Registration No :

Total Number of Pages : 02

M.Tech.
EIPE202

2nd Semester Back Examination 2017-18
COMMUNICATION PROTOCOLS IN INSTRUMENTATION
BRANCH : APPLIED ELECTRO & INSTRUMENTATION ENGG,
ELECTRO & INSTRUMENTATION ENGG
Time : 3 Hours
Max Marks : 70
Q.CODE : C828
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Q1   **Answer the following questions :**   **(2 x 10)**
   a)   What is Zig-Bee?
   b)   What do you mean by enterprise network with examples?
   c)   Distinguish between "Hazardous" and "Non-hazardous" area.
   d)   What is the difference between Ethernet, profibus and profinet?
   e)   State the characteristic of Device networks and control networks.
   f)   State the application of HART field device for identifying data.
   g)   Why multicast support is required at the network (IP) layer?
   h)   What is meant by cyclic redundancy checks?
   i)   Distinguish between WPAN and WLAN.
   j)   What is the difference between process to process delivery and host to host delivery?

Q2   **a)**   Classify hazardous area for division,groups, zones. State and explain different key factors contributing to classifications.   **(7)**
     b)   Distinguish between simplex, half-duplex and full-duplex with examples.   **(3)**

Q3   Explain the operation of simple multiplexer and de multiplexer circuit? Explain in detail about the HART protocol layers?   **(10)**

Q4   **a)**   The error at full-scale for an 8-bit DAC with 10V maximum output is 50Mv. Calculate the error and compare it with the resolution?   **(5)**
     b)   Discuss the various sub layers of physical layer in fast Ethernet.   **(5)**

Q5   **a)**   Explain in detail about the various data acquisition and control system configuration with neat diagram?   **(5)**
     b)   What are the significance of RS-232C, RS-422 and RS-485 Protocols?   **(5)**

Q6   **a)**   What is a Bluetooth? Give an account of the detailed architecture of Bluetooth and discuss its various layers.   **(5)**
     b)   Explain carrier sense multiple access technique in wireless network.   **(5)**

Q7   Explain OSI/ISO model in details. Narrate different protocols in each layers of   **(10)**
this model. State briefly TCP/IP protocol.

Q8   **Write short answer on any TWO :**   **(5 x 2)**
    a) Wi-Fi
    b) WPAN
    c) HART Protocol
    d) MODBUS and MODBUS PLUS