

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VII(OLD) • EXAMINATION – WINTER 2016**

**Subject Code: 171703****Date: 23/11/2016****Subject Name: Industrial Data Communication****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) List out the common causes of industrial communication problems and write step wise procedure to troubleshoot the communication system. **07**  
(b) Brief explanation of basic Cable types of Fiber optic. **07**
- Q.2** (a) Explain with diagram- Connections between DTE & DCE using DB-25. **07**  
(b) Draw and explain the architecture of the Profibus protocol stack. **07**  
(b) Describe the Layers used in HART Protocol in details **07**
- Q.3** (a) Explain Application layer and user layer of the Foundation Field bus. **07**  
(b) Explain impedance coupling & electrostatic coupling of the noise. **07**
- Q.3** (a) Explain impedance coupling & electrostatic coupling of the noise./ **07**  
(b) What is AS interface? Explain its physical layer. **07**
- Q.4** (a) Describe current loop hardware and serial interface converter. **10**  
(b) Explain Field bus message specifications (FMS). **04**
- Q.4** (a) Give Modbus protocol structure. what is function code? Explain any one function code with detail description. **07**  
(b) Write a short note on OSI Model. **07**
- Q.5** (a) What is Routing in Internet Protocol. Describe in short different techniques of routing datagrams. **07**  
(b) Explain the TCP header format and the UDP header format. **07**
- Q.5** (a) Describe token passing & polling system for MAC in profibus. **07**  
(b) What are features and advantages of Foundation Fieldbus? Draw OSI model of Foundation Fieldbus Protocol stack **07**

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