

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIIth SEMESTER-EXAMINATION – MAY/JUNE- 2012

Subject code: 171703

Date: 09/06/2012

Subject Name: Industrial data communication

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) Explain the industrial data communication with graphical representation. **07**
(b) (1) Explain Magnetic Coupling of Noise **04**
(2) Discuss the requirement of Earthing and Grounding **03**
- Q.2** (a) Draw the DB-9 connector and explain each pin briefly. **07**
(b) Discuss the trouble shooting of EIA- 485 **07**
- OR**
- (b) Explain with diagram serial interface converter **07**
- Q.3** (a) Discuss the troubleshooting of Fiber optic **07**
(b) (1) Explain Modbus protocol structure **04**
(2) Discuss the troubleshooting of Hart protocol **03**
- OR**
- Q.3** (a) Explain the Profibus protocol stack **07**
(b) Discuss the OSI layers used in Foundation field bus **07**
- Q.4** (a) Explain the Industrial Ethernet **07**
(b) Discuss the troubleshooting of Ethernet **07**
- OR**
- Q.4** (a) (1) Explain ARP (Address resolution protocol) **04**
(2) Explain briefly Hart protocol **03**
(b) Discuss the troubleshooting of TCP/IP **07**
- Q.5** (a) Explain the Radio Modems **07**
(b) (1) Explain the Read holding register (function code 03) of Modbus **04**
(2) Explain the Null Modem connections **03**
- OR**
- Q.5** (a) Explain the Half duplex operation of the EIA-232 interface **07**
(b) Explain the Device net **07**
