

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. E. Semester-IV- Examination June- 2011****Subject code: 141102****Subject Name: Communication Engineering****Date: 13/06/2011****Time : 10:30 am to 1:00 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) Describe in detail Basics of Communication System with help of block diagram **07**
- (b) Explain various types of Internal and External Noise and its effect on communication systems **07**
- Q.2** (a) List various types of Modulation systems and explain in detail Amplitude modulation with necessary mathematical formulas and modulation index concept **07**
- (b) Define: [1] Signal to Noise ratio [2] Noise Bandwidth [3] Noise figure [4] Noise Temperature [5] Selectivity of a Receiver [6] PCM [7] Snell's Law **07**
- OR**
- (b) Describe various types of losses in Fibers with its effect **07**
- Q.3** (a) Explain the principle of operation of Superheterodyne Receiver with block diagram **07**
- (b) Give comparison of pre-emphasis and de-emphasis **07**
- OR**
- Q.3** (a) Give comparison of AM, FM and PM **07**
- (b) Draw the block diagram of FM Receiver and explain each block in short **07**
- Q.4** (a) Explain the quantization process used in PCM with figure **07**
- (b) Describe advantages, disadvantages and applications of PCM **07**
- OR**
- Q.4** (a) Define: [1] Simplex systems [2] Half duplex systems **07**
- [3] Full duplex systems [4] Grassman's Law
- Q.4** (b) Draw block diagram of Black and white TV transmitter and receiver and mention name of each block clearly **07**
- Q.5** (a) Explain satellite communication systems in detail **07**
- (b) List various data communication codes and explain any one **07**
- OR**
- Q.5** (a) Describe electromagnetic spectrum **07**
- (b) Explain advantages, disadvantages and applications of Fiber optic communication. **07**

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