



VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE
[Central Technological Institute, Maharashtra State]
Matunga, Mumbai-400 019

SEMESTER EXAMINATION	May 2009	DATE OF EXAM	18 th May 2009
SEMESTER & COURSE	IV S Y B Tech Eletrx	TIME	2.30 p.m. To 5.30 p.m.
TIME ALLOWED	3 HRS.	MARKS	100
SUBJECT :	BASICS OF COMMUNICATION ENGINEERING		

- N.B: 1. Solve any Five Questions
2. Assume additional data, if necessary

Q.1 a. Explain the plate modulated class C amplifier and draw the necessary waveforms. 10

b. In an FM system, when the audio frequency is 500 Hz and the modulating signal Voltage is 2.4V, the deviation is 4.8 kHz. If the AF voltage is now increased to 7.2 V, what will be the new deviation in frequency? If the AF voltage is raised to 10V while the AF is dropped to 200Hz, what is the new deviation in frequency? Find the modulation index in each case. 10

Q.2 a. Explain the generation of FM by reactance modulator method and compare it with Indirect method of generating FM 08

b. Explain the balanced modulation method for generation of SSB. 08

c. In a 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? 04

Q3 a. Explain the space wave propagation in detail and compare with extraterrestrial; tropospheric mode of propagation. 10

b. Explain the superhetrodyne receiver in detail. 10

Q 4 a. State PAM, PPM, and PWM and explain PCM in detail with necessary waveforms.10

b. describe demodulation of FM wave using balanced slope detector method. 10

Q 5 a. Define sensitivity; selectivity, AGC, multipath propagation, MUF. Also suggest the way how improving the range of communication. 08

b. State the Sampling and explain the concept of TDM and FDM. 08

c. Explain double spotting and image frequency and rejection. 04

Q 6 a. A certain transmitter radiates 9 kW with the carrier unmodulated, and 10.125 kW when the carrier is sinusoidally modulated. Calculate the modulation index and the percentage of modulation. If another carrier modulated to the depth of 40 percent modulation is transmitted simultaneously, determine the total radiated power. 10