

B.E DEGREE EXAMINATIONS APRIL/MAY 2012
DEPARTMENT OF ELECTRICAL AND ELECTRONICS
FOURTH SEMESTER FULL TIME (R 2008)
EC9261 COMMUNICATION ENGINEERING

TIME:3hrs

INSTRUCTIONS:ANSWER ALL QUESTIONS

MAX MARKS:100

PART A

(10X2=20MARKS)

1. A carrier signal of frequency 550 KHz with peak value of 5V is amplitude modulated with 5KHz signal whose Peak value is 3V. Draw power spectrum of AM assuming antenna resistance of 50Ω
2. Compare AM and FM with respect to broadcast band.
3. Draw the block diagram of DPCM transmitter and receiver.
4. How slope overload error can be reduced in DM.
5. Briefly explain BEC
6. Mention any two properties of Entrophy
7. Derive the relationship between the Carrier frequency f_c and bitrate R_b in SSM broad band communication .
8. What is LPI in spread spectrum Communication.
9. Define the Elevation angle and azimuth angle
10. Draw the block diagram of optical Communication system.

Part B

(5X16=80MARKS)

- 11.(i) Explain with block diagram FM communication Transmitter (12)
- (ii) What should be the minimum bandwidth of channel required to transmit a music signal using DSB –SC , SSB –SC and FM (4)
- 12a (i). Draw the block diagram of PCM transmitter and receiver . Explain PCM receiver

OR

- (i) Draw the block diagram of QPSK transmitter and receiver and Explain (10)
- (ii) State and prove sampling theorem (6)
- 13a.(i) Determine all codewords of the code (6,3) and Demonstrate the detection and correction of bit errors for the input message 110 (8)
- (ii) Employ shannon fanno coding on the source given, determine the coding efficiency (8)

M_0	M_1	M_2	M_3	M_4	M_5	M_6
0.4	0.2	.08	.12	.08	.04	.08

OR

- b.(i) Construct a convolution encoder for $(2,1,3)$ code. Determine the output sequence when the input is 110001. Generator sequences $g_1^1 = 1010$, $g_1^2 = 1110$ (8)
- (ii) Mention the features of Manchester Line coding with an example (4)
- (iii) Briefly explain stop and wait ARQ system (4)

- 14a.(i) Distinguish clearly between FDMA/ FDD, TDMA/ FDD , TDMA/ TDD and FDMA/ TDD Also write the features of TDMA and FDMA (12)
- (ii) Describe CDMA with block diagram (4)

OR

- b. Explain DS –SSM for base band Communication and broad band Communication

- 15a.. Explain the following
- Different dispersions present in optical communication (6)
 - Optical detectors (4)
 - Critical angle and NA (4)
 - Any two advantages of optical cables over copper cables. (2)

OR

- b.Explain Stellite Communication system with uplink,transponder,downiink modei. Also uplink and down link budget equations