Code :R7311006

R7

III B.Tech I Semester(R07) Supplementary Examinations, May 2011
PROCESS CONTROL INSTRUMENTATION
(Electronics & Instrumentation Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1. A thermometer having a time constant of 1 min is initially at 50^0C. It is immersed in a bath maintained at 100^0C at t=0. Determine the temperature reading at t=1.2 min.

2. An integral controller is used for speed control with a set point of 15 rpm, range of 10-20 rpm, the constant K_i=-0.2% controller output per second per percentage error. The controller output is 28% initially. If the speed jumps to 17 rpm, calculate the controller output after 3 seconds for a constant error.

3. Explain in detail, the realization of pneumatic PD controller action with aid of Bellows, flapper-nozzles etc.

4. (a) Explain the terms 'stability' and 'measure of quality' as applicable to system evaluation with necessary graphs.
   (b) Discuss the quarter - amplitude criterion to evaluate the process.

5. Describe about "Continuous & damped oscillation methods".

6. Describe about I/P converter and P/I converter.

7. Write steps followed in choosing a value for better control of flow and should be cost effective.

8. Describe about "Ratio control" with a neat block diagram.

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