



VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE
[Central Technological Institute, Maharashtra State]
Matunga, Mumbai-400019

SEMESTER EXAMINATION May 2012
SEMESTER & COURSE: IV S Y B Tech (E&TC)
TIME ALLOWED: 3HRS.
SUBJECT: PRINCIPLE OF COMMUNICATION

DATE OF EXAM: 11.05.12
TIME: 1:30 TO 4:30
MARKS: 100

N.B.: 1. Solve any five questions
2. Assume additional data, if necessary.

1. a) Explain the Plate modulator with class C amplifier and draw the necessary waveforms 10
b) Compare AM Receivers with FM receivers 10
2. a) What is aliasing? How they are eliminated 5
b) Explain different type of Sampling techniques. 5
c) Explain the elements of the communication, Noise figure, Noise factor, noise temperature in details. 10
3. a) Explain the concept of TDM and FDM. 8
b) Explain the balanced modulation method for generation of SSB. 8
c) In Phase shift SSB system, the phase shift at the audio frequency of 500 Hz is only 88%. To what extent will this frequency be present in the unwanted Lower Sideband? 4
4. a) In an FM system, when the audio frequency is 500Hz and the modulating signal voltage is 2.4V, the deviation is 4.8kHz. If the AF voltage is raised to 10V while the AF is drooped to 200Hz, what is the new deviation in frequency? Find the modulation index in each case. 10
b) Explain the Super heterodyne receiver in detail 10
5. a) State PAM, PPM, and PWM and explain PCM in detail with necessary waveforms. 10
b) Explain in details the radio wave propagation. 10
6. a) Explain the envelope detection for AM in details. 10
b) Consider an extremely noisy channel in which the value of the signal-to-noise ratio is almost zero. For this calculate the channel the capacity (C). 4
c) Draw the RZ, NRZ, Manchester scheme for the sequence: 010011 6