

B.E. (Electronics Engineering / Electronics Telecommunication /
Electronics Communication Engineering) Fifth Semester (C.B.S.)
Communication Electronics

P. Pages : 2
Time : Three Hours



TKN/KS/16/7414/7419

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data wherever necessary.
 10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain Ring modulator & its spectrum. 8
- b) A bandwidth of 20 MHz is to be considered for the transmission of AM signals. If the highest audio frequencies used to modulate the carriers are not exceed 3 KHz how many stations could broadcast within this band simultaneously without interfering with one another? 6

OR

2. a) An SSB transmission contains 10kw. This transmission is to be replaced by a standard amplitude-modulated signal with the same power content. Determine the power content of the carrier & each of the sidebands when the percent modulation is 80%. 6
- b) Explain the third method of SSB generation. 8
3. a) Determine the frequency deviation & carrier swing for a freq-modulated signal which has a resting freq. of 105.000 MHz & whose upper freq. is 105.007 MHz when modulated by a particular wave. Find the lowest frequency reached by the FM wave. 6
- b) Explain indirect method of FM generation. 7

OR

4. a) Compare narrow band FM and wideband FM. 7
- b) Determine the percent modulation of FM signal which is being broad cast in the 88-108 MHz band, having a carrier swing of 125 KHz. 6
5. a) Explain any three types of sampling. 7
- b) Explain in detail PPM generation, demodulation, advantages & disadvantages.

OR

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6. a) Explain Adaptive delta modulation system in detail.

b) Draw and explain DPCM system.

7. a) Derive the expression for noise figure for two stage Amplifier.

b) Explain short noise in detail.

OR

8. a) Derive an expression for the r.m.s. voltage due to thermal noise.

b) A receiver connected to an antenna whose resistance is 50Ω has an equivalent noise resistance of 30Ω calculate the Receiver's noise figure in decibels and its equivalent noise temperature.

9. a) Explain superheterodyne Radio receiver with block diagram.

b) Describe foster Seeley FM detector.

OR

10. a) Explain the major factors influencing the choice of the intermediate frequency of any receiving system.

b) Comment on sensitivity, selectivity and fidelity of a Radio receiver.

11. a) Explain Frequency Division multiplexing.

b) Describe tropospheric scatter links.

OR

12. Write short notes on following.

a) Microwave Links.

b) Submarine cables.

c) Coaxial cables.
