

GUJARAT TECHNOLOGICAL UNIVERSITY**Subject code: 171703****Subject Name: Industrial Data Communication****Date: 24/11/2011****Time: 10:30 am – 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) Describe EIA-485 standard and its two wire configuration. **07**
(b) Justify following statement: **07**
“HART is a hybrid analog and digital protocol.”
Explain physical layer and data link layer of HART protocol.
- Q.2** (a) List various benefits offered by Foundation Field bus. Explain physical layer and encoding technique of Foundation Field bus. **07**
(b) Explain impedance coupling and electrostatic coupling of noise. **07**
OR
(b) Explain electrical signal characteristics of EIA-232 standard. **07**
- Q.3** (a) Explain fiber optic cable parameters, in brief. **07**
(b) Has physical interface been defined in modbus protocol? Explain modbus protocol structure. **07**
OR
- Q.3** (a) What is meant by request message and response in modbus. Explain modbus function code 01 and 03. **07**
(b) Explain data link layer of AS-i protocol. **07**
- Q.4** (a) Give OSI model equivalent of Devicenet protocol. Explain Devicenet medium access technique. **07**
(b) Explain Field bus message specifications (FMS). **07**
OR
- Q.4** (a) Explain application layer and user layer of Foundation Field bus. **07**
(b) Explain 10Base2, 10BaseT and 10BaseFL Ethernet. **07**
- Q.5** (a) Explain Ethernet medium access control and its MAC frame format. **07**
(b) Explain switching technology used in Ethernet network. **07**
OR
- Q.5** (a) Draw and explain IPV-4 header. **07**
(b) Enumerate various steps in implementing a radio link and explain the first step. **07**
