

Con. 3006-07.

[REVISED COURSE]

ND-563

(3 Hours)

[Total Marks : 100]

- N.B. (1) Question No. 1 is compulsory.
 (2) Attempt any four out of remaining six questions.

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| 1. | Write short note on the following :- | 20 |
| | (a) Piezoelectric transducer | |
| | (b) Transducer for level measurement | |
| | (c) Hair hygrometer | |
| | (d) Tuning of PID controller | |
| | (e) Neural network. | |
| 2. | (a) Explain construction, working and application of LVDT. What is residual voltage ? | 10 |
| | (b) Write short note on vibration measurement. | 10 |
| 3. | (a) What are the various signal conditioning circuits explain any four of these. | 10 |
| | (b) What is PLC ? Draw its block diagram and explain in detail the different modules. | 10 |
| 4. | (a) Describe different types of capacitive transducers. | 10 |
| | (b) Draw and explain data acquisition system. | 10 |
| 5. | (a) Compare the following temperature transducers with respect to their characteristics, range of measurement and applications – RTD, thermistor, thermocouple. | 10 |
| | (b) What are the different types of continuous controller ? Explain each of them stating their advantages and disadvantages. | 10 |
| 6. | (a) What are different methods of flow measurement ? Describe any two methods in detail. | 10 |
| | (b) Write short note on fuzzy control. | 10 |
| 7. | (a) Derive gauge factor. How strain gauge is used for measurement of pressure ? | 10 |
| | (b) What are the following terms :- | 10 |
| | (i) process lag | |
| | (ii) error | |
| | (iii) control lag | |
| | (iv) dead time | |
| | (v) set point. | |