

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– IV (Old) EXAMINATION – WINTER 2019****Subject Code: 141102****Date: 16/12/2019****Subject Name: Communication Engineering****Time: 10:30 AM TO 01:00 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) Compare AM, FM and PM **07**
(b) Explain how digital communication can reduce the noise. State and prove the sampling theorem. **07**
- Q.2** (a) Explain need of modulation. Derive equation for amplitude modulation and draw amplitude spectrum for $m=1$. **07**
(b) Explain Armstrong method of FM generation. **07**
- OR**
- (b) What is SSB-SC modulation? Explain filter method of side band suppression. **07**
- Q.3** (a) Write short note on Superhetrodyne receiver. **07**
(b) Explain the FDM System for telephone communication with the help of block diagram **07**
- OR**
- Q.3** (a) Explain the quantization process used in PCM with figure **07**
(b) Explain the principal of fiber optic data transmission and discuss advantages. **07**
- Q.4** (a) Derive the friss formula for overall noise factor of amplifiers in Cascade. **07**
(b) Explain Terrestrial Microwave Links with example. **07**
- OR**
- Q.4** (a) Explain Station keeping for satellite. **07**
(b) Draw and explain composite video signal. Explain each component. **07**
- Q.5** (a) Draw and explain a circuit diagram of IF section of TV receiver and explain it briefly. **07**
(b) Explain Terrestrial Microwave Links with example. **07**
- OR**
- Q.5** (a) Explain the need, advantages and disadvantages of coding. **07**
(b) List color television standards. Discuss PAL-B standard **07**
