

R07
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Code: R7221306

B.Tech II Year II Semester (R07) Supplementary Examinations, April/May 2013

**TRANSDUCERS**

(Electronics &amp; Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions  
All questions carry equal marks

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1. (a) What are the basic blocks of generalized instrumentation system? Draw the various blocks and explain their functions.  
(b) Define:  
(i) Linearity      (ii) Resolution      (iii) Hysteresis      (iv) Threshold
2. (a) Derive the expression for the magnitude and phase of first order system when subjected to sinusoidal input signal.  
(b) Explain the second order measurement system and its response to ramp input.
3. (a) Describe the construction and working of thermister.  
(b) Explain the constructor of wire wound strain gauges and derive expression for gauge factor.
4. (a) Explain construction, working and applications of magneto elastic transducer.  
(b) Explain the construction, working and applications of synchros.
5. (a) Explain how capacitive transducer can be used for measurement of displacement.  
(b) Explain about capacitive strain gauge.
6. (a) Explain in detail about piezoelectric materials.  
(b) Explain in detail about piezoresistive effects.
7. Explain the construction, working and applications of a electrostatic pressure transducer.
8. (a) Write short notes on photodiode and phototransistor.  
(b) Explain in detail about optical pyrometer.

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