

❖ COMPUTER NETWORK:

Computer Network is a group of computers and associated devices connected to each other in order to provide communication, information sharing and resource sharing.

❖ Groupware: They are the special softwares that allow multiple users to communicate directly to each other with inclusion of audiovisual and other types of data. eg! googlemeet, zoom meet etc

❖ Network Security: Network security is to protect the networked computers and network operations from attackers and hackers.

Network security includes authentications, access control, data integrity, data confidentiality, non-repudiation and availability in all.

❖ Need for securing a Network:

Every network needs security against attackers and hackers both. It includes two basic securities-

- 1) Security of data/information.
- 2) security of computer/machine.

Network security not only means security in a single network rather in any network or network of networks.

On internet or network of an organisation, a huge amount of secret information resides. So network security for information is needed for the following reasons-

- 1) To protect the secret information from unauthorised users.
- 2) To protect it from unwanted editing by unauthorised users.
- 3) To protect it from loss during journey.
- 4) To manage for acknowledgement of messages received by any receivers in order to protect from denial by sender in specific situation, eg! purchase of shares, then rate goes down.
- 5) To restrict impersonation type cases.

X $\xrightarrow{\text{Imp}}$ Y

- 6) To protect from unwanted delay in transmission/route.
- 7) To protect the wandering data packets which may result into network congestion.

⊛ Network Security needs for computers:

It means to protect computer system from unwanted damage caused due to network. So the need arises -

- 1) It should be protected from replicating and capturing viruses.
- 2) It needs a proper protection from worms and bombs.
- 3) There is a need of protection from Trojan horses as they are enough dangerous for your computer.

⊛ Principles of Network Security:

We should understand the importance of a strong security policy. By making a strong security policy, unauthorised access can be better managed. Four basic principles are:

- 1) Confidentiality
- 2) Integrity
- 3) Authentication
- 4) Non-repudiation.

Besides it, two more principles are

- 5) Access control
- 6) Availability