ERROR CORRECTION METHODS

THREE METHODS :

1. **SYMBOL SUBSTITUTION**
2. **RETRANSMISSION**
3. **FORWARD ERROR CORRECTION**

SYMBOL SUBSTITUTION:

WAS DESIGNED TO BE USED FOR HUMAN ENVIORNMENT I.E WHEN ANY HUMAN BEING AT THE RECEIVING END ANALYSES THE DATA AND HAS TO MAKE DECISIONS ON ITS INTEGRITY.

- RETRANSMISSION:

IT MEANS TO RESEND THE DATA WHEN ERRORS ARE DETECTED.

IT IS OFTENLY CALLED AS ARQ [AUTOMATIC REQUEST FOR RETRANSMISSION]. IT IS MOSTRELIABLE METHOD OF ERROR CORRECTION.

- FORWARD ERROR CORRECTION :

IT THE ONLY ERROR CORRECTION METHOD WHICH ACTUALLY DETECTS AND CORRECTS TRANSMISSION ERRORS AT THE RECEIVE END WITHOUT CALLING RETRANSMISSION.

- SYNCHRONIZATION :

IT MEANS TO AGREE OR COINCIDE IN TIME.

THERE ARE FOUR TYPES :

1. CHARACTER SYNCHRONIZATION
2. MODEM OR CARRIER SYNCHRONIZATION
3. CHARACTER SYNCHRONIZATION
4. MESSAGE SYNCHRONIZATION

- CHARACTER SYNCHRONIZATION :

CLOCK SYN. ASSURES THAT BOTH TRANSMITTER AND RECEIVER AGREE ON PRECISE TIME SLOT.WHEN A CONTINUOUS STRING OF DATA IS RECEIVED IT IS NECESSARY TO IDENTIFY WHICH BIT BELONGS TO WHICH CHARACTER, STOP BIT , PARITY BIT, LSB ETC.

IN SHORT THIS TYPE OF SYN IDENTIFIED START AND END OF CHARACTER CODE.

ASYNCHRONOUS DATA EACH CHARACTER IS FRAMED BETWEEN START AND STOP BIT.

A LOGIC 0 IS USED AS START BIT

A LOGIC 1 IS USED AS STOP BIT

AFTER THE START BIT IS DECIDED THE DATA AND PARITY BIT ARE CLOCKED INTO RECEIVER.

1 1 1/0 B6 B5 B4 B3 B2 B1 B0(LSB) 0