information security**

Robust information is crucial to achieve business goals and for managing risk prudently in banks. Accuracy, integrity, consistency, completeness, validity, timeliness, accessibility, usability and auditability are requirement of information processed and stored electronically. To achieve these qualities of data, banks should develop and maintain comprehensive information security program.

1. There should be a board approved Information Security Policy addressing all electronic delivery channels and payment system and it should be well communicated to employees, contractors/suppliers, consultant and officials.

2. Bank should conduct Risk Assessment periodically (at least annually) for each asset that has possibility of impacting the CIAiii of the information of the bank.

3. Bank should take necessary measures to ensure that all of its employees, consultants and contractors are aware of information security policy of the bank and comply with it and can be done by clear job description, employee agreements, policy awareness and its acknowledgements.

4. Access authorization for information of the bank should be in "need to know" basis and with least privilege and it should be for required time only. Bank should closely supervise individuals with privilege access to the system. With their system activities logged, access to system by privilege users should be done by more strong controls and security practices.

5. Banks should implement appropriate physical and environment controls taking into consideration of threats, and based on the entity"s unique geographical location, building configuration, neighboring entities etc to secure critical hardware, system and information.

6. Since information security is not one time activity and cannot be gained by just purchasing and installing suitable hardware or software, bank should institutionalize processes to regularly assess the security health of the organization and detect and fix the vulnerabilities. It is recommended to conduct penetration testing of the system periodically.

7. Bank should harden their system i.e. should be configured with highest level of security setting in operating system, firewall and system software. The default password should be changed immediately after installation. The updates, patches and enhancements for security should be installed as recommended by the vendors.

8. Bank should develop and implement comprehensive computer virus protection mechanism.

9. Bank should deploy strong cryptography and end-to-end encryption to protect customer PINs, user passwords and other sensitive data in networks and in storage.

10. Bank should install firewalls between internal and external networks as well as between geographically separate sites. And firewall should be configured according to network security policy of the bank.

11. It is the responsibility of the bank to operate and maintain adequate and effective authentication and related security measures and verify the customer with proper authorization and validation procedure before access to customer account is granted and before transaction is executed.

12. Bank should make sure the detail audit trail with transaction id, date, time, originator id,

authorizer id, action taken etc. is available for each application handling sensitive information of the bank. Audit trail should be detail enough to complywith regulatory, legal and bank's requirement and should be secured to ensure integrity of information. Audit trail should be available even after migration of the system, if applicable.

13. Bank should ensure that all the applications used by the bank maintains integrity of data and free of malware and any hidden channels of data processing. This will be applicable even in purchased system.

14. Bank should adopt procedures to ensure the integrity and consistency of all critical data stored in electronic form, such as databases, data warehouses and data archives.

15. Bank should never practice updating database by accessing back-end directly. But if it has to be done due to genuine business need, it should be done under close supervision and after due authorization.

16. In the event of data pertaining to Nepalese operations being stored and/or processed abroad, there needs to be suitable controls like segregation of data and strict access controls based on principle of "need to know" and 'least privilege' and robust change controls process. The bank should be in a position to adequately prove the same to the regulator/ supervisor. Regulator/ supervisor's access to such data/records and other relevant information should not be impeded in any manner and NRB would have the right to cause an inspection to be made on the data centre and the system.

17. Bank should have a migration policy with details of migration process to ensure principle of information securityiv. After each stage of migration and after completion of migration, explicit sign offs from application owner should be taken to ensure data integrity, completeness and consistency of data.

18. Information and inventory assets in bank should be recorded and classified according to criticality of informationv. Security requirement and corresponding access control mechanism should be developed for each class and it should commensurate with level of criticality of information.

19. Employee with privilege access such as system administrator, security officer or officer of other critical system should be

scrutinized additional screening process such as background check, credit check etc before assigning in their respective job.

20. Bank should have data security policy and procedure in place to ensure security of data stored or transmitted electronically. This should cover, among other things appropriate data disposal procedure, storage of data in portable devices, security of media while in transit or in storage, physical and environmental control of storage media, encryption of customer's critical information being transmitted, transported or delivered to other locations.

21. Bank should evaluate security risk and apply appropriate additional controls if using wireless network.

22. The information security policy, guidelines and education program should be updated according to latest threats and changes in modus operandi of electronic attacks.

23. CCTV at each ATM location should be installed with adequate lighting inside ATM centre so as to capture clear picture of person doing ATM operation. However; CCTV should not capture the PIN entered by customer. Secure Transmission of message using appropriate encryption from ATM, controls relating to ATM key generation, loading, destruction, firewall, antivirus, secure PIN generation, adequate segregation of duty while creating PIN and card should be employed.

24. Bank should ensure that electronic card and its PIN is not under control of single person from the point of production till it is delivered to customer. PIN and card should not be together at any point of time before it reaches to customer hand.

25. For debit / credit card transactions at the POS terminals, it is recommended to replace existing signature based system with PIN based authorization system and the non-PIN based POS terminals be withdrawn within certain period.

26. Banks are recommended to replace current magnetic stripe card with chip based card.

27. Online payment by using card should be authenticated using second factor and instant alert should be provided to customers using email/SMS/automated voice call.

28. Bank, inter-alia, should consider security of information that can be stored in mobile devices and encryption of transaction information and PIN/Password from mobile devices to bank's system while providing banking services using mobile devices (. Additional controls like daily transaction limit, per transaction limit etc. should also be defined if bank is providing fund transfer facility. Mobile banking should be allowed for accounts in Nepalese currency only.

29. As the risk of cyber attack and its trend is increasing, banks should, inter-alia, implement more than one factor for authenticating critical activities like fund transfers through internet banking facility. The authentication methodology should commensurate with the risk of internet banking.

30. Bank should implement adequate security measure to secure their web applications from traditional and emerging cyber threats and attacks and critical application should employ latest SSL encryption.

3. **Information security education**

With the introduction of electronic delivery channels, customers don"t require to visit the bank branches physically to conduct banking. This has intensified the challenges of authenticating customers. Moreover; fraudsters are designing and using more advanced techniques to impersonate users and make illegal access to customers account. To defend illegal users from accessing banking system, it has become essential to well educate customers to conduct banking operation securely. To create effective information security practice, it is also important to educate other stakeholders including its employees.

1. Bank should develop information security awareness program and periodically conduct to its employees, vendors, customers and other related stakeholders. The awareness program should be customized according to the target group. It is recommended to develop mechanisms to track the effectiveness of training program.

2. Bank should ensure that customers are adequately educated so that they take appropriate security measures to protect their devices and computer systems and ensure that their hardware or system integrity is not compromised when engaging in electronic banking. Bank should have appropriate procedures in place to promptly response the customers query regarding securely accessing electronic banking.

3. Banks are responsible for safety and soundness of their system. They should use appropriate customer authentication system to authenticate customers before access to system is allowed and customers should also be adequately educated and aware of securing their credentials.

4. **Information disclosure and grievance handling**

Bank should clearly provide information about the services, cost, security features, risk and benefits of electronic banking environment. Precise information about responsibilities, obligations and rights of customers and bank regarding electronic transaction should be delivered to customers.

1. Bank should publish clear information about the dispute or problem resolution process in case of any security breaches and fraudulent access to customer's account. The condition on which loss will be attributable to the bank or their customers should be clearly explained.

2. Bank should publish customer privacy and security policy; cost of transaction etc. in their website or at the time of subscription of the corresponding electronic delivery channels and it should be relevant and helpful to make informed decision for subscribing electronic delivery channel.

3. Bank should clearly inform user on the amount transaction cost at each of their ATM location or electronically before committing the transactions from ATM. and other electronic delivery channels

4. Bank should develop dispute handling mechanism with expected timing of bank response, to handle disputed payments, transaction and other issues in electronic banking delivery channels.

5. Bank shall be responsible for grievance handling in case of customer files complaints on disputed transaction and procedure for handling grievance should be formulated by the bank.

6. Banks should provide clear information to their customers about the risks and benefits of using e-banking delivery services to enable customers to decide on choosing such services. Bank should educate customers on which protections are provided and not provided in each of their delivery channels.

5. **Outsourcing management**

It has become quite common for Nepalese banks to outsource some or all of IT functions. Interbranch communication, software, hardware and other technical and administrative functions are commonly outsourced by Nepalese banks. Emerging technologies such as virtualization, Data Centre and Disaster Recovery Site Outsourcing are also becoming popular. Whatever the reasons of outsourcing, bank has responsibility to ensure that their service providers are capable of delivering the level of performance, service reliability, capability and security needs that are at least as stringent as it would expect for its own operations.

1. Board and senior management are responsible for due diligence, oversight and management of risks associated with outsourcing and accountability of outsourcing decision rests with board and bank management.

2. Bank should evaluate the risk before entering into outsourcing agreement of technical operations that can significantly impact the business operation and reputation of the bank and it should be evaluated periodically

3. All outsourced operations should be subject to bank's information security and privacy policy and bank should ensure that outsource service provider implement adequate internal controls, logical access control and physical security controls to ensure the same.

4. Bank should ensure that outsourcing of IT operation do not interfere or obstruct regulatory activities. Moreover; the authority of regulatory bodies under the BAFIA and NRB Act to carry out any inspection, supervision or examination of the service provider's role, responsibilities, obligations, functions, systems and facilities must be recognized in the agreements.

5. Banks should establish a process for monitoring and control of outsourcing activities and it should commensurate with the nature, scope, complexity and inherent risk of the outsourced activity. The accountability of performance of outsourced activities should be specified in the agreed service level and it should be evaluated periodically. A periodic review of operational and financial condition of the

outsource service provider should be carried out.

6. It is the responsibility of the bank to ensure availability, integrity and confidentiality requirements even if outsourced service provider is outsourcing some or all of its functions.

7. Bank should ensure that availability and quality of the banking services are not be adversely affected by outsourcing arrangements of the bank. The contingency planning of the bank should address the availability of alternate services providers or possibility of canceling outsourcing activities and bringing the outsourced activities back in house in urgent situation.

8. While outsourcing IT operations outside the country, country risk factors such as economic, social and political reasons should also be considered while accessing the risk of outsourcing activities. Bank should proactively evaluate such risks and develop effective and appropriate mitigating controls and if required exit strategy. The same should also be considered if the outsource service providers are operating across multiple countries or outsourced some or all of its functions abroad.

9. To ensure continuity of critical applications, bank should have suitable strategy in place. Bank can either receive source code and its updates from the vendor or can arrange a software escrow agreement to ensure source code and its updates availability in case the vendor goes out of business.

10. Emerging technologies such as virtualization, data center hosting, and disaster recovery site hosting, applications as a service and cloud computing have no clear legal jurisdiction for data and cross border regulations. Banks should clarify the jurisdiction for their data and applicable regulations at the beginning of an outsourcing or offshoring arrangement. This information should be reviewed periodically and in case of significant changes performed by the service provider.

6. **IT operations**

IT infrastructure have been developed and grown in banks over few years and has been used to support processing and storage of information in banks. IT should be operated to ensure timely, reliable, secure information. To ensure effective and efficient delivery of information, following guidelines should be followed.

1. Board and higher management should oversee functioning of IT operation and should ensure safe IT operation environment.

2. Adequate segregation of duty should be enforced in all IT operations. There should be documented standards/procedures for administering an application system, which are approved by the application owner and kept up-to-date. Access to the application should be based on the principle of least privilege and "need to know" commensurate with the job responsibilities.

3. Critical system functions and procedure such as systems initialization, network security configuration, access control system installation, changing operating system parameters, implementing firewalls and intrusion prevention systems, modifying contingency plans, invoking emergency procedures, obtaining access to backup recovery resources, administering critical application, creating master password and cryptographic keys should be carried out in joint custody.

4. Banks need to implement a „change management" process for handling changes in technology and processes to ensure that the changes are recorded, assessed, authorized, prioritized, planned, tested, implemented, documented and reviewed in a controlled manner and environment.

5. Bank should have a documented migration policy with migration methodology to ensure completeness, integrity, confidentiality and consistency of data. Bank should ensure that audit trail of the older system is available even after migration to new system. Audit trail of pre migration, migration and post migration should be available for review.

6. Vendors, suppliers or consultant who are authorized to access critical system of the bank should be subject to close supervision, monitoring and access control similar to those applying to internal staffs.

7. High degree of availability of the service is critical for online environment. Bank should be able to ensure that they have adequate resources in terms of hardware, software and other operating capability to deliver

consistently reliable service. Bank should identify and maintain standby software, hardware and network components critical for availability.

8. Bank should conduct periodic risk assessment of their IT environment including human resource, technology and processes. The probable events or activities that can adversely affect the bank's operation or reputation should be identified during risk assessment and suitable mitigating strategy should be in place.

7. Information systems acquisition, development and implementation

Many software fails due to inadequate system testing and bad system design. Application that handles financial information of customers' data should, inter-alia, satisfy security requirements. Deficiencies in system design should be recognized at early stage of software development and

during software testing. Among other things, following points should be taken into account while developing software.

1. User functional requirements, security requirements, performance requirements and technical specification should be documented and approved by appropriate level of management before software is developed.

2. Information security requirement should be incorporated at each stage of software development lifecyclevi. Security requirements relating to access control, authentication, transaction authorization, system activity logging, audit trail, data integrity, security event tracking etc. should be incorporated along with business requirement.

3. All system should have audit trail detailed enough to use it as forensic evidence and audit trail should meet, inter-alia, regulatory and legal requirements.

4. Banks are encouraged to conduct source code review of the application with the objective of finding loopholes and defects residing in the software due to poor programming practice, coding errors, malicious attempts etc. All the vulnerabilities, loopholes and defects found should be fixed before system is implemented.

8. Business continuity and disaster recovery planning

The role of banking sector in economic growth and stability is vital and requires continuous service and reliable service. The introduction of electronic delivery channels and 24/7 services availability has increased the demand of Business Continuity Planning (BCP) framework comprising of all critical aspects of people, process and technology. Business Continuity should be formed to minimize financial, operational, legal, reputational and other risks and it includes policies, standards and procedures to ensure continuity, resumption and recovery of business processes and minimizes the impact of disaster. A business continuity plan generally incorporates business Impact analysis, recovery strategies, business continuity plan as well as testing, training, awareness, communication and crisis management program. Disaster Recovery Planning (DRP) deals with technical aspects of BCP and is a part of it. Most of the applications in banking are mission critical in nature and requires high availability. While designing the banks IT system and Datacenter (DC), fault tolerance of such mission critical system should be taken into account.

1. Bank should have board approved BCP Policy. There should be detail procedures and guidelines for prioritizing critical business functions, incident handling and how the institutions will manage and control identified risk. The BCP should also include allocation of sufficient resources, allocating knowledgeable person etc and should be reviewed periodically.

2. A senior officer of the bank should be appointed as Head of Business Continuity Planning function and he/she will be responsible for developing BCP, it regular updates, prioritization of critical business activities, recovery, testing, training and other aspects of BCP.

3. A BCP should consider all probable natural and man-made disasters, security threats, regulatory requirements, dependencies on outsourcing activities and issues of operating in multiple countries. BCP should also consider people aspect along with technical aspects.

4. A BCP team should be formed and it should comprise of senior offers from various

departments as required and it should be formed in head office as well as in branch offices.

5. BCP should be periodically, at least annually, tested to ensure its effectiveness. The testing should include all aspects and constituents of the bank i.e. people, processes and resources including technology. BCP testing should be both planned and unplanned and should be audited by internal audit of the bank. The testing and its outcome should be documented and amendments in BCP be made as suggested by the outcome of the test.

6. BCP should specify RPO and RTO vii of the business processes and suitable data recovery strategies should be chosen in DRP to meet required RPO and RTO. Bank can choose Hot Site, Warm Site or Cold Siteviii for backup site but it should meet the RPO and RTO requirement as specified in the BCP.

7. Bank can use their own standby site and system or outsource it from some disaster recovery providers. Depending on RPO and RTO requirements, bank may opt for high availability system to keep both system and data replicated on remote site or live replication of data to offsite location or back up made to offsite location or backups made to electronic media and sent offsite periodically or combination of above strategies.

8. Whatever the arrangements has done for standby site, bank should also adopt disaster mitigating strategies such as locally mirroring data and system, arranging UPS and generator for long term power failure, using surge protector to minimize the effect of power fluctuations and providing adequate physical and environmental controls in the DC.

9. The datacenter, disaster recovery solution, enterprise network and security and branch or delivery channels should be designed and configured for high availability and no single point of failure.

10. The location of building containing datacenter and critical equipment rooms must be chosen so as to minimize the risk of natural and man-made disaster, flood, fire, explosion, riots, environmental hazards etc. Physical access to datacenter and critical equipment rooms must be restricted to authorized individuals only.

11. Bank should check transaction and data integrity between DC and DR site periodically. It is recommended to make this check as a part of End of Day (EOD) or Beginning of Day (BOD) process.

12. Bank should develop appropriate incidence response plans, including communication strategies and outsourced services, to ensure business continuity, control reputational risk and limit liability of service disruption. The incidence response plan should, inter-alia, cover mechanism to identify incidence as soon as it occurs, recovery of e-banking system and services, communication strategy to address external party and media, procedure to alert related regulatory body etc
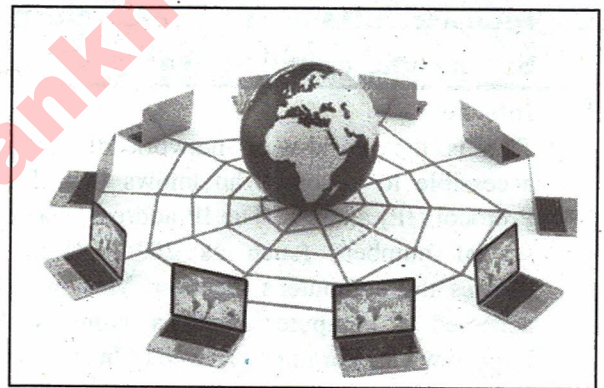
9. **Is audit**

Since the increasing complexity of IT environment in banks has created significant risk, comprehensive risk management comprising of various standard internal control framework, bank's own requirement and NRB requirement. To ensure the effectiveness of implemented controls framework and adequacy of the adopted security plan and procedures, banks should conduct IS audit annually.

1. Board or the audit committee should provide sufficient resources to conduct audit to ensure the audit team is capable of evaluating IT controls in sufficient IT coverage.

2. If the bank does not have enough staff to conduct IS Audit or bank lacks expertise and experience in its staffs, IS audit can be outsourced to external professional provider. However; the responsibility of audit

planning, risk assessment and follow up rests on the bank. The audit committee should ensure that the outsourced service provider has expertise and experience in IS Audit.

10. **Fraud management**

Nepalese banks are using electronic delivery channels to provide banking services. Increased use of Internet banking, mobile banking, payment card (debit and credit card), ATM is also creating risk of electronic fraud in banking system. In this context, bank should among other things follow following guidelines.

1. Banks should identify and document all electronic attacks and suspected electronic attacks in their system and report to Nepal Rastra Bank monthly.

2. Customers should be made aware of frauds along with fraud identification, avoidance and protection measures.

७. Internet, Intranet, Extranet, Internet Service and e-mail System

☑ **Internet**

This is the world-wide network of computers accessible to anyone who knows their Internet Protocol (IP) address. The IP address is a unique set of numbers (such as 202.70.81.23) that defines the computer's location. Most will have accessed a computer using a name such as http://www.nrb.org.np or web.epfnepal.com.np. Before this named computer can be accessed, the name needs to be resolved (translated) into an IP address. To do this your browser (for example Internet Explorer) will access a Domain Name Server (DNS) computer to lookup the name and return an IP address or issue an error message to indicate that the name was not found. Once your browser has the IP address it can access the remote computer. The actual server (the computer that serves up the web pages) does not reside behind a firewall - if it did, it would be an Extranet. It may implement security at a directory level so that access is via a username and password, but otherwise all the information is accessible.

↬ The Internet is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link devices worldwide.

↬ It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

↬ The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and peer - to - peer networks for file sharing.

Characteristics of Internet

↬ Internet is a worldwide network of Computers which is open for all.

↬ Internet itself contains a large number of intranets.

↬ Unlimited number of users.

↬ Visitors traffic is unlimited.

↬ Contains unlimited source of information.

↬ Collection of various LANs, WANs and MANs.

↬ Internet uses the standard Internet Protocol (TCP/IP)

↬ Every computer in internet is identified by a unique IP address, which identifies a computer's location.

↬ A special computer DNS (Domain Name Server) is used to give name to the IP Address so that user can locate a computer by a name.

☑ **Intranet**

Intranet is network of Computers designed for a specific group of users. An intranet is a private network, accessible only to an organization's staff. Generally a wide range of information and services from the organization's internal IT systems are available that would not be available to the public from the Internet.

This is a network that is not available to the world outside of the Intranet. Intranet can be accessed from Internet but with restrictions. If the Intranet network is connected to the Internet, the Intranet will reside behind a firewall and, if it allows access from the Internet, will be an Extranet. The firewall helps to control access between the Intranet and Internet to permit access to the Intranet only to people who are members of the same company or organization.

↬ An intranet is a private network accessible only to an organization's staff.

↬ Generally a wide range of information and services from the organization's internal IT

systems are available that would not be available to the public from the Internet.

- A company-wide intranet can constitute an important focal point of internal communication and collaboration, and provide a single starting point to access internal and external resources.
- In its simplest form an intranet is established with the technologies for local area networks (LANs) and wide area networks (WANs).
- Intranet is system in which multiple PCs are connected to each other.
- PCs in intranet are not available to the world outside the intranet.
- Usually each company or organization has their own Intranet network and members/employees of that company can access the computers in their intranet.
- Each computer in Intranet is also identified by an IP Address which is unique among the computers in that Intranet.

Characteristics of Intranet

- Limited number of Users.
- Limited visitors traffic.
- Contains only specific group purpose information.
- Mostly any of LAN or MAN or WAN.
- PCs in intranet are not available to the world outside the intranet.
- Each computer in Intranet is also identified by an IP Address which is unique among the computers in that Intranet.

Similarities in Internet and Intranet

- Intranet uses the internet protocols such as TCP/IP and FTP.
- Intranet sites are accessible via web browser in similar way as websites in internet. But only members of Intranet network can access intranet hosted sites.
- In Intranet, own instant messengers can be used as similar to yahoo messenger/ gtalk over the internet.

Differences in Internet and Intranet

- Internet is general to PCs all over the world whereas Intranet is specific to few PCs.
- Internet has wider access and provides a better access to websites to large population whereas Intranet is restricted.
- Internet is not as safe as Intranet as Intranet can be safely privatized as per the need.

☑ **Extranet**

An extranet is a private network that uses Internet technology and the public telecommunication system to securely share part of a business's information or operations with suppliers, vendors, partners, customers, or other businesses. An extranet can be viewed as part of a company's intranet that is extended to users outside the company. It has also been described as a "state of mind" in which the Internet is perceived as a way to do business with other companies as well as to sell products to customers.

An extranet requires security and privacy. These can include firewall server management, the issuance and use of digital certificates or similar means of user authentication, encryption of messages, and the use of virtual private networks (VPNs) that tunnel through the public network.

Companies can use an extranet to:

- Exchange large volumes of data using Electronic Data Interchange (EDI)
- Share product catalogs exclusively with wholesalers or those "in the trade"
- Collaborate with other companies on joint development efforts
- Jointly develop and use training programs with other companies
- Provide or access services provided by one company to a group of other companies, such as an online banking application managed by one company on behalf of affiliated banks.
- Share news of common interest exclusively with partner companies

☑ **Electronic mail (email or e-mail)**

- Email, short for "electronic mail," is one of the most widely used features of the Internet, along with the web.
- It allows you to send and receive messages to and from anyone with an email address, anywhere in the world.
- Email uses multiple protocols within the TCP/IP suite.
- For example, SMTP is used to send messages, while the POP or IMAPprotocols are used to retrieve messages from a mail server.
- When you configure an email account, you must define

- your email address, password, and the mail servers used to send and receive messages.
- Fortunately, most webmail services configure your account automatically, so you only need to enter your email address and password.
- However, if you use an email client like Microsoft Outlook or Apple Mail, you may need to manually configure each account. Besides the email address and password, you may also have to enter the incoming and outgoing mail servers and enter the correct port numbers for each one.
- The original email standard only supported plain text messages.
- Eventually, email evolved to support rich text with custom formatting.
- Today, email supports HTML, which allows emails to be formatted the same way as websites. HTML email messages can include images, links, and CSS layouts.
- You can also send files or "email attachments" along with messages. Most mail servers allow you to send multiple attachments with each message, but they limit the total size.
- In the early days of email, attachments were typically limited to one megabyte, but now many mail servers support email attachments that are 20 megabytes in size or more.
- Electronic mail (email or e-mail) is a method of exchanging messages between people using electronics.
- Email first entered substantial use in the 1960s and by the mid-1970s had taken the form now recognized as email.
- Email operates across computer networks, which today is primarily the Internet.
- Some early email systems required the author and the recipient to both be online at the same time, in common with instant messaging.
- Today's email systems are based on a store-and-forward model.
- Email serversaccept, forward, deliver, and store messages.
- Neither the users nor their computers are required to be online simultaneously; they need to connect only briefly, typically to a mail server or a webmail interface, for as long as it takes to send or receive messages

Email Netiquette
- When composing an email message, it is important to use good netiquette. For example, you should always include a subject that summarizes the topic of the email.
- It is also helpful to begin each message with the recipient's name and end the message with your name or "signature."
- A typical signature includes your name, email address, and/or website URL. A professional signature may include your company name and title as well.
- Most email programs allow you to save multiple signatures, which you can insert at the bottom of an email.
- If you want to send an email to multiple recipients, you can simply add each email address to the "To" field.
- However, if the email is primarily intended for one person, you should place the additional addresses in the "CC" (carbon copy) field.
- If you are sending an email to multiple people that don't know each other, it is best to use the "Bcc" (blind carbon copy) field. This hides the email addresses of each recipient, which helps prevent spam.

★ ☆ ★

द्वितीय पत्र :

# व्यवस्थापन, गणित तथा सेवा सम्बन्धी

समूह - क

अङ्क भार : २०

व्यवस्थापन

१. व्यवस्थापनका सिद्धान्त तथा कार्यहरु

☑ व्यवस्थापन भन्नाले के बुझिन्छ ? यसका प्रमुख कार्यहरु वर्णन गर्नुहोस् । ४+६=१० (RBB, तह-४, सहायक, २०७४/११/०५)

व्यवस्थापनको अवधारणा

✎ गतिशील वातावरणमा सङ्गठनका उद्देश्यहरु प्रभावकारी एवम् कुशलताका साथ हासिल गर्न अरु व्यक्तिहरुद्वारा र तिनीहरुसँग मिलेर काम गर्ने, गराउने प्रक्रिया, कला वा कार्यलाई व्यवस्थापन भनिन्छ ।

✎ व्यवस्थापनले सङ्गठनको उद्देश्य प्राप्तिका लागि साधनहरुको योजना गर्ने, सङ्गठन गर्ने, निर्देशन दिने, नियन्त्रण गर्ने लगायतको समग्र र समन्वय गर्ने लगायतका कार्य गर्दछ ।

✎ व्यवस्थापन भनेको सङ्गठनको उद्देश्यहरु हासिल गर्न मानवीय एवम् गैरमानवीय साधनहरुलाई परिवर्तित वातावरण अन्तर्गत कुशल एवम् प्रभावकारी रुपमा योजना, सङ्गठन, निर्देशन, समन्वय गर्ने प्रक्रिया हो ।

✎ सङ्गठनका उद्देश्यहरु पूरा गर्नका लागि चाहिने मानवीय तथा भौतिक साधन र स्रोतको पहिचान, संकलन, परिचालन, समन्वय एवम् नियन्त्रण गर्दै सम्पूर्ण सदस्यहरुको प्रयासलाई एउटै दिशातिर डोर्‍याउन सकेको खण्डमा मात्र सङ्गठनको पूर्वनिर्धारित उदेश्य प्राप्त गर्न सम्भव हुन्छ । जुन कुरा व्यवस्थापनको माध्यमबाट मात्र संभव छ ।

परिभाषा

✎ **Koontz & Weihrich** का अनुसार "Management is the process of designing and maintaining of an environment in which individuals working together in groups efficiently accomplish selected aims".

✎ हेनरी फोयलका अनुसार "व्यवस्थापनको अर्थ पूर्वानुमान गर्नु तथा योजना बनाउनु, सङ्गठित गर्नु आदेश दिनु, समन्वय गर्नु र नियन्त्रण गर्नु हो ।"

✎ मेरी पार्कर फोलेटका अनुसार : "मानिसहरुबाट काम पूरा गराउने कला नै व्यवस्थापन हो ।"

✎ व्यवस्थापनका गुरु पिटर ड्युकरका अनुसार : "व्यवस्थापन बहुउद्देश्यीय अङ्ग हो जसले व्यवसाय, व्यवस्थापक र कामदार एवम् कामलाई व्यवस्थित गर्दछ ।"

ॐ "Management is the art of getting things through and with people in formally organized groups". **Ex:** Human Resource Management, Financial Management.

विभिन्न विद्वान्हरुले व्यवस्थापनको बारेमा दिएका परिभाषाहरु एवम् दृष्टिकोणहरुलाई आधार मानी व्याख्या गर्दा व्यवस्थापन एउटा कला (Art), प्रक्रिया (Process), विषय (Discipline) एवम् संज्ञा (Noun) हो भन्न सकिन्छ । त्यसैले हामी यहाँ व्यवस्थापनका विभिन्न परिभाषाहरु एवम् दृष्टिकोणहरुलाई आधार मान्दै यसको अर्थलाई निम्नानुसार विश्लेषण गर्दछौं ।
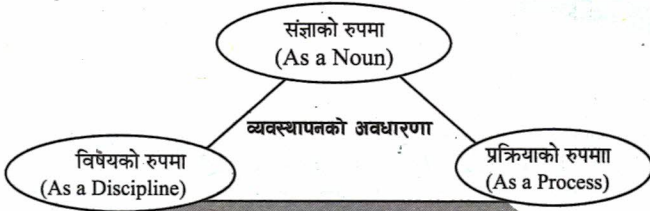
संज्ञाको रुपमा (As a Noun)

ॐ संज्ञाको रुपमा व्यवस्थापनलाई व्याख्या गर्दा सङ्गठनको व्यवस्थापकीय कार्यमा संलग्न सम्पूर्ण मानवीय स्रोतलाई जनाउँछ । संगठनको उद्देश्य पूरा गर्न, नीतिनिर्माण गर्ने, सुपरिवेक्षण गर्ने तथा नियन्त्रण गर्ने कार्यमा संलग्न भएका सम्पूर्ण व्यक्तिहरुको समूहलाई व्यवस्थापन भनिन्छ ।

ॐ अरु कर्मचारीहरुको कार्यलाई निर्देशन दिने, नियन्त्रण गर्ने एवम् योजना बनाउने कार्यमा संलग्न सङ्गठनका विभिन्न तहका व्यक्तिहरुको समूह नै वास्तवमा व्यवस्थापन हो ।

ॐ पिटर ड्रकरको भनाइ अनुसार "व्यवस्थापन बहुउद्देश्यीय अङ्ग हो भने जसले व्यवसाय, व्यवस्थापक र कामदार एवम् कामलाई व्यवस्थित गर्दछ ।"

ॐ जेम्स एल.लुन्दिको भनाइ अनुसार "व्यवस्थापन प्रमुख रुपले विशिष्ट उद्देश्य प्राप्तिका लागि अरु व्यक्तिहरुको प्रयासलाई योजना, समन्वय, उत्प्रेरित तथा नियन्त्रण गर्ने कार्य हो ।" यो परिभाषालाई व्यवस्थापनको कार्यगत धारणा पनि भनिन्छ ।

ॐ यी माथिका परिभाषाहरुलाई विश्लेषण गर्दा व्यवस्थापन भनेको एउटा त्यस्तो समूहको नाम हो जसले अरुबाट केही काम लिनका लागि सङ्गठनमा संलग्न सम्पूर्ण व्यक्तिहरुको सामूहिक नामलाई जनाउँछ ।

विषयको रुपमा (As a Discipline)

ॐ विषयको रुपमा व्यवस्थापन एउटा सामाजिक विज्ञान हो र अन्तरविषय पनि हो, किनकि यो अर्थशास्त्र, गणित, मनोविज्ञान, समाजशास्त्र जस्ता विषयका सिद्धान्त र दर्शनहरुको सामूहिक रुपबाट विकसित विषय बनेको छ ।

ॐ व्यवस्थापन एउटा प्रयोगात्मक विषय हो, किनकि यसका सिद्धान्तहरु प्रविधिहरु समाज एवम् मानिसका विभिन्न मानवीय साधन र स्रोतलाई प्रभावकारी र कुशलतापूर्वक व्यवस्थापन गर्दै, उद्देश्य प्राप्ति गराउनतर्फ परिलक्षित भएको पाइन्छ ।

ॐ व्यवस्थापन विषयका रुपमा विकसित भएका कारणले गर्दा धेरै विद्वान्हरु यसका सिद्धान्त र प्रयोगहरु प्रति खोजी गर्न एवम् किताब र लेखहरु प्रकाशित गर्न प्रयासरत छन् । विषयकै

रुपमा हेर्दा व्यवस्थापन विषयको अध्ययन आजकल विश्वव्यापी रुप लिएको छ ।

ॐ व्यवस्थापकहरुलाई व्यवस्थापन सम्बन्धी सही शिक्षा र ज्ञान दिई सङ्गठनका विभिन्न साधन र स्रोतलाई कसरी सदुपयोग गरेको खण्डमा सङ्गठनको उद्देश्य प्रभावकारी रुपमा प्राप्त गर्न सकिन्छ भनेर सिकाउन सकिन्छ ।

प्रक्रियाको रुपमा (As a Process)

ॐ व्यवस्थापनलाई उद्देश्य प्राप्त गर्ने प्रक्रियाका रुपमा हेरिन्छ । प्रक्रियाका रुपमा व्यवस्थापन विभिन्न अन्तरसम्बन्धित कार्यहरुको श्रृङ्खला हो ।

ॐ जर्ज आर.टेरीका अनुसार "व्यवस्थापन भनेको उद्देश्यहरु निर्धारण गर्न र ती उद्देश्यहरु मानिस तथा अन्य साधनहरुको प्रयोग गरी हासिल गर्नका लागि योजना, सङ्गठन, कार्यान्वयन तथा नियन्त्रण समावेश भएको निर्दिष्ट प्रक्रिया हो ।"

ॐ व्यवस्थापन प्रक्रियाका तत्वहरुमा योजना (Planning), सङ्गठन (Organization), कर्मचारी व्यवस्थापन (Staffing), निर्देशन (Directing) र नियन्त्रण (Controlling) हरु पर्दछन् ।

प्रणालीगत विस्तृत व्यवस्थापन प्रक्रिया
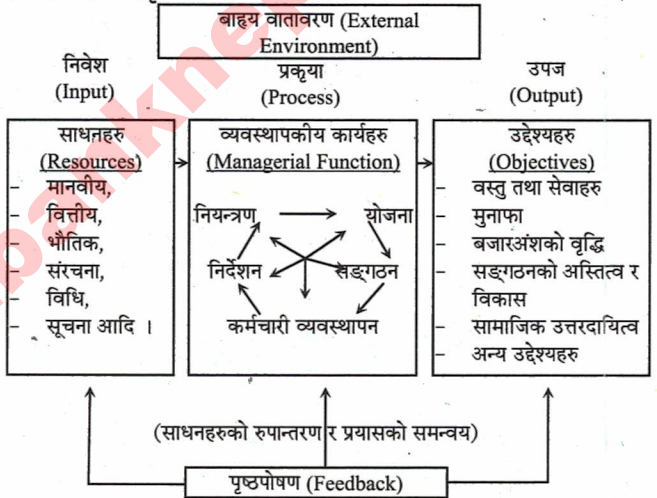
व्यवस्थापनका कार्यहरू

व्यवस्थापनका कार्यका सम्बन्धमा विभिन्न विद्वाहरुले भिन्न भिन्नै खाले मत सारेका छन् । कसैले व्यवस्थापनले योजना बनाउने, नियन्त्रण गर्ने, संगठन सञ्चालन गर्ने र नेतृत्व गर्ने भनेका छन् । कुनै विद्वानले योजना, नियन्त्रण, संगठन र नेतृत्व गर्ने बाहेक समन्वय गर्ने, निर्देशन गर्ने, मूल्याङ्कन गर्ने, गुणस्तर कायम गर्ने लगायतलाई व्यवस्थापनका कार्य भनेका छन् । कुनै विद्वानले योजना गर्ने, संगठन सञ्चालन गर्ने, कर्मचारी व्यवस्था गर्ने, निर्देशन गर्ने, समन्वय गर्ने, प्रतिवेदन तयार गर्ने तथा बजेट तयार गर्नेलाई व्यवस्थापनका कार्य मानेका छन् । समग्रमा व्यवस्थापनका कार्यहरु देहाय बमोजिम छन् :

ॐ **योजना बनाउने (Planning):** व्यवस्थापनको पहिलो र महत्वपूर्ण कार्य हो योजना बनाउने । यसमा खास गरी सङ्गठनको उद्देश्य अनुसार रणनीति बनाउने, कार्य नीति तयार गर्ने तथा विभिन्न खाले क्रियाकलापहरू तय गर्ने कार्यहरु पर्दछन् ।

योजनाले अन्य क्रियाकलापहरूलाई प्रभाव पार्ने हुँदा यसको व्यवस्थापनमा ठूलो महत्व रहेको छ ।
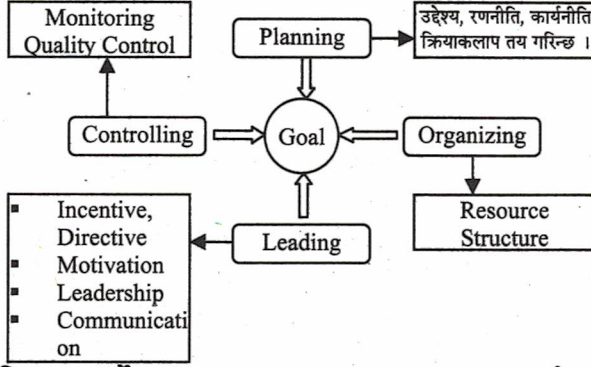
- **नियन्त्रण गर्ने (Controlling):** व्यवस्थापनका कार्यहरू अन्तर्गत नियन्त्रण पनि एक हो । यो खास गरी गुणस्तर कायम गर्ने कामसँग सम्बन्धित छ । संगठनको उद्देश्य प्राप्ति गर्ने क्रममा गरिने विभिन्न क्रियाकलापहरूको Monitoring को काम गर्ने समेत यसको महत्वपूर्ण भूमिका रहेको पाइन्छ ।

- **संगठन गर्ने (Organizing):** यसमा खासगरी संगठनको उद्देश्य प्राप्तिको लागि स्रोतको पहिचान तथा परिचालन र संरचनागत व्यवस्थापनका विविध खाले कामहरू पर्दछन् । व्यवस्थापनले उपयुक्त खालका संरचना तय गर्ने तथा स्रोतको कुशल परिचालन गर्न सकेको खण्डमा मात्र सफलता प्राप्त गर्न सक्ने देखिन्छ ।

- **नेतृत्व गर्ने (Leading):** संगठनात्मक संरचनामा नेतृत्वले खास गरी विभिन्न क्रियाकलापहरूबीच सञ्चार गर्ने, उत्प्रेरणा जगाउने, निर्देशन दिने लगायतका कामहरू पर्दछन् । यसले संगठनको उद्देश्य प्राप्तिमा सकारात्मक प्रभाव पार्दछ ।

- **कर्मचारी व्यवस्थापन गर्ने (Staffing):** व्यवस्थापनको विविध कार्यहरू मध्ये कर्मचारी व्यवस्थापन पनि एक हो । यसमा खासगरी कुनै पनि संगठित संस्थामा संगठनको कार्यप्रकृति तथा कार्य क्षेत्रअनुसार कर्मचारी प्राप्तिदेखि सेवा निवृत्तसम्मका विविध कामहरू पर्दछन् ।

- **निर्देशन गर्ने (Directing):** व्यवस्थापनले गर्ने कामहरू मध्ये निर्देशन पनि एक हो । यसमा खासगरी संगठनको उद्देश्य प्राप्तिको लागि विभिन्न क्रियाकलापहरू सञ्चालन गर्ने र सो क्रममा आवश्यक दिशा निर्देशन गर्ने लगायतका कामहरू पर्दछन् ।

- **समन्वय गर्ने (Coopriting):** यसमा खासगरी संगठनको उद्देश्य प्राप्तिको लागि सञ्चालित विभिन्न क्रियाकलापहरू र त्यस्ता क्रियाकलापहरू सञ्चालनको क्रममा संगठन भित्र तथा बाहिर एक आपसमा समन्वय गर्ने कामहरू पर्दछन् ।

- **प्रतिवेदन गर्ने (Reporting):** व्यवस्थापनले विभिन्न क्रियाकलापहरूको राम्रा नराम्रा पक्षहरूको अध्ययन अनुसन्धान गरी प्रतिवेदन तयार गर्नुपर्ने हुन्छ । जुन वर्तमानमा लागु भई भविष्यमा प्रमाणको रुपमा समेत काम लाग्ने हुन्छ ।

- **बजेट तयार गर्ने (Budgeting):** कुनै पनि योजना सफल पार्नको लागि बजेटको आवश्यकता पर्दछ । यस्तो बजेट तयार गर्ने व्यवस्थापनको कार्य हो । बजेटले कुनै पनि क्रियाकलापहरूको सफलतामा प्रत्यक्ष प्रभाव पार्दछ । यस

कारण पनि बजेट तयार गर्दा व्यवस्थापनले विभिन्न विषयमा विचार पुर्‍याउनु पर्ने हुन्छ ।

☑ **व्यवस्थापनका सिद्धान्तहरू उल्लेख गर्नुहोस् ।**

व्यवस्थापनका सिद्धान्तहरूलाई निम्नानुसार उल्लेख गर्न सकिन्छ :

- **कामको विभाजन :** श्रम विभाजन अन्तर्गत कामदारलाई काम गर्नका लागि एउटा सानो भाग तथा तत्व दिइन्छ । त्यस काममा उसले दक्षता हासिल गर्दछ र कार्यमा विशिष्टिकरण हासिल गर्न सम्भव हुन्छ । श्रम विभाजन जुनसुकै कार्यमा पनि अपनाउन सकिन्छ ।

- **अधिकार :** कार्य सम्पादनमा प्रभावकारिता ल्याउनका लागि कर्मचारीलाई प्रर्याप्त अधिकार प्रदान गरिनु पर्दछ र अधिकारको सही सदुपयोग गर्न उनीहरूलाई उत्तरदायी पनि बनाउनु पर्दछ । त्यसैले अधिकार र उत्तरदायित्व एक अर्काका पूरक हुन् ।

- **अनुशासन :** सम्झौता र सङ्गठनात्मक नीति नियमलाई इमान्दारिता पूर्वक पालना गर्नु पर्दछ । त्यस्ता सम्झौता र नीति नियमहरू पनि स्पष्ट परिभाषित हुनु पर्दछ । सङ्गठनमा कार्यरत सबैले अधिकार र कर्तव्यलाई पालना गर्नु पर्दछ । एक अर्का प्रति सम्मान गर्न सक्नु पर्दछ ।

- **आदेशमा एकता :** एउटा कर्मचारीले एक जनाबाट मात्र आदेश पाउनु पर्दछ । एउटा कर्मचारीलाई धेरैले आदेश गरेका खण्डमा आदेशमा द्वन्द्व सिर्जना भई काममा अलमल हुन जान्छ ।

- **निर्देशनमा एकता :** सङ्गठनात्मक लक्ष्य प्राप्तिका लागि विभिन्न क्रियाकलापहरू सञ्चालन गर्नुपर्दछ । यसका लागि कार्यकारी प्रमुखको निर्देशनलाई पालना गर्ने र निर्देशनमा एकात्मकता हुने संयन्त्रको विकास गर्नु पर्दछ ।

कामको विभाजन
अधिकार
अनुशासन
आदेशमा एकता
निर्देशनमा एकता
सामान्य हित भन्दा व्यक्तिगत हितको कम महत्व
पारिश्रमिक
केन्द्रीकरण
क्रम बद्धता
नियमित
निष्पक्षता
कर्मचारीहरूको स्थायित्व
पहल
सहयोगको भावना

- **सामान्य हित भन्दा व्यक्तिगत हितको कम महत्व :** सामान्य अर्थात् सङ्गठनात्मक हित हासिल गर्न सकेमा स्वतः नै व्यक्तिगत हित हासिल गर्न सकिने हुनाले सङ्गठनात्मक हितलाई पहिलो प्राथमिकता दिनु पर्दछ । व्यक्तिगत हितलाई सङ्गठनात्मक हितभन्दा महत्व दिनुहुँदैन ।

- **पारिश्रमिक :** कर्मचारीलाई काम गरेवापत राम्रो पारिश्रमिक दिनु पर्दछ । अतिरिक्त कामका लागि अतिरिक्त पारिश्रमिक पनि सम्मानजनक रुपले दिनु पर्दछ ।

- **केन्द्रीकरण :** कार्य सम्पादनलाई प्रभावकारी बनाउनका लागि आवश्यक मात्रामा अधिकार प्रत्यायोजन गरे तापनि नीति निर्माण गर्ने अधिकार प्रमुख कार्यकारीमा नै राख्नु पर्दछ । अधिकार प्रत्यायोजनका नाममा सबै अधिकार तल्लो तहमा प्रत्यायोजन गर्नु हुँदैन ।

- **क्रम बद्धता :** कार्यालयमा सञ्चार औपचारिक शृङ्खला माध्यमबाट प्रवाह हुनु पर्दछ । यसका साथै अधिकार पदीय रुपमा प्रत्यायोजन हुनु पर्दछ । सञ्चार तथा अधिकार

प्रत्यायोजनमा क्रमबद्धतालाई उल्लङ्घन गर्नु हुँदैन । अख्तियार श्रृखला माथिबाट तल हुनु आवश्यक हुन्छ ।

🖙 **नियमित** : प्रत्येक चिजको आफ्नै ठाउँ हुन्छ । त्यसैले सङ्गठनात्मक प्रभावकारीता वृद्धि गर्नका लागि कामदार तथा सामान ठीक स्थान तथा ठीक समयमा हुनु आवश्यक छ ।

🖙 **निष्पक्षता** : व्यवस्थापक आफ्ना कर्मचारीसँग मिलनसार तथा निष्पक्ष हुनुपर्दछ । सङ्गठनात्मक विवादास्पद कार्य, नातावाद, कृपावाद जस्ता कुराहरु हाबी हुनु हुँदैन ।

🖙 **कर्मचारीहरुको स्थायित्व** : कर्मचारीले काम गर्ने र छोड्ने प्रवृत्तिलाई न्यूनीकरण गरी लामो समयसम्म काम गर्न प्रतिज्ञा गर्ने वातावरण सृजना गर्नु पर्दछ । यसबाट सङ्गठनात्मक लक्ष्य प्राप्त गर्न सहज हुन्छ ।

🖙 **पहल** : कर्मचारीहरु आदेशलाई मात्र पर्खने मेसिनरी प्रवृत्तिमा बस्नु हुँदैन । धेरैथोरै गल्ती भए पनि नयाँ विचार तथा कार्य गर्न पहल गर्नुपर्दछ । अर्थात आफ्नो बुद्धि र विवेकलाई पनि प्रयोग गर्नु पर्दछ ।

🖙 **सहयोगको भावना** : सहयोगले आपसी विश्वास तथा आदरमा वृद्धि गर्दछ । जसबाट संगठनात्मक लक्ष्य प्राप्त गर्न सजिलो हुन्छ । संगठनमा कार्यरत कर्मचारी -कर्मचारीबीच, विभाग-विभागबीच, तह-तहबीच तथा कर्मचारी - व्यवस्थापकबीच आपसी सहयोग हुन सक्ने किसिमले व्यवस्थापन संरचना तयार पर्नु पर्दछ ।

☑️ **वैज्ञानिक व्यवस्थापनको सिद्धान्त स्पष्ट पार्नुहोस् ।**
(RBB, तह-४, सहायक, २००४/०३/२४)

🖙 सन् १८३२ मा वैज्ञानिक चार्ल्स ब्याबेजले वैज्ञानिक व्यवस्थापनको आन्दोलन सुरुवात गरे तर एफ. डब्लु. टेलर (१८५६-१९१५) वैज्ञानिक व्यवस्थापनलाई उद्योग व्यवस्थापनका समस्याहरु तर्कपूर्ण दृष्टिकोण एवं वैज्ञानिक खोज, विश्लेषण तथा प्रयोगबाट समाधान गर्न सकिन्छ भन्दै व्यवस्थापनलाई सर्वस्वीकार्य गराउने पहिलो व्यक्ति हुन् । उनलाई वैज्ञानिक व्यवस्थापनका जन्मदाता समेत भनिन्छ ।

🖙 टेलरले व्यवस्थापनलाई एक वैज्ञानिक प्रणालीमा विकसित गरे । उनले उद्योगमा न्यून कार्यदक्षताको कारणहरुको पहिचान गर्दै यो निष्कर्षमा पुगे कि प्रायजसो न्यून कार्यदक्षताको मुख्य कारण व्यवस्थापनका विधिहरु व्यवस्थित नहुनु नै हो ।

🖙 टेलरले वैज्ञानिक विधिले नै व्यवस्थापन कार्यमा आइपर्ने समस्याको समाधान गर्नुपर्छ भन्ने कुरालाई जोड दिएका छन् ।

🖙 वैज्ञानिक विधि अन्तर्गत उनले अवलोकन मूल्याङ्कन, प्रयोगिकरण, निचोड तत्वहरु समावेश गरेका छन् ।

🖙 यसका साथै कार्यगत संगठनको प्रयोग, मानसिक परिवर्तन, कामदारहरुको छनौट व्यवस्था र तालिम कार्यक्रम कुराहरु पनि वैज्ञानिक व्यवस्थापनमा समावेश गरेका छन् ।

🖙 टेलरले व्यवस्थापनसम्बन्धी सिद्धान्त निर्भर गर्ने पाँच सिद्धान्तहरु अनुसन्धान, प्रमाणीकरण, योजना, नियन्त्रण तथा सहयोगमा विशेष ध्यान दिए ।

🖙 व्यवस्थापनको क्षेत्रमा टेलरको धारणा पहिलोपटक सन् १८९५ मा मेकानिक इन्जिनियरहरुको अमेरिकी समाजलाई पेश गरेको 'A piece Rate System' नामक लेखमा बाहिर सार्वजनिक रुपमा आयो । अनि १९०३ मा "Shop Management" लेख प्रस्तुत गरे ।

🖙 त्यसैगरी उनका अन्य कृतिहरुमा सन्.१९०६ मा "On the Art of cutting metals" र सन् १९११ मा "The principles of Scientific management प्रकाशित भए ।

🖙 यी मध्ये "Shop management" प्रस्तुत गरेको साल सन् १९०३ लाई वैज्ञानिक व्यवस्थापनको जन्ममितिको रुपमा लिइन्छ ।

टेलरले व्यवस्थापनका क्षेत्रमा निम्न सिद्धान्तहरु प्रतिपादन गरेका छन् :

🖙 **परम्परालाई वैज्ञानिक पद्धतिले विस्थापित गर्नु**: काम सम्पन्न गर्ने सबैभन्दा राम्रो उपाय निर्धारण गर्नु नै वैज्ञानिक पद्धति हो । कुनै पनि क्षेत्रमा कुनै काम सम्पन्न गर्दा कम समय, गति र खर्चमा सम्पन्न गर्नुपर्छ, यहि नै कार्यसम्पादन गर्ने सर्वोत्तम उपाय हो । यसका लागि समय अध्ययन, गति अध्ययन, थकान अध्ययन र विधि अध्ययन लगायतका अध्ययनहरुको माध्यमबाट कुनै पनि कामदारले काम सम्पन्न गर्न चाहिने समय, गति र आरामको स्तर निर्धारण गरिन्छ । यस पद्धतिले अनुभवको आधारमा काम गर्ने परम्परालाई विस्थापित गर्दछ ।

🖙 **सुमधुर सम्बन्ध कायम गर्नु**: वैज्ञानिक व्यवस्थापनको सफल कार्यन्वयनका लागि कामदार र रोजगारदाताको बीच सुमधुर सम्बन्ध हुनुपर्दछ । यस प्रकारको सम्बन्धले कामदारलाई वैज्ञानिक विधि अपनाई काम गर्न हौसला दिन्छ । यस सिद्धान्तअनुसार कामदारलाई व्यवस्थापकहरुले आदेश पालना गर्ने मेसिनका रुपमा मात्र नहेरी उनिहरुलाई साथी जस्तो व्यवहार गर्दै उनिहरुको विचार बुभ्mने, समस्या तथा गुनासोहरु सुन्ने, सुविधा तथा तलब वृद्धि गरिदिने, पदोन्नती गरिदिने गर्नुपर्दछ भने कामदारले पनि व्यवस्थापक तथा रोजगार दातालाई सकारात्मक दृष्टिकोणले हेर्ने, समस्याहरु के छन् राख्ने गर्नुपर्दछ । यस सिद्धान्तले मानसिक ऋान्तिको सिद्धान्तलाई व्यवस्थापन र कामदारहरुबीच सुमधुर सम्बन्ध राख्ने कडीको रुपमा प्रस्तुत गरेको छ ।

व्यवस्थापकको रुपमा टेलरले संस्थाहरु केबल परम्परागत नियमको आधारमा प्रबन्ध भएको देखे । त्यस समयका कामदारहरुले पुरा समय कार्य नगरी जानाजान उत्पादनमा वृद्धि रोकेको देखे । यस्तो अवस्था देखेर तत्कालीन व्यवस्थापनमा सुधार गर्न उनी उत्साहित भए । यसरी काममा कामदारको मन लागोस् र उत्पादनमा वृद्धि होस् भनि काममा परम्परागत पद्धतिको सट्टा कामको वैज्ञानिक विधि अपनाउन सुझाव दिइएको छ ।

🖙 **सहयोगात्मक रुपमा कार्य गर्नु**: वैज्ञानिक व्यवस्थापनले रोजगारदाता तथा कर्मचारीको हितको पूर्ण सहिष्णुतामा जोड दिन्छ जसबाट आपसी लाभदायक सम्बन्धको सृजना हुन्छ ।

> परम्परालाई वैज्ञानिक पद्धतिले विस्थापित गर्नु
> सुमधुर सम्बन्ध कायम गर्नु
> सहयोगात्मक रुपमा कार्य गर्नु
> अधिक उत्पादन हासिल गर्नु
> वैज्ञानिक छनौट, स्थानान्तरण र तालिम
> योजना र कार्यलाई अलग

व्यक्तिवादीको सट्टा सहयोगको भावनामा आधारित हुन्छ । यसको लागि दुवै पक्ष एकअर्काप्रतिको मानसिक दृष्टिकोणमा परिवर्तन ल्याउनुपर्दछ । यस सिद्धान्तले कामदार र रोजगारदाताहरुका बीच बचतको वितरणका कारणबाट हुने विवादलाई सुल्भ्mाउने कोसिस गर्दछ । यस सिद्धान्तअनुसार

कामदार र रोजगारदाताले मौजुदा बचतमा आफ्नो भागलाई बृद्धि गर्न भगडा गर्नुको साटो बचतको आकारमा नै बृद्धि गरी आ-आफ्नो अंश बनाउन सल्लाह दिइन्छ । टेलरले 'meant revolution' को सन्दर्भ राखेका छन् । जहाँ रोजगारदाता र कर्मचारीहरुको ध्यान मुनाफाको वितरणमा नभई मुनाफाको आकार बढाउने तर्फ अग्रसर हुन्छ ।

🔹 **अधिक उत्पादन हासिल गर्नु:** वैज्ञानिक व्यवस्थापनअन्तर्गत व्यवस्थापक तथा कर्मचारीको प्रयत्न नियन्त्रित उत्पादनको सट्टा अधिक उत्पादन हासिल गर्ने हुनुपर्दछ । कामदारलाई अधिक उत्पादनका लागि प्रेरित गर्न उनिहरुले पाउने ज्यालालाई उत्पादन परिमाणको आधारमा भुक्तानी गर्नुपर्ने हुन्छ । यस ज्याला भुक्तानी विधि अनुसार ज्यालाका दुई दर कायम गर्न सकिन्छ । एउटा न्यून ज्यालादर, जसले तोकिएको स्तरको परिमाणमा उत्पादन गर्न सक्दैन । अर्को उच्च ज्यालादर, जसले तोकिएको उत्पादन परिमाणमा वस्तु उत्पादन गर्न सक्छ । यस्तो प्रणालीले कामदारहरुलाई उनीरुको परिश्रम अनुसार पुरस्कृत गरियो भने उत्पादन बढ्छ भन्ने कुरालाई व्याख्या गर्दछ । यसो हुँदा व्यवस्थापनले कम लागतमा धेरै उत्पादन गराउनाले मुनाफा बढ्दछ, कामदारले अधिक ज्याला पाउँदछन् र उपभोक्ताले सस्तो मूल्यमा गुणस्तरीय वस्तु पाउँदछन् ।

🔹 **वैज्ञानिक छनौट, स्थानान्तरण र तालिम:** वैज्ञानिक व्यवस्थापनले कर्मचारीहरुको वैज्ञानिक छनौट, उचित तालिम, स्थानान्तरण तथा विकासमा जोड दिन्छ । उत्पादन बढाउन कर्मचारी वा कामदारको छनौटमा अत्याधिक सावधानी अपनाउनु आवश्यक हुन्छ । छनौट भएका कर्मचारीहरुको क्षमता विकास गर्न उनिहरुलाई उचित तालिमको व्यवस्था गर्नु पर्दछ । व्यवस्थापकले कर्मचारीहरुको क्षमता तथा कार्यदक्षता बृद्धि गर्ने प्रयत्न गर्नुपर्दछ । जिम्मा दिएका सम्पूर्ण कार्यहरु गर्न समक्ष बनाई गलत विधि नअपनाउने कर्मचारीहरुको रुपमा विकास गर्नुपर्छ ।

🔹 **योजना र कार्यलाई अलग:** टेलरले योजना र कार्य दुई अलग अलग कुरा हुन भनेका छन् । त्यसैले टेलरले कामको विशीष्टीकरणबाट हुने फाइदा लिनका लागि योजना र कार्यलाई छुट्याउन जोड दिएका छन् । टेलरले कार्यविभाजन, विशेष तालिम र अनुभवको फाइदा लिनका लागि योजना कार्य अध्यक्षलाई दिने र कार्यन्वयनको कार्य कारखाना निरीक्षकको निर्देशनमा काम गर्ने गरी सम्बन्धित कामदारलाई जिम्मा लगाउने सुभाव दिएका थिए ।

टेलरको बैज्ञानिक व्यवस्थापन सिद्धान्तका सीमाहरु :

टेलरको वैज्ञानिक व्यवस्थापनको सिद्धान्त धेरै उपयोगी र महत्वपूर्ण हुँदा हुँदै पनि देहायका सीमाहरु रहेको देखिन्छ :

🔹 **मानविय पक्षको बेवास्ता:** बैज्ञानिक व्यवस्थापन अन्तर्गत मानिसलाई मेसिन जस्तै ठानियो र पैसालाई नै उत्प्रेरणा को श्रोत ठानियो । मानिसको विवेकशिल र आर्थिक प्रकृतिमा ध्यान केन्द्रित गरेकोले यसले मानविय पक्षले धेरै बेवास्ता गरेको छ ।

🔹 **यान्त्रिक धारणा:** औद्योगिक मनोवैज्ञानिकहरुले यस धारणालाई मानवीय नभएर यान्त्रिक धारणा हो भनेका छन् ।

मानविय पक्षको बेवास्ता
यान्त्रिक धारणा
एक मात्र विधिको प्रयोगमा जोड
दिक्कलाग्दो कामको प्रकृति
उत्पादनमा जोड

यस प्रणालीमा सुपरिवेक्षकले दिएको निर्देशन तथा यन्त्रको गतिमा पूर्वनिर्धारित स्तरअनुसार काम गर्नुपर्ने हुन्छ । साथै कामदारहरुको आफ्नो विवेक र ज्ञानलाई वेवास्ता गरिन्छ तसर्थ यो कामदारलाई यन्त्रवत् काम गराउने पद्धति हो भनी वैज्ञानिक व्यवस्थापनको आलोचना गरेका छन् ।

🔹 **एक मात्र विधिको प्रयोगमा जोड:** एकै किसिमको कामले कामदारहरुको उत्पादकत्व बढ्छ भन्ने ठानियो जसले गर्दा कामलाई वाक्क लाग्दो तथा कामदारहरुलाई नै एकोहोरो बनाउने सम्भावना भयो ।

🔹 **दिक्कलाग्दो कामको प्रकृति:** औद्योगिक मनोवैज्ञानिकहरु अधिकतम विशीष्टीकरण, कार्य विभाजन एवं कामको पुनरावृत्तिका विरुद्धमा देखिन्छन् । यस प्रणालीले कामलाई दिक्कलाग्दो, आवृत्तिमूलक बनाइदिन्छ । यसले गर्दा कामदारहरुको बहुप्रतिभा, विवेक, इच्छा, आकांक्षा र जाँगरलाई सीमित पार्दछ । यसले गर्दा कामदारहरुको इच्छा-शक्तिमा कमी भई कामप्रति कुनै चाँसो हुदैन भनि औद्योगिक मनोवैज्ञानिकहरुले यस व्यवस्थापनको विरोध गरेका छन् ।

🔹 **उत्पादनमा जोड:** वैज्ञानिक व्यवस्थापनले कामदारहरु आर्थिक प्राणी हुन् जो आर्थिक लाभको निम्ति मात्र काम गर्छन् भन्ने मान्यता राखेको हुन्छ । वैज्ञानिक व्यवस्थापनले कामदारहरु योजना गर्न सक्ने क्षमता नभएका र केवल पैसा आर्जन गर्ने प्राणीको रुपमा मात्र हेर्ने गर्दछ । मानिसहरु सामाजिक प्राणी भएकाले योजना पनि गर्न सक्दछन् तर यी कुरालाई विर्सेर मानिसको क्षमता बढी मात्र काम लिने व्यवस्थापन भनी वैज्ञानिक व्यवस्थापनको विरोध गरिएको छ ।

☑️ **फेयोलको प्रशासनिक व्यवस्थापनको सिद्धान्तको चर्चा गर्नुहोस् ।**
बैज्ञानिक व्यवस्थापनले प्रत्येक कामदारले गर्ने बेग्लाबेग्लै कामसँग सरोकार राख्दछ भने शास्त्रीय संगठनात्मक सिद्धान्तले सम्पूर्ण संगठनको व्यवस्थापनलाई ध्यान केन्द्रित गरेको हुन्छ ।

🔹 पूर्ण रुपमा एउटा कठिन संगठनको व्यवस्थापनलाई निर्देशित गर्नु पर्ने आवश्यकताले शास्त्रीय संगठनात्मक सिद्धान्तको प्रतिपादन भएको हो ।

🔹 शास्त्रीय संगठनात्मक सिद्धान्तका अग्रदुत हेनरी फेयोललाई स्वीकार गरिएको छ । फेयोलको विश्वास अनुसार एउटा राम्रो व्यवस्थापन त्यस ढाँचामा निर्भर गर्दछ जुन ढाँचाको पहिचान र विश्लेषण गर्न सकिन्छ ।

🔹 यही विश्वासको आधारमा नै फेयोलले व्यवस्थापनका सिद्धान्तहरु पत्ता लगाई तर्क पूर्वक आफ्नो पुस्तकमा प्रस्तुत गरेका थिए । फ्रान्सको एउटा कोइला कम्पनीमा प्रबन्ध संचालक हुँदा फेयोलले व्यवस्थापनका यी सिद्धान्तहरु पत्ता लगाएका थिए ।

🔹 सन् १९१६ मा फ्रेन्च भाषामा प्रकाशित भएको उनको पुस्तक सन् १९३० मा अग्रेजी भाषामा उल्था नभएसम्म अमेरिकन व्यवस्थापक र विचारकहरुका लागि हेनरी अपरिचित नै थिए र फेयोलको व्यवस्थापन सम्बन्धी विचारसित पनि अनविज्ञ नै थिए । तर फ्रान्सको एउटा नेतृत्व प्रदान गरे त्यो फ्रान्सको औद्योगिक इतिहासको रोमाञ्चकारी घटनाहरु मध्येको एउटा थियो ।

- हेनरी फेयोल (सन् १९४९-१९२५) एक खानी इन्जिनियर भए तापनि उनले आफूलाई एक कुशल व्यवस्थापक र उद्योगपतिका रुपमा पनि उत्तिकै स्थापित गराएका छन् ।

- व्यवस्थापनका सिद्धान्तहरुको विकासमा हेनरी फेयोलको योगदान ज्यादै महत्वपूर्ण छ ।

- उनले सर्वप्रथम सामान्यदेखि उच्च व्यवस्थापकिय तहहरुमा लागु हुने बृहत प्रशासनिक सिद्धान्तहरुको विकासमा जोड दिएका थिए । त्यसैले उनलाई प्रशासनिक व्यवस्थापनका पिता भनिन्छ ।

- उनले व्यवस्थापनमा कार्यगत दृष्टिकोण अपनाए । सन् १९१६ मा उनले फ्रान्सेली भाषामा 'Administration Industrielle Generale' नामक आफ्नो प्रसिद्ध पुस्तक प्रकाशित गरे जसको अंग्रेजी अनुवाद सन् १९२९ मा "General & industrial management' को नाममा प्रकाशित भयो ।

- उनले लेखेको यो पुस्तक आधुनिक व्यवस्थापनको क्षेत्रमा अग्रगामी मानिन्छ । व्यवस्थापनको क्षेत्रमा उनले कार्यगत दृष्टिकोण अपनाएका थिए ।

- फोयलले आफ्नो सिद्धान्तमा चार वटा तत्वहरुलाई विशेष जोड दिएका छन् । व्यवसायिक क्रियाकलाप आफ्नो व्यवहारिक अनुभवको आधारमा फेयोलले व्यवसायिक क्रियाकलापहरुलाई ६ प्रमुख भागमा विभाजन गरे ।

- **प्राविधिक क्रियाकलाप (Technical activities):** जो उत्पादन तथा निर्माणसँग सम्बन्धित हुन्छ ।

- **वाणिज्य क्रियाकलाप (Commercial Activitieis):** जो क्रय-विक्रय तथा विनिमयसँग सम्बन्धित हुन्छ ।

- **वित्तीय क्रियाकलाप (Financial Activities):** जो वित्त तथा पूँजीको कूशलतम प्रयोगसँग सम्बन्धित हुन्छ ।

- **सुरक्षात्मक क्रियाकलाप (Security Activities):** जो व्यक्तिहरु तथा सम्पत्तिहरुको सुरक्षासँग सम्बन्धित हुन्छ ।

- **लेखासम्बन्धी क्रियाकलाप (Accounting Activities):** जो हिसाब किताब राख्ने, स्टक परीक्षण, लागत तथा तथ्याङ्कसँग सम्बन्धित हुन्छ ।

- **व्यवस्थापकीय क्रियाकलाप (Managerial Activities):** जो कम्पनी व्यवस्थापन अथवा योजना, संगठन, आदेश, समन्वय तथा नियन्त्रणसँग सम्बन्धित हुन्छ ।

फेयोलले प्रशासनिक व्यवस्थापनका सम्बन्धमा विभिन्न चौध वटा सिद्धान्तहरु प्रतिपादन गरेका छन् । उनले विकास गरेका सिद्धान्तहरु व्यवस्थापनका सबै तहमा लागू गर्न सकिए तापनि विशेष गरेर सामान्य व्यवस्थापन र उच्चतम तहको व्यवस्थापनमा उपयोगी मानिन्छन् । फोयलका अनुसार, व्यवस्थापनका सिद्धान्तहरु सर्वव्यापी एवम् लचिला छन्, जसले गर्दा व्यवसायिक संगठन, राजनैतिक संगठन, धार्मिक संगठन र अन्य विभिन्न प्रकारका संगठनहरुमा परिस्थिति एवम् आवश्यकता अनुसार व्यवस्थापनका सिद्धान्तहरु प्रयोग गर्न सकिन्छ । फोयलले विकास गरेका व्यवस्थापनका चौध वटा सिद्धान्तलाई तल संक्षिप्त रुपमा वर्णन गरिएको छ ।

फायोलद्वारा प्रतिपादित प्रशासनिक व्यवस्थापनका सिद्धान्तहरु यस प्रकार छन् :

१. **अधिकार र जिम्मेवारी:** आदेश दिने शक्तिलाई अधिकार भनिन्छ अनि आफू भन्दा माथिल्लो तहका कर्मचारीले दिएको निर्देशन अनुसार काम सम्पन्न गर्नुलाई जिम्मेवारी भनिन्छ । फोयलले अधिकार र जिम्मेवारीलाई एकअर्काका पूरकको रुपमा मानेका छन् । जिम्मेवारी विनाको अधिकारले कर्मचारीहरु गैरजिम्मेवार प्रवृत्ति बढाउँछ र अधिकार विनाको जिम्मेवारीले कर्मचारीमा कर्तव्य बोधको सिर्जना गराउँदैन । व्यवस्थापनका सफलता अधिकार र जिम्मेवारी बीचको समानतामा भर पर्ने भएकाले फोयलले संगठनका कर्मचारीलाई त्यतिमात्र अधिकार दिनु, जति उनीहरुबाट काम लिन सकिन्छ भनि सुझाव दिएका छन् ।

२. **आदेशमा एकात्मकता:** यो सिद्धान्तले कुनै पनि काम गर्ने कर्मचारीले कामको सिलसिलामा पाउने आदेश एउटै अधिकारीबाट मात्र पाउनु पर्ने बुझाउँछ । कुनै खास कामको कुनै एक अधिकारी प्रति मात्र जिम्मेवारी भएमा मात्र काम गर्न सजिलो हुन्छ । आदेशमा एकात्मकता नभए धेरै जना आदेश दिने भयो भने काममा ढिलासुस्ती, अनुशासनहीनताको प्रवृती बढ्छ ।

३. **निर्देशनको एकात्मकता:** यस सिद्धान्तले संगठनका समान लक्ष्य एवम् उद्देश्य भएका समूहगत क्रियाकलापहरु एउटै व्यवस्थापकअन्तर्गत हुनुपर्छ भन्ने बुझाउँछ । जसअनुसार एकै निर्देशनले सम्पूर्ण क्रियाकलापहरु लक्ष्यप्राप्तिका लागि गर्न सरल बनाउँछ ।

४. **आदेशको श्रृंखला :** यो सिद्धान्त अनुसार एउटै अधिकारीबाट मात्र एउटा कर्मचारीले आदेश प्राप्त गर्नुपर्छ । धेरै व्यक्तिहरुबाट एकैपटक आदेश प्राप्त भएमा काममा लापरवाही, ढिलासुस्ती, भ्रम उत्पादन हुन्छ र यस्तो परम्पराले निष्ठा विभाजन र अनुशासन पनि कमजोर हुने देखिन्छ ।

५. **कार्य विभाजन:** फोयलका अनुसार कार्य विभाजन भनेको कर्मचारीलाई उनीहरुले क्षमता र दक्षताको आधारमा संगठनका कामहरुलाई सुम्पिनु हो । यो सिद्धान्तलाई टेलर तथा अन्य अर्थशास्त्रीहरुले विशिष्टीकरणको सिद्धान्त समेत भनेका छन् । कार्य विभाजन हुँदा जिम्मेवारी बोध बढ्छ फलस्वरूप सो काम जिम्मा लिने कर्मचारीले सोही काममा विशिष्टता पाउँछ । यस सिद्धान्त अनुसार कामलाई सानो सानो भागमा विभाजन गरी कर्मचारीमा सुम्पिनाले कुनै पनि व्यक्तिको सानो प्रयासबाट अधिकतम परिणाम आउँछ ।

६. **अनुशासन:** अनुशासन कायम राख्नु भनेको फोयलका विचारमा सबै तहमा असल नेतृत्व दिनु, कामदार र रोजगारदाताहरुबीच रोजगारीसम्बन्धी निष्कपट सम्झौता हुनु एवं कर्मचारीहरुलाई दण्ड दिनुपर्दा विना भेदभाव अनुशासनहीनताको प्रकृति अनुसार सबैलाई एकैखाले दण्ड दिनु वा व्यवहार गर्नु हो । यहाँ अनुशासन पालना मातहतका कर्मचारीले मात्र पालन गर्ने नभएर नेतृत्व गर्ने कर्मचारीले समेत पालन गर्ने हो । किनकि नेतृत्व गर्ने कर्मचारीले नै अनुशासनको पालना गरेन भने उसका मातहतका कुनै पनि कर्मचारीले अनुशासनको पालना गर्दैनन् ।

७. **सामूहिक हितका लागि व्यक्तिगत हितको समर्पण:** यस सिद्धान्तअनुसार संगठनको हित व्यक्तिगत हितभन्दा महत्त्वपूर्ण मानिन्छ । सांगठनिक उद्देश्य हासिल भएमात्र व्यक्तिगत हित प्राप्त गर्नसकिन्छ । संगठनको कुनै पनि कार्य कुनै पनि व्यक्ति विशेषको लाभका लागि नभएर सम्पूर्ण संगठनको हितलाई ध्यानमा राखी गर्नुपर्दछ ।

८. **पारिश्रमिक:** सामान्यतया काम गरेवापत कर्मचारीले पाउने रकम नै पारिश्रमिक भन्ने बुभिन्छ । यस सिद्धान्तले प्रत्येक कर्मचारीलाई उसको योग्यता एवं काममा गर्नुपर्ने श्रमअनुसारको पारिश्रमिक दिनुपर्छ भन्ने कुरालाई जनाउँछ । पारिश्रमिक दिने कुरामा फोयलका अनुसार पारिश्रमिकमा आधारभुत मापदण्डका मनोरञ्जन बोनस, भत्ता, अन्य सुविधा पर्दछन् । कर्मचारीलाई उचित पारिश्रमिक नदिएको खण्डमा उनिहरुको मनोबल वृद्धि हुन पाउँदैन त्यसकारण कार्यकुशलता प्रदर्शन गर्न सक्दैनन् जसले गर्दा समग्र सांगठनिक प्रगति हुन सक्दैन ।

अधिकार र जिम्मेवारी
आदेशमा एकात्मकता
निर्देशनको एकात्मकता
आदेशको श्रृंखला
कार्य विभाजन
अनुशासन
सामूहिक हितका लागि व्यक्तिगत हितको समर्पण
पारिश्रमिक
केन्द्रीकरण
श्रृङ्खलाबद्धता
समानता
कर्मचारीहरुको पदमा रहने समयको स्थायित्व
अगुवाई गर्ने उत्साह
सहयोगको भावना

९. **केन्द्रीकरण:** यस सिद्धान्तअनुसार कर्मचारीलाई दिइने अधिकारको केन्द्रीकरण र विकेन्द्रीकरणबीच सन्तुलन मिलाउन सही एवं उचित निर्णय लिन व्यवस्थापकले सक्नु पर्दछ । अधिकार जति व्यवस्थापकले आफै राखेमा कर्मचारीको भूमिका न्यून हुन्छ तर अधिकारलाई विकेन्द्रीकरण गरेको खण्डमा सहायक कर्मचारीहरुको संगठनमा भूमिका वृद्धि हुनुपुग्दछ । फोयलका अनुसार कुनै पनि संगठनमा अधिकारको केन्द्रिकरण कुन हदसम्म गर्नुपर्छ यो कुरा संस्थाको प्रकृति, कार्यको प्रकार, संगठनको अकार, संगठनात्मक बनावट एवं अधीनस्थ कर्मचारीको कार्यकुशलतामा भर पर्दछ ।

१०. **श्रृङ्खलाबद्धता:** यस सिद्धान्तले कुनै पनि संगठनमा भएका माथिल्लो स्तरका पदाधिकारी देखि क्रमशः न्यून स्तरका कर्मचारी तथा उनिहरुका मातहतमा काम गर्ने कर्मचारी सम्मको सूचना, आदेश र आदेशको पालनाको बाटो सीधा एवं श्रृङ्खलाबद्ध हुनुपर्ने जनाउँछ । एउटा संगठनको लक्ष्य प्राप्तिका लागि यो श्रृङ्खला अपनाउनु एकदम आवश्यक देखिन्छ । यस सिद्धान्तलाई नअपनाउदा संगठनमा अस्तव्यवस्तता आउन सक्छ ।

११. **समानता:** यहाँ समानता भन्नाले सौहार्दतापूर्ण व्यवहार तथा कर्मचारीहरुमा माथिल्लो स्तरका कर्मचारीहरुले गर्ने समान व्यवहार बुभिन्छ । कर्मचारीहरुमा कार्य गराउँदा, ज्याला दिँदा, पुरस्कृत गर्दा, दण्ड दिँदा कसैमा नछुट्याई समान तरिकाले गर्नुपर्छ ।

१२. **कर्मचारीहरुको पदमा रहने समयको स्थायित्व:** यस सिद्धान्त अनुसार संगठनमा काम गर्ने कर्मचारीहरुको कार्यकाल निश्चित हुनुपर्छ । जसले कर्मचारीको व्यक्तिगत हिसाब साथै सांगठनिक प्रगतिमा पनि सहयोगी भुमिका खेल्दछ । कुनै पनि कर्मचारीलाई छनौट गर्दा नै उसको कार्यकाल तोकिदिएमा उसको काम गर्ने मनोबल उच्च हुनका साथै कामको स्थायित्वको प्रभावले संगठनमा पनि फाइदा पुग्दछ । नचाहिदो सरुवा, बढुवा, घटुवा तथा कामबाट नहटाई उनिहरुले काममा

बिताउनु पर्ने कार्यअवधि निश्चित गरिदियो भने नयाँ कर्मचारीलाई तालिम दिनुपर्ने खर्च कम हुन्छ ।

१३. **अगुवाई गर्ने उत्साह:** संस्थाको कुशल व्यवस्थापनका लागि कर्मचारीहरुलाई विभिन्न वित्तीय एवं गैरवित्तीय प्रेरणा प्रदान गर्नुपर्छ । यसरी अनुवाई गर्ने प्रणालीले कर्मचारीहरुमा ज्यादै राम्रो मनोवैज्ञानिक असर गर्दछ र यसले गर्दा कर्मचारीहरुले कार्यसम्पादनको नयाँ नयाँ एवं प्रभावकारी योजनाहरु प्रस्तुत गर्न सक्तछन् र संस्थालाई सफल बनाउनमा लागत एवं तत्परतासँग काम गर्छन् ।

१४. **सहयोगको भावना:** यस सिद्धान्त अनुसार संगठनका कर्मचारीहरु बिच सहयोगको भावना एवम् समूह कार्य हुनुपर्छ भन्ने कुरालाई बुभाउँदछ । संगठनको सफलताको लागि कर्मचारीहरुबीच सामूहिक कार्य र सहयोगको भावना हुनु अत्यन्त जरुरी हुन्छ । यस्तो भावनाले संगठनमा पारस्परिक एकता कायम रहन्छ, जसले गर्दा संगठनको उद्देश्य हासिल गर्न सहयोग पुग्छ । यस सन्दर्भमा हेनरी फोयलले व्यवस्थापकलाई विभाजन गरी शासन गर्ने नीतिलाई अनुसरण नगर्न र लिखित सञ्चारको साटो मौखिक सञ्चार अपनाई कर्मचारी र व्यवस्थापकबीच हुने अविश्वास र मत भिन्नतालाई हटाउन सल्लाह दिएका छन् ।

फोयलले आफ्नो सिद्धान्तमा निम्न चारवटा तत्वहरुलाई विशेष जोड दिएका छन् :

१. व्यवसायिक क्रियाकलाप,

   (क) प्राविधिक,

   (ख) वित्तीय,

   (ग) सुरक्षा,

   (घ) लेखा,

   (ङ) वाणिज्य,

   (च) व्यवस्थापकीय,

२. व्यवस्थापकीय सिद्धान्त,

३. व्यवस्थापनको कार्य,

४. व्यवस्थापकीय गुण तथा सीप ।

☑ **म्याक्स वेबरको कर्मचारीतन्त्रको अवधारणा र सिद्धान्तहरुको व्याख्या गर्नुहोस् ।**

↳ व्यवस्थापन औपचारिक नीति नियमबाट मात्र सञ्चालन हुनु पर्दछ भन्ने सिद्धान्त कर्मचारीतन्त्रको सिद्धान्त हो । यस सिद्धान्तको प्रवर्तक म्याक्स वेबर हुन् ।

↳ प्रायः ठुला जटिल प्रकृतिका संगठनमा यो सिद्धान्त बढी मात्रामा प्रयोग भएको पाइन्छ ।

↳ यस सिद्धान्तमा नीति नियम तथा अधिकारको श्रृखलाद्वारा व्यवस्थापन गरिन्छ । यो सिद्धान्तको विश्वव्यापी रुपमा सरकारी तथा मिलिटरी संगठनमा बढी प्रयोग हुँदै आएको पाइन्छ ।

↳ सामान्यतया कर्मचारीतन्त्र भन्नाले अधिकारको श्रृङ्खलालाई संगठनको माथिल्लो तहदेखि तल्लो तहसम्म स्पष्टरुपमा व्याख्या एवं पालना गर्दै नीति नियम तथा नजरको परिधिभित्र रहेर संगठनको संचालन गर्ने प्रक्रिया भन्ने बुभिन्छ ।

↳ Max weber (१८६४-१९२०) ले कर्मचारीतन्त्रको सिद्धान्तको प्रतिपादन गरेका हुन् । उनको परिभाषाअनुसार "कर्मचारीतन्त्र त्यस्तो प्रणाली हो जसमा निपूर्णता, निष्पक्षता एवं मानवीयतारहित विशेषताहरु विद्यमान रहेका हुन्छन् ।"

(Bureacracy is a system of administration characterized by expertness, impartiality & the absence of humanity.)

↳ तर पनि कर्मचारीतन्त्रको सही परिभाषा दिन ज्यादै कठिन हुन्छ । शब्दकोषको परिभाषाअनुसार – "कर्मचारीतन्त्र भन्नाले जनताबाट चुनिएका नभई तलबी अधिकारीहरुबाट संचालित सरकार भन्ने बुझिन्छ ।

विशेषताहरु :

↳ **कार्य विभाजन :** यस सिद्धान्तमा कर्मचारीहरुले सम्पादन गर्नु पर्ने कार्यहरु प्रष्टसँग विभाजन गरिएको हुन्छ । विभिन्न विभागहरुलाई विशेषः कामको जिम्मेवारी प्रदान गरिएको हुन्छ । यस सिद्धान्तबाट कर्मचारीहरुले कार्य विशिष्टीकरण समेत हासिल गर्दछन् ।

↳ **तह तथा अधिकारमा स्पष्टता :** व्यवस्थापक तथा कर्मचारीहरुको पदीय श्रृंखला स्पष्ट तोकिएको हुन्छ । सोही आधारमा अधिकार तथा नेतृत्वको व्यवस्था समेत किटान गरिएको हुन्छ ।

↳ **कानुन वा नियमद्वारा व्यवस्थित :** कार्य सम्पादनका लागि आवश्यक नियमहरु बनाएको हुन्छ । सोही रुपलाई पूर्ण पालना गरी काम गर्ने गरिन्छ ।

↳ **कार्यविधि :** कर्मचारीतन्त्रमा हरेक काम गर्ने विधि औपचारिक प्रक्रियाबाट निर्धारण गरिएको हुन्छ ।

कार्य विभाजन
तह तथा अधिकारमा स्पष्टता
कानुन वा नियमद्वारा व्यवस्थित
कार्यविधि
प्राविधिक योग्यतामा आधारित कर्मचारी
व्यक्तिगत सम्बन्धको प्रभाव

↳ **प्राविधिक योग्यतामा आधारित कर्मचारी :** यस सिद्धान्तमा कर्मचारीको भर्ना छनौट तथा पदोन्नती उनीहरुले हासिल गरेको शिक्षा तथा क्षमताको आधारमा गर्ने गरिन्छ । अतः यसले कर्मचारीको स्वेच्छिक निष्कासनमा नियन्त्रण गर्छ ।

↳ **व्यक्तिगत सम्बन्धको प्रभाव :** यस सिद्धान्तमा माथिल्लो तहका कर्मचारी र तल्लो तहको कर्मचारी बीचमा ठुलो सामाजिक अन्तर हुने भएकाले व्यक्तिगत सम्बन्धको प्रभाव पर्दैन ।

कर्मचारीतन्त्रका फाइदाहरु

➡ यसमा विवेकपूर्ण निर्णय हुन्छ ।
➡ अधिकतम कुशलता कायम हुन्छ ।
➡ उपयुक्त नियन्त्रण हुन्छ ।
➡ द्विविधाको अन्त्य हुन्छ ।
➡ विशिष्टीकृत सेवा हुन्छ ।
➡ स्पष्ट वृत्तिमार्ग हुन्छ आदि ।

कर्मचारीतन्त्रका बेफाइदाहरु

➡ मानवीय पक्षको अवहेलना हुन्छ ।
➡ रणनीतिक सोचको अभाव हुन्छ ।
➡ न्यून कार्यसम्पादन हुन्छ ।
➡ उत्तरदायित्व बहनमा निरुत्साह हुन्छ ।
➡ सञ्चार एवं निर्णयमा ढिलासुस्ती हुन्छ ।
➡ व्यक्तिगत पहलको कमी हुन्छ आदि ।

☑ **मानव सम्बन्ध सिद्धान्तको चर्चा गर्नुहोस् ।**

↳ मानव सम्बन्ध सिद्धान्तलाई समग्र व्यवस्थापनमा महत्वपूर्ण मानिन्छ । खास गरी यस सिद्धान्तले संगठनमा मानव मनोविज्ञानको महत्वपूर्ण प्रभाव पारेको हुन्छ भन्ने मान्यता राख्छ ।

↳ यसलाई व्यवहारवादी आन्दोलनको रुपमा समेत लिइन्छ । मानव मेसिन होइनन् र मानिसमा मौद्रिक कुराले मात्र कार्यप्रेरणा जगाउन सक्तैन भन्ने धारणा राख्ने यो सिद्धान्तका प्रमुख प्रतिपादक इल्टन मायो हुन् ।

↳ मायो र उनका समर्थकहरुले पहिलो अनुसन्धान हार्वर्ड विश्वविद्यालयमा समावेश भएपछि गरेका थिए । यसलाई पहिलो छानविन भनिएको थियो ।

↳ उनको टोलीले Mule Spinning को समस्याको बारेमा अनुसन्धान गरेको थियो । यसमा विभिन्न पक्षजस्तै भौतिक, सामाजिक, मनोवैज्ञानिक, शारीरिक क्रियाकलापहरु आदिको राम्रोसँग अनुसन्धान गरिएको थियो ।

↳ सहभागितामूलक लामो अवलोकनपछि उनले पत्ता लगाए कि सबैजसो कामदारहरु खुट्टाको रोगले पीडित थिए । मायोले नर्सको माध्यमबाट सबै सूचनाहरु प्राप्त गरेपछि व्यवस्थापनको अनुमतिले आफ्नो प्रयोग आरामको समयसँगै गरे ।

↳ मायोले दश मिनेटमा दुई मिनेटको समय आरामको समयको रुपमा छट्याए । यसको नतिजा पनि उत्साहप्रद देखियो ।

↳ विस्तारै यो पद्धति भौतिक थकान हटाउन सबैमा लागु गरियो । यसमा कामदारले पनि इच्छा देखाए र परिणाम पनि सन्तोषप्रद नै देखियो । जसले गर्दा कामदारको उदासीनको लक्षण हटेको थियो ।

↳ शारीरिक थकानको समस्या हटेपछि मायोले सो कम्पनीमा कहिल्यै लागु नगरिएको बोनसको सुझाव दिएका थिए ।

☑ **हाउथोर्न अध्ययन बारे चर्चा गर्नुहोस् ।**

↳ यस अध्ययनमा खास गरी काम प्रतिको दक्षतालाई रोक्न समस्याहरुमा अनुचित कार्ययोजना, थकावट र कार्य सम्बन्धी अन्य अवस्थाहरु हुन् भन्ने कुरामा विश्वास गरिएको थियो ।

↳ काम गर्ने स्थानमा बत्ती वा प्रकाशको व्यवस्था पनि महत्वपूर्ण पक्ष रहेको विश्वासका साथ यो अनुसन्धान सन् १९२० र १९३० को अवधिमा गरिएको थियो ।

↳ यस अध्ययनमा मुख्य रुपमा उत्पादकत्वसँग बत्तीको सम्बन्ध छ छैन भन्ने कुरालाई लिएर अनुसन्धान गरिएको थियो । तर बत्तीको अवस्था घटाउँदा पनि उत्पादकत्व बढेको अवस्था पाइएपछि उत्पादकत्वसँग बत्तीको सम्बन्ध छैन भनि निष्कर्ष निकालिएको थियो ।

↳ यस पछि सहभागिमूलक परीक्षण गरियो । कामदार महिलाहरुलाई सामाजिक एकाइको रुपमा समावेश गराइयो र सामाजिक मानवको रुपमा अनुसन्धानको ढोका खोलियो । खास गरी यो अध्ययनमा सुपरभाइजरले अनुगमन गर्ने पद्धतिमा परिवर्तन गरिएको र कामदारको समूहलाई सामाजिक वातावरणको आभास दिइएको र व्यवस्थापकीय व्यवहारमा परिवर्तन गरिएको थियो ।

↳ सुपरभाइजरलाई हाकिमजस्तो नभई निजबाट कामदारले सल्लाह लिन सक्ने, उनीहरुको कुरा सहानुभूतिपूर्वक विचार गर्ने, मनमा लागेका कुरा स्वतन्त्र रुपमा भन्न पाउने र कामदार तथा व्यवस्थापकबीच अन्तरवैयक्तिक सम्बन्ध स्थापित गर्दै साथीभाइको सम्बन्ध स्थापित गराइयो ।

- यसबाट के पत्ता लाग्यो भने कार्य सन्तुष्टि ठूलो हदसम्म अनौपचारिक सामाजिक ढाँचाबाट मिल्छ । यसको लागि सुपरभाइजरको भूमिका परिवर्तन गर्नुपर्ने कुरा औल्याइयो । सुपरभाइजर, कामदारको मनोबल र उत्पादकत्वको सम्बन्ध हुन्छ भन्ने निष्कर्ष निकालिएको थियो । यसरी यो सिद्धान्तले पत्ता लगाएका कुराहरूलाई सारांशमा यसरी उल्लेख गर्न सकिन्छ:

- खासगरी यो सिद्धान्त Hawthorne Experiment को अध्ययनको निष्कर्षबाट प्रतिपादन भएको सिद्धान्त हो ।

- यो सिद्धान्तले संगठनमा Informal Group को प्रबल भूमिका रहन्छ भन्ने कुरालाई विश्वास गरेको ।

- कामदार–कामदार, कामदार–व्यवस्थापक बीच मनोवैज्ञानिक सम्पर्क र आवश्यकता पूर्ति हुने वातावरण मात्रै व्यवस्थापनको आवश्यकता पूर्ति हुन्छ भन्ने मान्यता राख्दछ ।

- मानिसको सामाजिक सम्बन्ध र मानसिक सन्तुष्टिले उत्पादनमा असर पार्दछ ।

- Management का लागि Social Skill चाहिन्छ ।

- A. Maslow, Hertzberg, Mc. Gregor जस्ता व्यक्तिहरूले यसै आन्दोलनको क्रममा Motivation का विषयमा चिन्तन गरे ।

मानवीय सम्बन्ध विकाससम्बन्धी अवधारणाले संगठनमा मानवीय पक्षको अध्ययन गर्दै उसको सारभूत अस्तित्वलाई स्वीकार गर्‍यो । मानिसले संगठनमा किन काम गर्दछ र त्यसका लागि कसरी उत्प्रेरित हुन्छ भन्ने सम्बन्धमा थुप्रै अध्ययनहरू गर्‍यो र ती अध्ययनका निष्कर्षलाई उपयोग गर्न सुझाव समेत दियो ।

☑ **System Theory को छोटो व्याख्या गर्नुहोस् ।**
- यो सिद्धान्तका प्रतिपादक Talcon Parson हुन् ।
- यस सिद्धान्तलाई मावन शरीरसँग तुलना गरिएको थियो ।
- यो सिद्धान्तले संगठनलाई Input, Output र Conversion Machine को रुपमा लिएको थियो ।
- संगठनको Sub-system मा भएको परिवर्तनले संगठनको पुरा प्रणालीमा नै असर पार्छ भन्ने मान्यता यस सिद्धान्तले दियो ।

☑ **Management of Objective (MBO) को छोटो व्याख्या गर्नुहोस् ।**
- सन् १९५४ मा Peter Drucker ले The Practice of Management को रुपमा MBO लाई अघि ल्याएका थिए ।
- MBO मा समावेश हुने कुराहरू देहायबमोजिम छन्:
  - Goal setting,
  - Action planning,
  - Self Control,
  - Periodic Review आदि समावेश हुन्छन् ।

☑ **Participative Management (Renis Liker) को छोटो व्याख्या गर्नुहोस् ।**
- खासगरी यो सिद्धान्तमा कामदार कर्मचारीलाई निम्न कार्यमा समावेश गराइन्छः
  - Objective Setting
  - Program Execution
  - Alternative Choice
  - Decision Making
  - Distribution of Benefit
  - Evaluation

- खास गरी यो सिद्धान्त उत्प्रेरणाको Theory 'Y' को सिद्धान्तका आधारमा विकास गरिएको हो ।

☑ **Contingency Approach को छोटो व्याख्या गर्नुहोस् ।**
- यो सिद्धान्तलाई Situational Approach पनि भनिन्छ ।
- व्यवस्थापनको सिद्धान्त जुनसुकै परिस्थितिमा लागु गर्न सकिने हुनुपर्छ ।
- Situational Variables:
  - संगठनको आकार,
  - कामदारको जटिलता,
  - प्रशासकको तह र अधिकार,
  - व्यक्तिगत भिन्नता,
  - पुरस्कार प्रणाली,
  - वातावरणीय भिन्नताको मात्रा आदि ।

☑ **New public management (NPM) को छोटो व्याख्या गर्नुहोस् ।**
- यो खास गरी १९९० को दशकबाट आएको नवीनतम अवधारणा हो ।
- यो मुख्य गरी परम्परागत प्रशासनमा देखिएका कमजोरीहरू हटाउने उद्देश्यका साथ आएको पाइन्छ ।
- यो अवधारणालाई खास गरी managerialism/market based public administration को आवश्यकताले जन्माएको हो ।
- समग्रमा निजी क्षेत्रको व्यवस्थापकीय शैलीको सार्वजनिक प्रशासनमा प्रयोग गर्ने प्रयासको रुपमा यसलाई लिन सकिन्छ ।
- NPM आधारको रुपमा अर्थशास्त्रको छनौट सिद्धान्त, principal agent theory and voters र representative को सिद्धान्तलाई लिन सकिन्छ ।
- NPM ले Economy, Efficiency र effectiveness लाई जोड दिन्छ । नतिजामूलकता व्यवस्थापकीय स्वन्त्रता, सानो राम्रो सरकार बजारोन्मुख सार्वजनिक प्रशासन सोझो उत्तरदायित्व यसका विशेषताहरू हुन् ।

☑ **व्यवस्थापनको महत्व बारे चर्चा गर्नुहोस् ।**
कुनै पनि संगठनको उद्देश्य प्राप्तिमा त्यस संगठनको व्यवस्थापनको अहम् भूमिका रहेको हुन्छ । व्यवस्थापनका महत्वहरूलाई निम्नानुसार उल्लेख गर्न सकिन्छ :

- **साधनहरूको प्राप्ति र प्रयोग गर्न :** व्यवस्थापनले साधनहरूको प्राप्ति र प्रयोग गर्दछ । यसले कार्यको अदक्षता र साधनको दुरुपयोगलाई न्यून गर्दछ । संस्थामा पर्याप्त साधन भए नभएको सुनिश्चित गरी त्यसलाई उचित तरिकाले उचित ठाउँमा प्रयोग गर्न व्यवस्थापनको भूमिका महत्वपूर्ण रहन्छ । व्यवस्थापनले कर्मचारीहरूलाई कार्यसम्बन्धी राम्रो जानकारी र दक्षता हासिल गरेको सुनिश्चित गर्दछ । त्यसैगरी व्यवस्थापनले उपलब्ध साधन प्राप्ति र प्राप्त साधनको प्रयोग गर्न कर्मचारीहरूलाई उचित तालिम तथा मार्गदर्शन गर्दछ । साधनहरूको प्राप्ति र प्रयोग गर्न व्यवस्थापनको ठूलो महत्व रहन्छ ।

- **वातावरणीय चुनौतिहरूको सामना गर्न :** कुनै पनि व्यवसायिक संगठन परिवर्तनशील वातावरणमा सञ्चालन हुन्छ । त्यसरी परिवर्तन भइरहने वातावरणका कारण व्यवसायलाई विभिन्न किसिमका जोखिम तथा अनिश्चित सृजना गराउँछ । व्यवस्थापनले यस्ता विविध खाले वातावरणीय चुनौतिहरू

अगाडि नै पूर्वानुमान गरी त्यही अनुसार कदम चाल्न मद्दत गर्छ । परिवर्तित वातावरणीय चुनौतीहरूको सामना गर्न पनि राम्रो व्यवस्थापनको जरुरत पर्दछ । यसका साथै व्यवसायिक सफलता हासिल गर्न वातावरणीय चुनौतीको सामना गर्नु मात्र नभएर त्यस्तो परिवर्तित व्यवसायिक वातावरणसँगै व्यवसायले आफूलाई पनि परिवर्तन गर्नुपर्दछ । यसका लागि व्यवस्थापनको भूमिका महत्वपूर्ण रहन्छ ।

⇨ **गतिशील दृष्टिकोण :** व्यवस्थापनको महत्वहरू मध्ये गतिशील दृष्टिकोण पनि एक हो । कुनै पनि व्यवसायिक संगठनले तत्कालको मात्र नजर राखेर बस्ने हो भने संगठनको कार्य कुशलताका साथ सम्पन्न हुन सक्दैन । संगठनको दृष्टिकोण एकदम गतिशील हुन जरुरी छ त्यसबाट भविष्यमा आईपर्ने समस्यासँग लड्न तथा उपयुक्त भावि योजना तर्जुमा गर्न सकिन्छ ।

⇨ **समन्वय:** व्यवसायिक संगठनमा समन्वयका लागि व्यवस्थापन एकदम महत्वपूर्ण रहन्छ । समन्वय सुदृढ बनाउन सके व्यवस्थापनको लागि एकदम हितकारी हुन्छ । संगठनमा विभिन्न विभाग, निकाय, शाखा, उपशाखाहरू रहेका हुन्छन् । तिनीहरू बीच समन्वय एवं सह-सम्बन्ध हुनु एकदम जरुरी हुन्छ । त्यही समन्वय बनाउन उचित प्रबन्ध गर्नको लागि व्यवस्थापनको भूमिका महत्वपूर्ण हुन्छ । त्यसका साथै समन्वय अन्तर्गत कर्मचारीको आवश्यकता निर्धारण, छनौट, प्रशिक्षण, मूल्याङ्कन, पारिश्रमिक तोक्ने र विकास सम्बन्धी कार्यहरू पनि पर्दछन् ।

> साधनहरूको प्राप्ति र प्रयोग गर्न
> वातावरणीय चुनौतिहरूको सामना गर्न
> गतिशील दृष्टिकोण
> समन्वय
> समस्या समाधान विधि
> नियन्त्रण

⇨ **समस्या समाधान विधि:** प्रत्येक संगठनको प्रगति तथा उन्नती कुशल व्यवस्थापनको महत्वपूर्ण भूमिका रहेको हुन्छ । प्रत्येक संगठनको उत्पादकत्व कुशल तथा सक्षम कर्मचारीमा भर पर्दछ । अकुशल र अशक्षम कर्मचारीको नचाहिने खर्च बढ्ने तथा घाटा हुने हुन्छ । कुशल कर्मचारीको अभावमा संगठन नै निष्क्रिय हुन्छ । कर्मचारी व्यवस्थापन व्यवसायको उन्नतीको लागि अपरिहार्य विषय हो । यसका बावजुत पनि संगठनमा आईपर्ने समस्याहरू समाधान गर्न जरुरी हुन्छ । जसका लागि व्यवस्थापन नै प्रमुख समाधान हुन्छ । कुशल व्यवस्थापनले गर्दा साङ्गठनिक समस्या पनि समाधानका विधि पत्ता लगाउन सजिलो हुन्छ ।

⇨ **नियन्त्रण:** नियन्त्रण भनेको सम्पन्न गरिएका कामहरू पूर्वनिर्धारित योजनाअनुसार मूल्यांकन गरी त्यही योजना अनुसार नै बनाउनु हो । यहाँ नियन्त्रण भन्नाले कुनै पनि व्यवसायमा हुने खर्च, घाटा र अदक्षता नियन्त्रण गर्नु भन्ने बुझिन्छ । आधुनिक युग प्रतिस्पर्धाको समय हो । यो युगमा बजारमा त्यस्ता संस्थानहरूमात्र टिकिरहन सक्छन् जसले कम मूल्यमा गुणस्तरीय वस्तु उत्पादन गर्न सक्छन् । व्यवसायिक सफलता हासिल गर्न उत्पादन तथा वितरण लागतलाई कम गर्नु आवश्यक हुन्छ । व्यवस्थापकले लागतमा कमी र दक्षतामा सुधार गरी संस्थालाई प्रतिस्पर्धाको सामना गर्न र नाफा कमाउन सक्षम बनाउँछ ।

२. उत्प्रेरणा (Motivation) र द्वन्द व्यवस्थापन (Conflict Management)

उत्प्रेरणा (Motivation)

☑ **उत्प्रेरणाको अवधारणा सम्बन्धमा चर्चा गर्नुहोस् ।**

⇨ आजको समयमा समग्र रुपमा उत्प्रेरणाको क्षेत्र तथा महत्व व्यापक बन्दै गएको छ । समग्र संगठनात्मक लक्ष्य प्राप्तिको लागि सङ्गठनमा काम गर्ने व्यक्तिहरूका मनमा काम गरौँ गरौँ भन्ने भावना जागृत गराउने कार्य उत्प्रेरणा हो ।

⇨ मानिस विभिन्न खाले आवश्यकता तथा चाहनाहरू पूरा गर्नका लागि कुनै पनि काम गर्न इच्छुक हुन्छ । मानवीय आवश्यकता तथा चाहनाहरू पूर्ति हुने सम्भावनाहरू देखाएर उनीहरूलाई कामप्रति उत्प्रेरणा दिलाउन सकिन्छ ।

⇨ उत्प्रेरणा र कार्यसम्पादनबीच अन्तर सम्बन्ध रहेको पाइन्छ । संगठनमा कार्यरत उत्प्रेरित व्यक्तिले भित्रैदेखि मन लगाएर काम गर्दछ तथा प्रभावकारी रुपले कार्य सम्पादन पनि सम्भव हुन्छ । अङ्ग्रेजीको Motivation शब्दलाई नेपालीमा उत्प्रेरण भनिन्छ ।

⇨ यो ल्याटिन शब्द movere बाट अङ्ग्रेजीको motive हुदै आएको हो । Movere को अर्थ अग्रसर हुनु भन्ने हुन्छ । यसको अर्थबाट उत्प्रेरणा भन्नाले कुनै पनि कामका लागि इच्छा, चाहना तथा जागरण हुनु भन्ने हुन्छ ।

⇨ उत्प्रेरणा व्यक्तिको व्यवहारमा उद्देश्यमूलक परिवर्तन ल्याउने कुरा सँग पनि सम्बन्धित छ । मानौँ कुनै सहरमा डेरा गरी बस्ने विद्यार्थीको लागि घरबाट नियमित पैसा आउँदछ भने उसले जागिर गर्न चाहँदैन तर उसलाई घरबाट पैसा पठाउन छोडेको अवस्थामा पैसाको आवश्यकता पर्ने हुँदा उसलाई जागिर गर्ने इच्छा जाग्दछ । यसरी मानिसको आवश्यकता तथा चाहनाले व्यक्तिको व्यवहारमा समेत परिवर्तन ल्याउँदछ ।

⇨ त्यस्तै कुनै पनि संगठनमा कार्यरत कर्मचारी अविवाहित हुँदा उसको चाहना तथा आवश्यकताहरू थोरै थिए । विवाह गरेपछि आवश्यकताहरू बढे सँगै सामाजिक प्रतिष्ठा देखि आर्थिक तथा अन्य आवश्यकताहरू थपिँदै जाँदा अतिरिक्त आर्थिक उपार्जनको लागि अतिरिक्त काम गर्न पनि तयार हुन्छ । यो पनि व्यक्तिको व्यवहारमा आएको परिवर्तन हो ।

⇨ कुनै पनि संगठित संस्थामा समग्र कार्य सम्पादनको लागि वित्तीय, भौतिक र मानवसंसाधनको आवश्यकता पर्दछ ।

⇨ कार्य सम्पादनमा तीनवटा पक्षहरू आवश्यकता पर्ने भए पनि मानवीय पक्षका भूमिका महत्वपूर्ण हुन्छ ।

⇨ समग्र उत्पादनको महत्वपूर्ण संसाधन कर्मचारी हो उसलाई सन्तुष्ट राख्ने हो भने उनीहरूबाट राम्रो कार्य सम्पादनको अपेक्षा गर्न सकिन्छ । समग्र कार्यसम्पादन सुधार गरी व्यवसायिक मुनाफाका लागि व्यवस्थापकले कर्मचारीलाई कार्यसम्पादनमा उत्प्रेरित गर्ने पक्षहरूको व्यवस्थापन गर्नु पर्ने हुन्छ ।

⇨ उत्प्रेरणा र आवश्यकताको प्रत्यक्ष सम्बन्ध रहेको पाइन्छ । आवश्यकताले उत्प्रेरणाको सिर्जना गर्दछ ।

⇨ मानवीय आवश्यकतालाई वातावरणीय तत्वहरूले समेत प्रभाव पार्दछ । वातावरणीय प्रभाव सबै कर्मचारीलाई समान रुपले