

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 171703

Date: 04/05/2017

Subject Name: Industrial Data Communication

Time: 02:30 PM to 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 Open Systems Interconnection (OSI) model for data communication. **07**
(b) Why Earthing and grounding requirements for proper data communication? **07**
Explain in brief.
- Q.2** (a) Explain the EIA-232 interface standard for data communication. **07**
(b) Explain the Electrostatic (Capacitive Coupling) and Magnetic (Inductive Coupling). **07**
- OR**
- (b) Explain the EIA-485 interface standard for data communication. **07**
- Q.3** (a) Explain the fiber optic cable components. **07**
(b) Explain the MODBUS protocol with protocol structure. **07**
- OR**
- Q.3** (a) Explain the various types of optical fiber in brief. **07**
(b) Explain the HART protocol. **07**
- Q.4** (a) Explain the Actuator Sensor Interface (AS-i) for industrial network. **07**
(b) Explain the Device-Net topology with suitable diagram. **07**
- OR**
- Q.4** (a) Explain the ProfiBus Protocol Stack. **07**
(b) Explain Fieldbus Message Specification. **07**
- Q.5** (a) What is TCP/IP? Explain in brief. **07**
(b) Explain the Industrial Ethernet with suitable diagram. **07**
- OR**
- Q.5** (a) State the fundamental elements of a radio link and explain each element in brief. **07**
(b) Explain the physical layer and wiring rules for Foundation Fieldbus. **07**
