

**GROUP C**

**(Long Answer Type Questions)**

*Answer any Three questions.*

- 1) Explain the significance and working of Checksum code in error detection. 8\*3=24

A sender needs to send four data items 0x3456, 0xabcc, 0x02bc and 0xeeee. Answer the following:-

- a. Find the Checksum at the sender site.
- b. Find the Checksum at the receiver site if there is no error.
- c. Find the Checksum at the receiver site if the second data item is changed to 0xabce.
- d. Find the Checksum at the receiver site if the second data item is changed to 0xabce and third data item is changed to 0x02ba.

- 2) "FM and PM are basically same"- Comment and justify this statement.

A standard AM transmission sinusoidally modulated to a depth of 30% produces side frequencies of 4.928 MHz and 4.914 MHz. The amplitude of each side frequency is 75 V. Determine the amplitude and frequency of carrier.

- 3) Explain different modes of Data transmission. Distinguish between Synchronous and Asynchronous communication.

Consider binary sequence – 11001010100011

Draw the signal waveform for following schemes-

Bipolar RZ, Unipolar NRZ, Manchester signaling

- 4) Explain Binary PSK and Binary FSK modulation and demodulation with the help of block diagrams. With an available bandwidth of 100KHz which spans from 200 to 300KHz, What are the carrier frequency and bit rate if data is modulated by ASK with  $d=1$ .