Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EE) (2011 Onwards E-II)
B.Tech.(Electrical & Electronics) (2011 & 2012 Batch E-II)
(Sem.–7,8)
INDUSTRIAL PROCESS CONTROL
Subject Code : BTEE-804D
M.Code : 71939

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. **Answer briefly :**

   (a) Define SPC.

   (b) Draw standard instrumentation symbols for pilot tube, pneumatic signal pilot light.

   (c) How dead time affects stability of the system.

   (d) What are the salient features of DCS system?

   (e) How many number of algebraic equations required for distillation column with 20 trays.

   (f) Define ratio control.

   (g) Write down the steps involved in validation of simulation models.

   (h) Differentiate between multi-loop and single-loop control.

   (i) List down the methods of defuzzification.

   (j) Draw a closed loop process control loop.

SECTION-B

2. What is computer simulation? Discuss the method of Newton-Raphson for solving nonlinear algebraic Equations.

3. Explain briefly the reactor control using split range control.

4. What are the main advantages of feedback control over feed forward?

5. Explain RGA method of minimizing interactions.

6. Write a note on DCS flow sheet symbols.

SECTION-C

7. What do you understand by mathematical model of a physical process? Develop a mathematical model for blending process.

8. Discuss the rationale of a cascaded control system and demonstrate why it provides better response than simple feedback? What are the main advantages and disadvantages of cascaded control?

9. Write a short note on :

    (a) Windows-NT based DCS

    (b) Neural Network

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.