

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 160802**Date: 26/10/2016****Subject Name: Electronic Communication****Time: 02:30 AM to 05:00 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) Define analog and digital messages. What is the difference between them? Write a short note on Electromagnetic Spectrum and its applications. **07**
- (b) Describe in detail: “Friiss Formula”. **07**
- Q.2** (a) Draw the circuit diagram of high frequency transformer and derive the equation for transfer impedance. **07**
- (b) Draw and explain series tuned (RLC) circuit with phasor diagram and explain why it is called selector circuit? **07**
- OR**
- (b) Draw and explain parallel tuned (RLC) circuit with phasor diagram and explain why it is called rejector circuit? **07**
- Q.3** (a) Write a short note on tracking. **07**
- (b) Define signal and show some standard test signals graphically and express them mathematically. **07**
- OR**
- Q.3** (a) Write a short note on communication receiver. **07**
- (b) Obtain the Fourier Transform of a DC signal having amplitude of unity. **07**
- Q.4** (a) Draw the AM waveforms for more than 100%, less than 100%, with 100% and 0% modulation. Assume that the modulating signal is a pure sine wave. Give comment on how to achieve this? **07**
- (b) Define Frequency Modulation and derive mathematical expression for F.M. **07**
- OR**
- Q.4** (a) Compare DSBFC, DSBSC, SSB and VSB technique. **07**
- (b) Explain Superheterodyne FM Receiver in detail. **07**
- Q.5** (a) Write a short note on Pre-emphasis and De-emphasis. **07**
- (b) List the properties of Fourier Transform and explain any three with proof. **07**
- OR**
- Q.5** (a) Define Amplitude Modulation and derive mathematical expression for A.M. **07**
- (b) State and explain Kepler’s laws in relation to artificial satellites orbiting the earth. Differentiate between geosynchronous and geostationary satellite orbits. **07**
