

EE5060/5111 Selected Topic in Industrial Control & Instrumentation

CA Assignment for Academic Year 2021/21, Lecture 04 & 05

Note:

- a) Submission deadline: October 11, 2021
- b) After completing, e mail it to elemkt@nus.edu.sg (Attention: Murali Krishnan T)
- c) Use the following file format: your name-course number (EE5060 or EE5111). It can be in PDF format or MS Word
- d) Maximum two pages for A) Wireless and maximum two pages for B) IIoT/Digital Transformation. Content is important.

Questions:

A. Wireless

1. Calculate the savings due to Wireless Technology compared to 4-20mA Wired solution
2. The I/O details:
 - 1 Gateway
 - Total of 70 devices of any combination
 - Device to Junction Box - 40 met
 - Junction box to Control Room – 230 met
 - Gateway to Control Room – 40 met
3. Use the following Online Tool to Calculate the Savings and submit a report
Link:
<https://www3.emersonprocess.com/rosemount/wirelessestimator/default.aspx>
4. Print and submit the cost savings report
5. Provide your analysis for the overall savings

B. IIoT/Digital Transformation

1. Explain briefly what is IIoT/Digital Transformation with respect to Process Automation Industry (with a sketch or powerpoint) from any industry (oil & gas or pharma or chemical or F&B or steel or pulp& paper) – Write in your own words (not copy & paste from internet)
2. Explain **anyone** application from **any industry** – Improving Energy/Emissions or Reliability or Safety or Production or Maintenance or Quality improvement for which IIoT/Digital Transformation can be deployed.
Provide details of the
 - Implementation methodology (briefly the concept only) – technical or project or both
 - Hardware and software packages commercially available in the market for the selected application. Provide details briefly