Q (1) Discuss the history of computer Networks?

Ans. A computer network is a group of computers that has the potential to transmit, receive and exchange voice, data and video traffic.

A network connection can be set up with the help of either cable or wireless media. In modern times, computer networks are very important as information technology is increasing rapidly all over the world. The network and data communication are the essential factors to use information technology in the world as technology's advancement is on the system, including the gadgets. ARPANET began the networking long ago.

In 1957, when SPUTNIK satellite was launched by Russia. An agency named ADVANCED RESEARCH PROJECT AGENCY (ARPA) was started by America, and its first satellite was launched within 18 months after establishment. Then they used ARPANET to share the information on another computer.

Then ARPANET came to India in 1969, & its name changed from Indian to NETWORK.

For the limited states department of defense, the funding of the design of the advanced Research Projects Agency Network (ARPANET) was began by ARPA. In 1969, the

network began to develop on the basis of the developed designs in the 1960s

Below use the complete history of computer Networking:

•) **1961** — In this year, leonard kleinrock proposed the earliest computer networks, which was the idea of ARPANET.

•) **1965** :— Donald Davies coined the term "packet" to describe how to send data b/w computers on a network.

•) **1969** :— Although in 1966, the development of ARPANET began, officially started ARPANET in 1969. It was considered one of the first computer networks in which first two nodes, UCLA - 2 - SRI (Stanford Research institute) were connected & to use packet switching.

To provide & define information about network protocols, procedures & computer communications, the first RFC surfaced as a document in April 1969.

On Aug 29, 1969, the first IMP & network switch were sent to UCLA. On ARPANET, the first data transmission was sent by using it.

•) **1970** :— NCP, stands for Netware core Protocol, released by steve Crocker & a team at UCLA for use with Network.

•) **1971** :— The first e-mail was sent to across a network to others by Ray Tomlinson.

•) **1973** :— while working at Xerox PARC, Robert Metcalfe developed the ethernet in 1973. In this year, ARPA deployed the first international network connection known as SATNET. VOIP technology & capabilities were introduced, which made a VOIP call. However, until 1995, software was not available for users that could make VOIP calls.

*) <u>1974</u> :- Use of first router was began but not considered true IP routers.

*) <u>1976</u> :- originally called a gateway, Ginny Strazisur develop the first true IP router.

*) <u>1978</u> :- TCP/IP protocol was invented & developed by Bob Kahn with the help from Vint Cery.

*) <u>1981</u> :- In US, b/w IBM mainframe systems, BITNET was created in 1981 as a network. The US National Science foundation developed the CSNET (computer Service Network).

*) <u>1983</u> :- The first DNS implement by Jon Postel & Paul Mockapetris in 1983.

*) <u>1986</u> :- This is the year in which a backbone for ARPANET, the National Science foundation Network was came online, which finally took the place of ARPANET in 1990s. In the same year, with the original BITNET, BITNET II was introduced to deal with bandwidth issues.

*) <u>1988</u> :- The first IT backbone was included with ARPANET AT&T, Lucent and NCR introduced the waveLAN network technology in 1988.

*) <u>1990</u> :- The first network switch was developed & introduced by US Network hardware company.

*) <u>1996</u> :- IPv6 was introduced as an improvement over IPv4

*) <u>1997</u> :- 802.11 standards, containing transmission speeds up to 25 Mbps for wifi were introduced.

*) <u>1999</u> :- 802.11 a standards, contained transmission speed upto 25 Mbps to use the 5GHz bands was made.

*) <u>2003</u> :- 802.11g devices of transmission speed upto 20 mbps were available to public., and WPA encryption protocol is released.