

Date

⇒ Protocols & Key Elements of Protocol

⇒ Protocol:- A protocol is a set of rules that define how data is transmitted and communicated across a network. These rules ensure that different devices can communicate effectively.

eg:- HTTP/HTTPS, TCP, IP, FTP etc

⇒ Key elements of protocol.

- (i) Message Encoding:- converts data into transmittable format and decodes it at the receiver end.
- (ii) Message Formatting & Encapsulation:- structures data into packets with headers for network transmission.
- (iii) Message Size:- defines maximum data size for efficient transmission.
- (iv) Message Timing:- regulates the flow, speed, and timing of data transmission.
- (v) Message Delivery:- methods include unicast, multicast, and broadcast.
- (vi) Error Detection & Recovery:- ensures data accuracy and corrects transmission errors.
- (vii) Addressing:- uses IP and MAC addresses to identify senders and receivers.
- (viii) Reliability:- ensures accurate, in-order delivery with acknowledgment and retransmission.