

Code No: 07A32201

**R07****Set No. 2**

**II B.Tech I Semester Examinations, November 2010**  
**CALIBRATION AND ELECTRONICS MEASUREMENTS**  
**Instrumentation And Control Engineering**

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

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

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1. Write short notes on the following:

- (a) Primary calibration
- (b) Secondary calibration
- (c) Direct calibration
- (d) Indirect calibration. [16]

2. Explain the time base error of a frequency counter. [16]

3. Explain what is meant by sliding balance. How is this condition avoided by choosing variables for manipulation of balance i.e. Why variables are so chosen that the equations balance are independent of each other. [16]

4. (a) What is the importance of primary standards?

(b) What are the various type of constructions used for primary standards of capacitors? Explain any one type of primary capacitance standard. [6+10]

5. (a) Describe the working of any one type of digital voltmeter.

(b) A 4 1/2 digit voltmeter is used for voltage measurement. How would 0.6973V be displayed on

- i. 1 V range
- ii. 10V range. [10+6]

6. What are the main functional elements contained in a measurement system in general? Describe in detail with suitable examples. [16]

7. (a) Discuss the applications of a CRO.

(b) The deflection sensitivity of an oscilloscope is 35V/cm. If the distance from the deflection plates to the CRT screen is 16cm, the length of the deflection plates is 2.5cm, and the distance between the deflection plates is 1.2cm. What is the acceleration anode voltage? [8+8]

8. Write typical specifications of strip chart recorder. [16]

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**R07****Set No. 4**

**II B.Tech I Semester Examinations, November 2010**  
**CALIBRATION AND ELECTRONICS MEASUREMENTS**  
**Instrumentation And Control Engineering**

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

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

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1. (a) Describe the working of any one type of digital voltmeter.  
(b) A  $4\frac{1}{2}$  digit voltmeter is used for voltage measurement. How would 0.6973V be displayed on
  - i. 1 V range
  - ii. 10V range.[10+6]
2. What are the main functional elements contained in a measurement system in general? Describe in detail with suitable examples. [16]
3. Explain the time base error of a frequency counter. [16]
4. Write typical specifications of strip chart recorder. [16]
5. (a) What is the importance of primary standards?  
(b) What are the various type of constructions used for primary standards of capacitors? Explain any one type of primary capacitance standard. [6+10]
6. (a) Discuss the applications of a CRO.  
(b) The deflection sensitivity of an oscilloscope is 35V/cm. If the distance from the deflection plates to the CRT screen is 16cm, the length of the deflection plates is 2.5cm, and the distance between the deflection plates is 1.2cm. What is the acceleration anode voltage? [8+8]
7. Explain what is meant by sliding balance. How is this condition avoided by choosing variables for manipulation of balance i.e. Why variables are so chosen that the equations balance are independent of each other. [16]
8. Write short notes on the following:
  - (a) Primary calibration
  - (b) Secondary calibration
  - (c) Direct calibration
  - (d) Indirect calibration.[16]

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**R07****Set No. 1**

**II B.Tech I Semester Examinations, November 2010**  
**CALIBRATION AND ELECTRONICS MEASUREMENTS**  
**Instrumentation And Control Engineering**

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

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

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1. Write typical specifications of strip chart recorder. [16]
2. Explain the time base error of a frequency counter. [16]
3. Write short notes on the following:
  - (a) Primary calibration
  - (b) Secondary calibration
  - (c) Direct calibration
  - (d) Indirect calibration. [16]
4. (a) Describe the working of any one type of digital voltmeter.  
 (b) A 4 1/2 digit voltmeter is used for voltage measurement. How would 0.6973V be displayed on
  - i. 1 V range
  - ii. 10V range. [10+6]
5. (a) Discuss the applications of a CRO.  
 (b) The deflection sensitivity of an oscilloscope is 35V/cm. If the distance from the deflection plates to the CRT screen is 16cm, the length of the deflection plates is 2.5cm, and the distance between the deflection plates is 1.2cm. What is the acceleration anode voltage? [8+8]
6. Explain what is meant by sliding balance. How is this condition avoided by choosing variables for manipulation of balance i.e. Why variables are so chosen that the equations balance are independent of each other. [16]
7. What are the main functional elements contained in a measurement system in general? Describe in detail with suitable examples. [16]
8. (a) What is the importance of primary standards?  
 (b) What are the various type of constructions used for primary standards of capacitors? Explain any one type of primary capacitance standard. [6+10]

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Code No: 07A32201

**R07****Set No. 3**

**II B.Tech I Semester Examinations, November 2010**  
**CALIBRATION AND ELECTRONICS MEASUREMENTS**  
**Instrumentation And Control Engineering**

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

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

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1. (a) What is the importance of primary standards?  
(b) What are the various type of constructions used for primary standards of capacitors? Explain any one type of primary capacitance standard. [6+10]
2. What are the main functional elements contained in a measurement system in general? Describe in detail with suitable examples. [16]
3. (a) Discuss the applications of a CRO.  
(b) The deflection sensitivity of an oscilloscope is 35V/cm. If the distance from the deflection plates to the CRT screen is 16cm, the length of the deflection plates is 2.5cm, and the distance between the deflection plates is 1.2cm. What is the acceleration anode voltage? [8+8]
4. Write short notes on the following:
  - (a) Primary calibration
  - (b) Secondary calibration
  - (c) Direct calibration
  - (d) Indirect calibration. [16]
5. Explain what is meant by sliding balance. How is this condition avoided by choosing variables for manipulation of balance i.e. Why variables are so chosen that the equations balance are independent of each other. [16]
6. Explain the time base error of a frequency counter. [16]
7. (a) Describe the working of any one type of digital voltmeter.  
(b) A 4 1/2 digit voltmeter is used for voltage measurement. How would 0.6973V be displayed on
  - i. 1 V range
  - ii. 10V range. [10+6]
8. Write typical specifications of strip chart recorder. [16]

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