

B.Tech. Instrumentation Engineering (NEP) Semester-II  
**STPCCINS205 - Sensors and Instruments**

P. Pages : 1

Time : Two Hours



**GUG/S/25/16815**

Max. Marks : 40

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- Notes :
1. Same answer book must be used for each question.
  2. All questions are compulsory.
  3. All questions carry marks as indicated.
  4. Due credit will be given to neatness and adequate dimensions.
  5. Assume suitable data wherever necessary.

1. A) Draw the generalized block diagram of measurement system and explain its elements in brief. 5
- B) Differentiate analog and digital signals in details. 5

**OR**

2. A) Define measurement and elaborate it with the help of suitable example. 5
- B) Classify the various types of standards of measurement. 5
3. A) Mention different types of static characteristics. 5
- B) Discuss in detail various types of errors associated measurement and how these errors can be minimized. 5

**OR**

4. A) Define the following terms: Resolution, Repeatability, Accuracy, fidelity, Hysteresis. 5
- B) Compare static and dynamic errors in instrument performance. 5
5. A) Define Transducer and classify it with suitable examples. 5
- B) Suggest the typical transducers for the measurement of industrial parameters like temperature, pressure, flow and level. 5

**OR**

6. A) Write a short note on: Capacitive Transducer 5
- B) Write the difference between sensors and transducers. 5
7. A) Define Calibration and explain the procedure of calibration of an instrument. 5
- B) What are the classifications of instrument errors? Explain about the causes and remedies for each error in detail. 5

**OR**

8. A) Discuss primary and secondary transducer with suitable example. 5
- B) Explain transducer and inverse transducer with suitable example. 5

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