

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC SEM-IV Examination-Nov-2011

Subject code: X41101

Date: 21/11/2011

Subject Name: Electronic Communication

Time: 2.30 pm -5.00 pm

Total marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Explain (i) Skin effect and (ii) Mutual inductance (iii) Trapped inductor **07**

(b) State and prove properties of Fourier Transform **07**
1) Symmetry Property
2) Scaling Property
3) Frequency Shifting Property

Q.2 (a) Explain double conversion receiver, tracking in receiver and double spotting. **07**

(b) Explain series tuned circuit and parallel tuned circuit with details. **07**

OR

(b) Explain Automatic gain control in details. **07**

Q.3 (a) Explain FM broadcasting system in details. **07**

(b) Draw a block diagram of high quality Super heterodyne communication receiver with principle and describe function of each block. **07**

OR

Q.3 (a) What is Noise? Explain i) Thermal Noise, ii) Shot Noise, iii) Partition Noise, iv) Flicker Noise, v) Burst Noise. **07**

(b) List out the advantages and disadvantages of SSB modulation over amplitude modulation. **07**

Q.4 (a) Explain adjacent channel selectivity and double Conversion. **07**

(b) Define noise factor and derive Friis's formula **07**

OR

Q.4 (a) Write short note on Amplitude modulator circuits. **07**

(b) Explain i) signal energy and energy spectral density and ii) signal power and power spectral density **07**

Q.5 (a) Write short note on: Electronically Tuned radio receiver. **07**

(b) Explain double-sideband amplitude modulation and bandwidth-efficient Amplitude Modulation. **07**

OR

Q.5 (a) Explain Phase locked loop with application. **07**

(b) Explain generating FM waves and demodulation of FM signals with details. **07**
