N.B. : (1) Question No. 1 is compulsory.
(2) Solve any three questions from remaining.

1. Solve any four :
   (a) Compare Electronic Voltmeter & Conventional Analog Voltmeter.  
   (b) Draw Schering Bridge. List applications of it.  
   (c) Define transducer. List different types of transducers.  
   (d) Explain generalized data acquisition system in brief.  
   (e) Explain sensitivity of voltmeter with one example.  

2. (a) Explain strain gauge transducer. Derive its gauge factor.  
   (b) Explain capacitive transducer for displacement measurement. Derive its expression.  

3. (a) Compare RTD and Thermocouple with construction, working & application.  
   (b) List flow meters. Draw and explain ultrasonic flow meter in detail state advantage of it.  

4. (a) Draw and explain low, medium and high resistance measurement techniques in detail.  
   (b) Draw and explain Maxwell's bridge. Write its advantages, disadvantages and applications.  

5. (a) Explain the importance of Lissajous figures in detection of frequency and phase.  
   (b) Draw & explain DSO. Write the applications of DSO.  

6. Write note on any two  
   (a) FET type voltmeter.  
   (b) Liquid Level measurement application using LVDT.  
   (c) Data logger.  

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