Code: 9A10701

R09

B.Tech IV Year I Semester (R09) Supplementary Examinations, May 2013

AUTOMATION OF INDUSTRIAL PROCESSES

(Electronics & Instrumentation Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

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1. (a) With a block diagram, describe the important elements of computer aided process control system.
   (b) What are the differences between batch and continuous processes?

2. (a) Explain about smart sensors.
   (b) Explain about process related variables.

3. (a) Discuss the used of digital computers for computer aided control system design.
   (b) What is a controller tuning? Why tuning a controller is necessary?

4. (a) For a process having transfer function $\frac{e^{-1.5s}}{(3s+1)}$, write the dead beat algorithm in a form suitable for direct digital control. Assume a suitable sampling period.
   (b) Find the modified z – transform of $\frac{1}{s^2(s+1)}$.

5. Write short notes on:
   Feed forward control algorithms - dynamic, static, deadbeat.

6. (a) Discuss the logic of model reference adaptive control.
   (b) Explain about cascade control system.

7. What is an intelligent control used for the process control and monitoring? How the control algorithm is developed in intelligent control?

8. (a) Draw the block diagram of a PLC and explain various parts in it.
   (b) Explain about DCS software configuration.

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