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B.E./B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, APR/MAY2012

INFORMATION TECHNOLOGY BRANCH

THIRD SEMESTER

EC 295 – PRINCIPLES OF COMMUNICATION

(REGULATIONS 2004)

Duration: 3 Hours **Max.marks:100**

Answer ALL questions

PART-A (10x2=20 Marks)

1. With is meant by heterodyning?
2. What are the characteristic features of spectrum of AM wave?
3. If the maximum value of frequency deviation is fixed at 75 KHz for commercial FM broadcasting by radio and the modulation frequency of 15 KHz is typically the maximum audio frequency of interest in FM transmission calculate the deviation ratio and the transmission bandwidth.
4. Define the modulation index of FM.
5. Write merits of M-ary modulation scheme.
6. Draw the block diagram for binary PSK transmitter.
7. State sampling theorem.
8. What is the basic principle of PAM?
9. Draw the representation of the spectrum of telephone system base band voice signal.
10. List out the attractive features of CDMA.

PART-B (5X16=80 Marks)

11.(i)With mathematical substantiation explain the principle of envelope detector . **(8)**
(ii)Draw the block diagram of AM transmitter and explain. **(8)**

12.(a) Explain briefly the basic methods of generating frequency-modulated waves. **(16)**

OR

12.(b) (i)List out the advantages and disadvantages of FM over AM. **(8)**
(ii)Discuss briefly on PLL-FM demodulator. **(8)**