

FACULTY OF INFORMATICS**B.E. 4/4 (IT) I – Semester (Main) Examination, December 2010****Subject : Digital Instrumentation & Control (Elective -II)**

Time : 3 Hours

Max.Marks: 75

Note: Answer all questions from Part – A. Answer any Five questions from Part – B.**PART – A (10x2.5 = 25 Marks)**

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| 1. Illustrate response of a system. | 2 |
| 2. What is signal conditioning? Explain briefly. | 3 |
| 3. Differentiate resolution and accuracy of measuring device. | 3 |
| 4. Describe the working principle of flow sensors. | 2 |
| 5. List process characteristics and explain briefly. | 2 |
| 6. What is seeback effect and where it will be used? | 3 |
| 7. What is discrete state process? Give an example. | 3 |
| 8. Define proportional derivative control. | 2 |
| 9. Mention the characteristics of a controller. | 2 |
| 10. Define stability and give an example. | 3 |

PART – B (5x10 = 50 Marks)

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| 11.(a) Explain the operation of D/A conversion. | 5 |
| (b) Draw the block diagram and explain the elements of a process control system. | 5 |
| 12.(a) What is final control operation? Explain various control elements. | 5 |
| (b) Explain the characteristics of solid state temperature sensors. | 5 |
| 13. Write detailed notes on electric actuators and hydraulic actuators. | 10 |
| 14. Explain a digital control system in detail. | 10 |
| 15.(a) Describe the behaviour of a PID controller. | 5 |
| (b) Explain different inter locking systems in Discrete Control System. | 5 |
| 16. What is a control loop? Discuss about the multivariable control system. | 10 |
| 17. Write short notes on the following: | |
| a) Analog and Digital Controllers | 5 |
| b) Ladder diagram | 5 |