

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020****Subject Code:3152412****Date:01/02/2021****Subject Name:Industrial Communication Systems****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define Followings: **03**
(1) Modulation Index (2) Baud rate (3) Noise
- (b) Define Modulation. Draw the amplitude modulated waveforms for less than 100%, with 100% modulation. **03**
- (c) Enlist Modulation Index measurement techniques. Explain any one in brief. **04**
- (d) Explain the Power relation of the AM wave with necessary mathematical analysis. **04**
- Q.2** (a) Explain in brief PWM. **03**
- (b) Write a note on:- Communication modes. **04**
- (c) Compare AM, FM, PM in all aspects. **07**
- Q.3** (a) Explain in brief source of electrical noise. **03**
- (b) Explain the UART receiver with the help of block diagram. **04**
- (c) Draw& explain block diagram of Fiber Optics Communication system. Also list down the benefits of FOC. **07**
- Q.4** (a) Define Noise figure & Noise temperature. **03**
- (b) Differentiate Synchronous & Asynchronous system. **04**
- (c) Write a detailed note on Suppression techniques. **07**
- Q.5** (a) Explain in brief USB. **03**
- (b) What is the Protocol? Explain MODBUS Protocol. **04**
- (c) Explain in detail HART Protocol. **07**
- Q.6** (a) Explain in brief TCP/IP. **03**
- (b) Write a technical note on :- GPIB **04**
- (c) List the benefits of FIELDBUS, DEVICE NET system. Describe three network classes of FIELDBUS, DEVICE NET system. **07**
- Q.7** (a) Explain in brief PAM. **03**
- (b) Write a note on:- CDPD. **04**
- (c) Explain the RS-485 interface standard in detail and draw the typical two-wire multidrop network. **07**
- Q.8** (a) Explain in brief PPM. **03**
- (b) Write a note on:-Network Topologies. **04**
- (c) Explain RS-232 interface standards. **07**
