Code No: RR320403 **RR** **Set No. 2**

III B.Tech II Semester Examinations,December 2010
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
Common to Electronics And Telematics, Electronics And Communication 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 merits and demerits of FM recording. [6]
   (b) The gap of a tape recorder is 6.25 μm. Determine the speed of the tape so as to have a satisfactory response at 50,000 Hz. Assume that recorded wave length must be greater than 2.5 times the gap of the recorder. [5]
   (c) Write short notes on Portable Oscilloscopes. [5]
2. (a) Why is Wagner's additional ground connection made?
   (b) Why does not this connection affect the balance conditions?
   (c) What are problems associated with shielding? How they are handled.[5+5+6]
3. (a) Explain the circuit diagram and operation of a source follower electronic voltmeter. Derive its equivalent circuit and find the expression for current through the meter.
   (b) Describe how the range of this voltmeter can be extended. Explain the use of zero adjustment and calibration resistors. [8+8]
4. (a) Discuss the various sources of errors in ac-bridge circuits.
   (b) Discuss the different techniques and precautions employed to reduce errors in ac bridge circuits. [6+10]
5. What is intermodulation distortion? Describe the working of an intermodulation distortion meter with the help of a block diagram. [16]
6. (a) Draw the schematic arrangement of any one type of accelerometer and explain its working principle? [10]
   (b) What are the advantages and disadvantages of capacitive transducers. [6]
7. (a) With neat sketches and suitable equations explain the working of a capacitive transducer?
   (b) Explain the operation of a potentiometric transducer. [8+8]
8. (a) Discuss the methods of improvement of sweep linearity.
   (b) Discuss the method of computation of the phase angle between two signals of the same frequency with diagrams.
   (c) Explain the terms luminance and persistence. [6+5+5]

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Code No: RR320403 **RR** **Set No. 4**

III B.Tech II Semester Examinations,December 2010
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
Common to Electronics And Telematics, Electronics And Communication Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. What is intermodulation distortion? Describe the working of an intermodulation distortion meter with the help of a block diagram. [16]
2. (a) Discuss the methods of improvement of sweep linearity.
   (b) Discuss the method of computation of the phase angle between two signals of the same frequency with diagrams.
   (c) Explain the terms luminance and persistence. [6+5+5]
3. (a) Discuss the various sources of errors in ac-bridge circuits.
   (b) Discuss the different techniques and precautions employed to reduce errors in ac bridge circuits. [6+10]
4. (a) With neat sketches and suitable equations explain the working of a capacitive transducer?
   (b) Explain the operation of a potentiometric transducer. [8+8]
5. (a) What are the merits and demerits of FM recording. [6]
   (b) The gap of a tape recorder is 6.25 μm. Determine the speed of the tape so as to have a satisfactory response at 50,000 Hz. Assume that recorded wave length must be greater than 2.5 times the gap of the recorder. [5]
   (c) Write short notes on Portable Oscilloscopes. [5]
6. (a) Why is Wagner's additional ground connection made?
   (b) Why does not this connection affect the balance conditions?
   (c) What are problems associated with shielding? How they are handled.[5+5+6]
7. (a) Draw the schematic arrangement of any one type of accelerometer and explain its working principle? [10]
   (b) What are the advantages and disadvantages of capacitive transducers. [6]
8. (a) Explain the circuit diagram and operation of a source follower electronic voltmeter. Derive its equivalent circuit and find the expression for current through the meter.
   (b) Describe how the range of this voltmeter can be extended. Explain the use of zero adjustment and calibration resistors. [8+8]

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Code No: RR320403 **RR** **Set No. 1**

III B.Tech II Semester Examinations,December 2010
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
Common to Electronics And Telematics, Electronics And Communication Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Discuss the methods of improvement of sweep linearity.
   (b) Discuss the method of computation of the phase angle between two signals of the same frequency with diagrams.
   (c) Explain the terms luminance and persistence. [6+5+5]
2. What is intermodulation distortion? Describe the working of an intermodulation distortion meter with the help of a block diagram. [16]
3. (a) Explain the circuit diagram and operation of a source follower electronic voltmeter. Derive its equivalent circuit and find the expression for current through the meter.
   (b) Describe how the range of this voltmeter can be extended. Explain the use of zero adjustment and calibration resistors. [8+8]
4. (a) Why is Wagner's additional ground connection made?
   (b) Why does not this connection affect the balance conditions?
   (c) What are problems associated with shielding? How they are handled.[5+5+6]
5. (a) With neat sketches and suitable equations explain the working of a capacitive transducer?
   (b) Explain the operation of a potentiometric transducer. [8+8]
6. (a) Draw the schematic arrangement of any one type of accelerometer and explain its working principle? [10]
   (b) What are the advantages and disadvantages of capacitive transducers. [6]
7. (a) What are the merits and demerits of FM recording. [6]
   (b) The gap of a tape recorder is 6.25 μm. Determine the speed of the tape so as to have a satisfactory response at 50,000 Hz. Assume that recorded wave length must be greater than 2.5 times the gap of the recorder. [5]
   (c) Write short notes on Portable Oscilloscopes. [5]
8. (a) Discuss the various sources of errors in ac-bridge circuits.
   (b) Discuss the different techniques and precautions employed to reduce errors in ac bridge circuits. [6+10]

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Code No: RR320403 **RR** **Set No. 3**

III B.Tech II Semester Examinations,December 2010
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
Common to Electronics And Telematics, Electronics And Communication Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) With neat sketches and suitable equations explain the working of a capacitive transducer?
   (b) Explain the operation of a potentiometric transducer. [8+8]
2. (a) What are the merits and demerits of FM recording. [6]
   (b) The gap of a tape recorder is 6.25 μm. Determine the speed of the tape so as to have a satisfactory response at 50,000 Hz. Assume that recorded wave length must be greater than 2.5 times the gap of the recorder. [5]
   (c) Write short notes on Portable Oscilloscopes. [5]
3. What is intermodulation distortion? Describe the working of an intermodulation distortion meter with the help of a block diagram. [16]
4. (a) Explain the circuit diagram and operation of a source follower electronic voltmeter. Derive its equivalent circuit and find the expression for current through the meter.
   (b) Describe how the range of this voltmeter can be extended. Explain the use of zero adjustment and calibration resistors. [8+8]
5. (a) Draw the schematic arrangement of any one type of accelerometer and explain its working principle? [10]
   (b) What are the advantages and disadvantages of capacitive transducers. [6]
6. (a) Discuss the various sources of errors in ac-bridge circuits.
   (b) Discuss the different techniques and precautions employed to reduce errors in ac bridge circuits. [6+10]
7. (a) Why is Wagner's additional ground connection made?
   (b) Why does not this connection affect the balance conditions?
   (c) What are problems associated with shielding? How they are handled.[5+5+6]
8. (a) Discuss the methods of improvement of sweep linearity.
   (b) Discuss the method of computation of the phase angle between two signals of the same frequency with diagrams.
   (c) Explain the terms luminance and persistence. [6+5+5]

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