

No. of Printed Pages : 03

Roll No. ....

**AA-42**

**M. Tech. EXAMINATION, Dec. 2017**

(First Semester)

(B. Scheme) (Main & Re-appear)

EE(PS)

MPS-503-B

POWER SYSTEM CONTROL AND  
INSTRUMENTATION

*Time : 3 Hours]*

*[Maximum Marks : 75*

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Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(3-52/10)M-AA-42

**P.T.O.**

### Unit I

1. Draw the equivalent circuit of piezo-electric transducers. Derive the expression for magnitude of voltage across the load by making simplifying assumptions. Prove that the medium and high frequencies the magnitude of the voltage across the load is independent of frequency.
2. Explain the principle of working and constructional detail and applications of photo-transistors. Explain, why are they preferred for digital applications ? Draw their characteristic.

### Unit II

3. Describe the following methods used for measurement of low pressure using :
  - (a) Thermocouple vacuum gauge
  - (b) Pirani gauge
  - (c) Ionization type vacuum gauge.
4. Describe the different electrical methods for measurement of liquid level. Compare their advantages and disadvantages.

### Unit III

5. Differentiate Distributed control Systems and SCADA Systems. Describe the components of control systems in SCADA.
6. Describe the MTU communication interface and its future trends.

### Unit IV

7. Describe the energy audit of a residential building.
8. What are various methods of load forecasting ? Describe any *one*.