

III B.Tech I Semester Supplementary Examinations, November 2005

PROCESS CONTROL
(Electronics & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Obtain the expression for the resistance and capacitance for gas system.
(b) Differentiate between batch and continuous process. [8+8]
2. (a) Discuss about the selection of controller for various Processes.
(b) Discuss about two – position control and single – speed-floating control. [8+8]
3. With a suitable example derive the step response of a first order and second order instrument and define the various terms related to it. [16]
4. (a) Explain the principle of operation of a displacement type pneumatic proportional controller.
(b) Outline the design steps involved in the implementation of an electronic controller and explain. [8+8]
5. (a) What are the fundamental characteristics of a cascade controller?
(b) Explain the basic principle of cascade control with one industrial application. [8+8]
6. Explain about boiling liquids and condensing vapors briefly with necessary mathematical equations. [16]
7. (a) Derive the conversion rate in the plug flow reactor.
(b) Explain how exothermic reactors are non-self regulated for temperature. [8+8]
8. Write about barometric condensers. [16]
