Model Question Paper

Communication systems - Part I

12th Standard

Physics

Reg.No. : | | | | | | |

I.Answer all questions.

II.Use Blue pen only.

Time : 01:00:00 Hrs

Total Marks : 80

Section-A

5 x 1 = 5

1) High frequency waves follow

(a) the ground wave propagation (b) the line of sight direction (c) ionospheric propagation (d) the curvature of the earth

2) The main purpose of modulation is to

(a) combine two waves of different frequencies (b) acquire wave shaping of the carrier wave (c) transmit low frequency information over long distances efficiently (d) produce side bands

3) In amplitude modulation

(a) the amplitude of the carrier wave varies in accordance with the amplitude of the modulating signal (b) the amplitude of the carrier wave remains constant (c) the amplitude of the carrier wave varies in accordance with the frequency of the modulating signal (d) modulating frequency lies in the audio range

4) In amplitude modulation, the band width is

(a) equal to the signal frequency (b) twice the signal frequency (c) thrice the signal frequency (d) four times the signal frequency

5) In phase modulation

(a) only the phase of the carrier wave varies (b) only the frequency of the carrier wave varies (c) both the phase and the frequency of the carrier wave varies (d) there is no change in the frequency and phase of the carrier wave

Section-B

3 x 3 = 9

6) What are the different types of ratio wave propagation?

7) Explain the ground wave propagation.

8) What is meant by skip distance?

Section-C

3 x 5 = 15

9) A 10 MHz sinusoidal carrier wave of amplitude 10mV is modulated by a 5kHz sinusoidal audio signal wave of amplitude 6mV.find the frequency components of the resultant modulated wave and their amplitude.

10) In a broadcasting studio,a 1000kHz carrier is modulated by an audio signal of frequency range,100-5000Hz. Find (i) maximum and minimum frequencies of USB (ii) maximum and minimum frequencies of LSB and (iii) width of the channel.

11) A 10 MHz sinusoidal carrier wave of amplitude 10 mV is modulated by a 5 kHz sinusoidal audio signal wave of amplitude 6 mV. Find the frequency components of the resultant modulated wave and their amplitude .

Section-D

4 x 10 = 40

12) Explain the functions of various units in the monochrome television transmission with suitable block diagram.

13) With the help of the block diagram, explain the functions of various units in the monochrome TV receiver.

14) Explain the function of a vidicon camera tube.

15) Explain the functioning of Amplitude modulated transmitter.

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