Code.No: NR310401   NR   SET-1

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ELECTRONICS MEASUREMENT & INSTRUMENTATION
(ELECTRONICS & COMMUNICATIONS ENGINEERING)
Time: 3hours   **Max.Marks:80**
Answer any FIVE questions
All questions carry equal marks
- - -

1.a)   What are the various types of errors? Explain   [8+8]
  b)   Explain various methods that are available to minimize and eliminate errors.

2.a)   Explain the available types of distortion. What is meant by distortion?   [8+8]
  b)   With a neat circuit diagram explain a programmable decode synthesizer.

3.a)   Derive the following   [8+8]
       i) Condition for bridge balancing
       ii) Criterion for balance of a wheat stone bridge.
  b)   Kelvin bridge is called modified wheat stone bridge. Justify your answer.

4.a)   Explain the method employed for the measurement of θ of   [8+8]
       i) High impedance components
       ii) Low impedance components
  b)   Explain the measurement of resistance of a coil using a θ meter.

5.a)   Explain the main components of CRT with a neat sketch.   [8+8]
  b)   Explain briefly the basic operation of a general purpose oscilloscope with a neat
       block diagram.

6.a)   Explain various blocks of a spectrum analyzer of the swept receiver design with a
       neat diagram.   [10+6]
  b)   Mention all the applications of spectrum analyzer.

7.   Explain briefly the working of   [16]
      (i)   Resistive transducers   (ii)   Capacitive transducers
      (iii)   Inductive transducers and give two applications for each.

8.a)   Define and explain briefly about the operating principle of an LVDT. What are its
       applications?
  b)   Discuss the advantages and disadvantages of LVDT.   [8+8]

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NR

SET-2

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ELECTRONICS MEASUREMENT & INSTRUMENTATION
(ELECTRONICS & COMMUNICATIONS ENGINEERING)

Time: 3hours   Max.Marks:80

Answer any FIVE questions
All questions carry equal marks
- - -

1.a)   Derive the following   [8+8]
      i) Condition for bridge balancing
      ii) Criterion for balance of a wheat stone bridge.
  b)   Kelvin bridge is called modified wheat stone bridge. Justify your answer.

2.a)   Explain the method employed for the measurement of θ of   [8+8]
      i)   High impedance components
      ii) Low impedance components
  c)   Explain the measurement of resistance of a coil using a θ meter.

3.a)   Explain the main components of CRT with a neat sketch.   [8+8]
  b)   Explain briefly the basic operation of a general purpose oscilloscope with a neat
      block diagram.

4.a)   Explain various blocks of a spectrum analyzer of the swept receiver design with a
      neat diagram.   [10+6]
  b)   Mention all the applications of spectrum analyzer.

5.   Explain briefly the working of   [16]
      (i)   Resistive transducers   (ii)   Capacitive transducers
      (iii)   Inductive transducers and give two applications for each.

6.a)   Define and explain briefly about the operating principle of an LVDT. What are its
      applications?
  b)   Discuss the advantages and disadvantages of LVDT.   [8+8]

7.a)   What are the various types of errors? Explain   [8+8]
  b)   Explain various methods that are available to minimize and eliminate errors.

8.a)   Explain the available types of distortion. What is meant by distortion?   [8+8]
  b)   With a neat circuit diagram explain a programmable decode synthesizer.

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Code.No: NR310401   NR   SET-3

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ELECTRONICS MEASUREMENT & INSTRUMENTATION
(ELECTRONICS & COMMUNICATIONS ENGINEERING)
Time: 3hours   **Max.Marks:80**
Answer any FIVE questions
All questions carry equal marks
- - -

1.a)   Explain the main components of CRT with a neat sketch.   [8+8]
  b)   Explain briefly the basic operation of a general purpose oscilloscope with a neat block diagram.

2.a)   Explain various blocks of a spectrum analyzer of the swept receiver design with a neat diagram.   [10+6]
  b)   Mention all the applications of spectrum analyzer.

3.   Explain briefly the working of   [16]
      (i)   Resistive transducers   (ii)   Capacitive transducers
      (iii)   Inductive transducers and give two applications for each.

4.a)   Define and explain briefly about the operating principle of an LVDT. What are its applications?
  b)   Discuss the advantages and disadvantages of LVDT.   [8+8]

5.a)   What are the various types of errors? Explain   [8+8]
  b)   Explain various methods that are available to minimize and eliminate errors.

6.a)   Explain the available types of distortion. What is meant by distortion?   [8+8]
  b)   With a neat circuit diagram explain a programmable decode synthesizer.

7.a)   Derive the following   [8+8]
      i) Condition for bridge balancing
      ii) Criterion for balance of a wheat stone bridge.
  b)   Kelvin bridge is called modified wheat stone bridge. Justify your answer.

8.a)   Explain the method employed for the measurement of θ of   [8+8]
      i) High impedance components
      ii) Low impedance components
  d)   Explain the measurement of resistance of a coil using a θ meter.

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Code.No: NR310401   NR   SET-4

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ELECTRONICS MEASUREMENT & INSTRUMENTATION
(ELECTRONICS & COMMUNICATIONS ENGINEERING)

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

Answer any FIVE questions
All questions carry equal marks

- - -

1.   Explain briefly the working of   [16]
       (i)   Resistive transducers   (ii)   Capacitive transducers
       (iii)   Inductive transducers and give two applications for each.

2.a)   Define and explain briefly about the operating principle of an LVDT. What are its
       applications?
  b)   Discuss the advantages and disadvantages of LVDT.   [8+8]

3.a)   What are the various types of errors? Explain   [8+8]
  b)   Explain various methods that are available to minimize and eliminate errors.

4.a)   Explain the available types of distortion. What is meant by distortion?   [8+8]
  b)   With a neat circuit diagram explain a programmable decode synthesizer.

5.a)   Derive the following   [8+8]
       i) Condition for bridge balancing
       ii) Criterion for balance of a wheat stone bridge.
  b)   Kelvin bridge is called modified wheat stone bridge. Justify your answer.

6.a)   Explain the method employed for the measurement of θ of   [8+8]
       i) High impedance components
       ii) Low impedance components
  e)   Explain the measurement of resistance of a coil using a θ meter.

7.a)   Explain the main components of CRT with a neat sketch.   [8+8]
  b)   Explain briefly the basic operation of a general purpose oscilloscope with a neat
       block diagram.

8.a)   Explain various blocks of a spectrum analyzer of the swept receiver design with a
       neat diagram.   [10+6]
  b)   Mention all the applications of spectrum analyzer.

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