

Roll No .....

**MEPS-301 (A)**

**M.E./M.Tech., III Semester**

Examination, December 2016

**Power System Instrumentation (Elective-I)**

*Time : Three Hours*

*Maximum Marks: 70*

- Note:** i) Attempt any five questions.  
ii) All questions carry equal marks.

1. a) Explain various temperature measuring transducers.  
b) What are the advantages of electrical methods for the measurement of non electrical quantities. Explain various display devices.
2. a) Explain in detail the functional elements of an instrumentation system.  
b) What are the different devices used for measurement of angular velocity. Give their applications.
3. a) What is the need of signal conditioning system. Explain AC signal conditioning system.  
b) Mention the various types of analog to digital converters in the increasing order of speed of operation.
4. a) What is a Data acquisition system. Give the block diagram of a digital DAS and describe the functions of each component. Also give the applications of DAS.  
b) What are different methods of data transmission. Explain with the help of block diagram of a general telemetry system.

5. a) With a neat diagram explain the working of a gas analyser.  
b) Name different types of pollution monitoring devices and explain.
6. a) What are the advantages and disadvantages of digital transmission over analog transmission.  
b) A DAC has 6 bits and a reference voltage of 10V. Calculate the minimum value of resistance such that the maximum value of output current does not exceed 10mA.
7. a) What are the various electromechanical and electronic methods for torque measurement. Compare them.  
b) Give the classification of transducers in detail.
8. Write short note on any two
  - a) Power factor measurement
  - b) Supervisory control
  - c) Solar flux measuring devices
  - d) Recorders

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