GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGG   SEMESTER – VI • EXAMINATION – SUMMER- 2017

Subject Code: 3361704   **Date:09-05-2017**
Subject Name: INSTRUMENTATION 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.**
4. **Draw neat sketch wherever required.**

Q.1		Answer any seven out of ten.	**14**
	1.	List out different network topologies used for networking.	
	2.	Define protocol.	
	3.	Draw format for IP V4 protocol.	
	4.	Draw format for IP V 6 protocol.	
	5.	List out different layers of OSI network model.	
	6.	Draw waveform showing N+ and N- encoding state for ProfiBus protocol.	
	7.	What the function of VPN?	
	8.	List out different internet addressing scheme.	
	9.	State the use of HART handheld communicator.	
	10.	Draw RJ-45 connector.	
Q.2	(a)	List out different network connecting devices used for networking and explain any one.	**03**
		OR	
	(a)	Draw OSI reference model and label it.	**03**
	(b)	Explain BUS topology with suitable example.	**03**
		OR	
	(b)	Describe domain name system (DNS) in brief.	**03**
	(c)	Give classification of computer network based on their scale.	**04**
		OR	
	(c)	Differentiate LAN and WAN.	**04**
	(d)	Draw TCP/IP model and explain function of each layer	**04**
		OR	
	(d)	Describe token passing method for ProfiBus in brief.	**04**
Q.3	(a)	Draw constructional detail with label for UTP cable and explain it.	**03**
		OR	
	(a)	Draw constructional detail with label for Co-axial cable and explain it.	**03**
	(b)	List out features of network interface card (NIC).	**03**
		OR	
	(b)	Explain fiber optic connector with neat sketch.	**03**
	(c)	Compare the features of OSI and TCP/IP model.	**04**
		OR	
	(c)	Describe read holding (function code 03) of ModBus with suitable example.	**04**
Q.3	(d)	Why layer modeling is require for networking?	**04**

<div align="center">OR</div>

	(d)	Describe read coil or digital output status (function code 01) of ModBus with suitable example.	**04**
Q.4	(a)	Discuss the benefits of foundation fieldbus.	**03**

<div align="center">OR</div>

	(a)	Draw profibus protocol stack.	**03**
	(b)	Draw and explain HART point to point communication.	**04**

<div align="center">OR</div>

	(b)	List out the important points to be considered while preparing termination of foundation fieldbus system.	**04**
	(c)	Draw network connection to connect five computers using STAR topology and list out components are to be required to establish network. Assume 2 meter cable is require to establish one connection.	**07**
Q.5	(a)	Justify the need of computer network in automation.	**04**
	(b)	List out the different type of server and give one feature for each.	**04**
	(c)	List out the benefits of HART protocol	**03**
	(d)	Draw peer to peer line configuration for networking and explain it.	**03**

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