NAME_____ ROLL NO_____

2008 ANNA UNIVERSITY

B.E/B.TECH DEGREE EXAMINATION

ANALOG AND DIGITAL COMMUNICATION

(COMPUTER SCIENCE& ENGINEERING)

NOV-2008

TIME-3HOUR
MARKS-100

ANSWER ALL QUESTIONS

PART - A [10X2=20]

1. Draw The Amplitude Modulation Wave Forms With Modulation Index (M) =1, M<1, M>1.

2. For A Citizens Band Receiver Using High-Side Injection With An RF Carrier Of Mhz And IF Center Frequency Of 465 Khz, Determine Local Oscillator Frequency And Image Frequency.

3. Draw The Phasor Diagram Of Narrow Band FM.

4.Name Different Types Of FM Detectors.

5. Draw The Spectrum Of Sample And Hold Circuit With Aliasing And Without Aliasing.

6. For A 12-Bit Data String Of 101100010010, Determine The Number Of Hamming Bits Required.

7. What Is Frequency-Shift Keying (FSK)?

8. Draw 8-QAM modulator phasor diagram.

9. Define and express PN sequence using bipolar sequence.

10.give an example of FH pattern.

PART - B [5X16=80]

11.(A) (i) suppose that the modulating signal m(t) is a sinusoid of the form m(t)=a cos2pfmt fm<

(ii) Explain about coherent detection of AM with carrier.

Or

(b)(i) draw the block diagram of AM superhetrodyne receiver and explain function of each block.

(ii) why local oscillator frequency in AM receiver chosen above the incoming signal frequency?

12.(a)(i)draw the generation of FM wave using Armstrong method.

(ii) define FM and PM modulation. Write their equations.

Or

(b) With the help of a block diagram and theory explain FM demodulation employing PLL.

13.(a)(i) Explain delta modulation with the help of transmitter and receiver diagrams.

(ii) What is Quantizing error? Illustrate with an example.

Or

(b) (i) Explain ISI for NRZ input signal.

(ii) Discuss synchronous modem in brief.

14.(a)(i) derive an expression for baud rate in PSK and FSK systems.

(ii) Explain the generation and detection of QPSK signals.(8 marks)

Or

(b)(ii) Determine the baud rate and minimum bandwidth necessary to pass a 10 Kbps binary signal using amplitude shift keying.

(ii) Explain quadrature amplitude modulation with the help of relevant diagrams.

15.(a)(i) Give the advantages associated with spreading a signal spectrum.

(ii) Describe the structure of feedback shift register for generating PN sequences.

(b)(i) Explain FH-CDMA acquisition and tracking with neat sketches.

(ii) Compare TDMA,FDMA and CDMA multiple access techniques.