

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION – WINTER • 2014

Subject Code: 141102

Date: 02-01-2015

Subject Name: Communication Engineering

Time: 02:30 pm - 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) What is Modulation and Demodulation? Explain need of Modulation **07**
(b) Compare AM, FM and PM **07**
- Q.2** (a) Draw and Explain Block Diagram of color TV Receiver **07**
(b) What are the advantages of digital communication over analog communication. **07**
Draw and explain the block diagram of PCM system.
- OR**
- (b) Explain how digital communication can reduce the noise. **07**
State and prove the sampling theorem.
- Q.3** (a) Explain various internal sources of noise with necessary formulas **07**
(b) Explain advantages, disadvantages and applications of Fiber optic communication. **07**
- OR**
- Q.3** (a) Define : [i] Noise Figure [ii] Modulation index [iii] Snail's Law **07**
[iv] Dispersion [v] IF [vi] Pick Detector [vii] SNR
(b) Explain briefly: PCM , FDM , TDM **07**
- Q.4** (a) Describe various TV standards **07**
(b) Explain pre-emphasis and de-emphasis techniques used in FM communication system with justification. **07**
- OR**
- Q.4** (a) Explain luminance (Y) signal, color difference signal and weighted color Difference signals I and Q. Why color difference signals R-Y and B-Y are not Transmitted from Transmitter? **07**
(b) Describe basic structure of fiber optic cable. Compare single mode and multi mode fibers. **07**
- Q.5** (a) Draw and Explain block diagram of superhetrodyne receiver. **07**
(b) Explain satellite communication systems in detail **07**
- OR**
- Q.5** (a) Explain VSB Modulation in detail. **07**
(b) Explain basic concept of telegraphy in detail. **07**
