Code No: RR320204 **RR** **Set No. 2**

**III B.Tech II Semester Examinations,December 2010**
**INSTRUMENTATION**
**Electrical And Electronics Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. What is the frequency response of piezo electric transducer? [16]

2. (a) Write short notes on post deflection acceleration with respect to oscilloscope tube.
   (b) What is the minimum distance, L, that will allow full deflection of 4cm at the oscilloscope screen with a deflection factor of 100v/cm and with an accelerating potential of 2000v? [8+8]

3. (a) What are the primary detectors? Explain in detail?
   (b) A torque bar of 30 mm diameter is used for measurement of a torque of 100 NM.Calculate the angle of twist if shear modulus of mild steel is $80\times10^9$ $N/M^2$ [8+8]

4. (a) Explain in detail about basic spectrum analyzer.
   (b) Write short notes on spectral displays. [8+8]

5. Draw the block diagram of the measuring system and explain the each stage with their functions. [16]

6. (a) A resistive position transducer with a resistance of 5 kΩ and a shaft stroke of 8 cm is applied with a voltage of 5V.When the wiper is 3cm from the Reference, what is the value of the output voltage?
   (b) A resistance strain gauge with a gauge factor 2.04 is fastened to a beam which is subjected to a strain of $1X10^{-6}$.If the original resistance of the gauge is 120 Ω calculate the change in resistance? [8+8]

7. Describe the process of obtaining discrete time signal from continuous time signal. Draw the necessary plots. [16]

8. (a) Explain the measurement of differential pressure using capacitive transducer.
   (b) Explain how load cells are used in weight measurement with a suitable sketch. [8+8]

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Code No: RR320204 **RR** **Set No. 4**

**III B.Tech II Semester Examinations,December 2010**
**INSTRUMENTATION**
**Electrical And Electronics Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. Draw the block diagram of the measuring system and explain the each stage with their functions. [16]
2. Describe the process of obtaining discrete time signal from continuous time signal. Draw the necessary plots. [16]
3. (a) Explain the measurement of differential pressure using capacitive transducer.
   (b) Explain how load cells are used in weight measurement with a suitable sketch. [8+8]
4. (a) A resistive position transducer with a resistance of 5 kΩ and a shaft stroke of 8 cm is applied with a voltage of 5V.When the wiper is 3cm from the Reference, what is the value of the output voltage?
   (b) A resistance strain gauge with a gauge factor 2.04 is fastened to a beam which is subjected to a strain of $1X10^{-6}$.If the original resistance of the gauge is 120 Ω calculate the change in resistance? [8+8]
5. What is the frequency response of piezo electric transducer? [16]
6. (a) Write short notes on post deflection acceleration with respect to oscilloscope tube.
   (b) What is the minimum distance, L, that will allow full deflection of 4cm at the oscilloscope screen with a deflection factor of 100v/cm and with an accelerating potential of 2000v? [8+8]
7. (a) Explain in detail about basic spectrum analyzer.
   (b) Write short notes on spectral displays. [8+8]
8. (a) What are the primary detectors? Explain in detail?
   (b) A torque bar of 30 mm diameter is used for measurement of a torque of 100 NM.Calculate the angle of twist if shear modulus of mild steel is $80\times10^9$ N/$M^2$ [8+8]

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Code No: RR320204 **RR** **Set No. 1**

**III B.Tech II Semester Examinations,December 2010**
**INSTRUMENTATION**
**Electrical And Electronics Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. Describe the process of obtaining discrete time signal from continuous time signal. Draw the necessary plots. [16]
2. What is the frequency response of piezo electric transducer? [16]
3. (a) A resistive position transducer with a resistance of 5 kΩ and a shaft stroke of 8 cm is applied with a voltage of 5V.When the wiper is 3cm from the Reference, what is the value of the output voltage?
   (b) A resistance strain gauge with a gauge factor 2.04 is fastened to a beam which is subjected to a strain of $1X10^{-6}$.If the original resistance of the gauge is 120 Ω calculate the change in resistance? [8+8]
4. (a) Explain in detail about basic spectrum analyzer.
   (b) Write short notes on spectral displays. [8+8]
5. (a) What are the primary detectors? Explain in detail?
   (b) A torque bar of 30 mm diameter is used for measurement of a torque of 100 NM.Calculate the angle of twist if shear modulus of mild steel is $80\times10^9$ $N/M^2$ [8+8]
6. Draw the block diagram of the measuring system and explain the each stage with their functions. [16]
7. (a) Write short notes on post deflection acceleration with respect to oscilloscope tube.
   (b) What is the minimum distance, L, that will allow full deflection of 4cm at the oscilloscope screen with a deflection factor of 100v/cm and with an accelerating potential of 2000v? [8+8]
8. (a) Explain the measurement of differential pressure using capacitive transducer.
   (b) Explain how load cells are used in weight measurement with a suitable sketch. [8+8]

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Code No: RR320204 **RR** **Set No. 3**

**III B.Tech II Semester Examinations,December 2010**
**INSTRUMENTATION**
**Electrical And Electronics Engineering**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Explain the measurement of differential pressure using capacitive transducer.
   (b) Explain how load cells are used in weight measurement with a suitable sketch. [8+8]

2. (a) Write short notes on post deflection acceleration with respect to oscilloscope tube.
   (b) What is the minimum distance, L, that will allow full deflection of 4cm at the oscilloscope screen with a deflection factor of 100v/cm and with an accelerating potential of 2000v? [8+8]

3. What is the frequency response of piezo electric transducer? [16]

4. (a) Explain in detail about basic spectrum analyzer.
   (b) Write short notes on spectral displays. [8+8]

5. Describe the process of obtaining discrete time signal from continuous time signal. Draw the necessary plots. [16]

6. (a) A resistive position transducer with a resistance of 5 kΩ and a shaft stroke of 8 cm is applied with a voltage of 5V.When the wiper is 3cm from the Reference, what is the value of the output voltage?
   (b) A resistance strain gauge with a gauge factor 2.04 is fastened to a beam which is subjected to a strain of $1X10^{-6}$.If the original resistance of the gauge is 120 Ω calculate the change in resistance? [8+8]

7. (a) What are the primary detectors? Explain in detail?
   (b) A torque bar of 30 mm diameter is used for measurement of a torque of 100 NM.Calculate the angle of twist if shear modulus of mild steel is $80\times10^9$ $N/M^2$ [8+8]

8. Draw the block diagram of the measuring system and explain the each stage with their functions. [16]

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