Registration No: | | | | | | | | | | |

Total Number of Pages: 01 **M.TECH**
P2ECCC07

2nd Semester Regular Examination 2016-17
Industrial Telematics
BRANCH: , COMMUNICATION ENGG, COMMUNICATION SYSTEMS, ELECTRO & COMM. ENGG, ELECTRO AND TELECOMMUNICATION ENGG
Time: 3 Hours
Max Marks: 100
Q.CODE: Z823
Answer Question No.1 which is compulsory and any FOUR from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: ***Short answer type*** **(2 x 10)**

a) Enumerate the need of Ethernet.
b) Explain punctuality in real-time Ethernet system.
c) Differentiate between hub and switch.
d) List out popular WPAN standards.
e) How clock synchronization in EIA 852 is achieved?
f) How fault tolerance is achieved in FlexRay?
g) What is serial real-time communication system and where it is used?
h) What is Multifunction vehicle bus?
i) Give four examples of Drive-by-wire system.
j) Explain Can we have too many APs and what is the impact?

Q2 **a)** Explain real-time Ethernet system with suitable example. **(10)**
b) Explain how Wireless Local and Wireless Personal Area Network Technologies help for Industrial Development. **(10)**

Q3 **a)** Explain IEEE 802.15.1 standard. How it is different from IEEE 802.11. **(10)**
b) What is stale packet detection? Explain EIA- data packet routing. **(10)**

Q4 **a)** Explain security topics and solutions for automation networks. **(10)**
b) Describe FlexRay communication technology, and the LIN standard **(10)**

Q5 **a)** How IEC 61375 is applied too Data Communication in Electrical Substations? **(10)**
b) Describe the Use of Network Hierarchies in Building Telemetry and Control Applications. **(10)**

Q6 **a)** Explain how ISO 9506 is used for Virtual Factory Communication System. Describe its Application to Networked Factory Machine. **(10)**
b) Explain Smart Transducer Interface Standard for Sensors and Actuators. **(10)**

Q7 **Write short notes on any four** **(5×4)**

a) European Installation Bus
b) ISO 9506 (MMS)
c) Safety Technology with PROFIBUS
d) X-by-Wire Systems
e) SEMI