

Code.No: NR/RR221001

NR/RR**Set No. 2**

II B.Tech II Semester Examinations, December 2010
ELECTRICAL AND ELECTRONIC MEASUREMENTS
Common to Electronics And Control Engineering, Electronics And
Instrumentation Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Name the measurements for which a vector voltmeter is used.
 (b) Draw the block diagram of the vector volt meter, mention all the blocks. [6+10]
2. (a) Describe a modern laboratory signal generator? What techniques are used to improve its stability?
 (b) Explain briefly about the frequency divider. [8+8]
3. (a) What is a Probe? What are the advantages of using an active voltage probe?
 (b) What is delayed sweep? When it is used?
 (c) Why is an attenuator probe used? [6+4+6]
4. (a) Explain Tant-band suspension. [6]
 (b) Draw the schematic, including values for an Ayrton shunt for a meter movement having full-scale deflection of 1mA and an internal resistance of 500Ω to cover the current ranges of 10, 50, 100 and 500mA. [5+5]
5. (a) Explain with the help of a block diagram how the period can be measured?
 (b) What is meant by time base error and explain a calibration method to improve the accuracy of it. [10+6]
6. (a) Explain quantising error with respect to DVM
 (b) Explain successive approximation conversion techniques. [6+10]
7. (a) With neat circuit diagram, explain the function of associated circuits that are used for CRT operation.
 (b) Explain how the light is emitted on the screen of a CRO. [10+6]
8. (a) Draw the block diagram of a true RMS measuring instrument and explain its working.
 (b) A symmetrical square wave voltage of maximum value E_M and time period T is applied to an average responding AC voltmeter with a scale calibrated in terms of the RMS value of a sine wave. Calculate the error in meter indication. [8+8]

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NR/RR**Set No. 4**

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Answer any FIVE Questions
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1. (a) Explain quantising error with respect to DVM
 (b) Explain successive approximation conversion techniques. [6+10]
2. (a) Draw the block diagram of a true RMS measuring instrument and explain its working.
 (b) A symmetrical square wave voltage of maximum value E_M and time period T is applied to an average responding AC voltmeter with a scale calibrated in terms of the RMS value of a sine wave. Calculate the error in meter indication. [8+8]
3. (a) With neat circuit diagram, explain the function of associated circuits that are used for CRT operation.
 (b) Explain how the light is emitted on the screen of a CRO. [10+6]
4. (a) Explain Taut-band suspension. [6]
 (b) Draw the schematic, including values for an Ayrton shunt for a meter movement having full-scale deflection of 1mA and an internal resistance of 500Ω to cover the current ranges of 10, 50, 100 and 500mA. [5+5]
5. (a) Name the measurements for which a vector voltmeter is used.
 (b) Draw the block diagram of the vector volt meter, mention all the blocks. [6+10]
6. (a) What is a Probe? What are the advantages of using an active voltage probe?
 (b) What is delayed sweep? When it is used?
 (c) Why is an attenuator probe used? [6+4+6]
7. (a) Describe a modern laboratory signal generator? What techniques are used to improve its stability?
 (b) Explain briefly about the frequency divider. [8+8]
8. (a) Explain with the help of a block diagram how the period can be measured?
 (b) What is meant by time base error and explain a calibration method to improve the accuracy of it. [10+6]

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NR/RR**Set No. 1**

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1. (a) What is a Probe? What are the advantages of using an active voltage probe?
 (b) What is delayed sweep? When it is used?
 (c) Why is an attenuator probe used? [6+4+6]
2. (a) Describe a modern laboratory signal generator? What techniques are used to improve its stability?
 (b) Explain briefly about the frequency divider. [8+8]
3. (a) Name the measurements for which a vector voltmeter is used.
 (b) Draw the block diagram of the vector volt meter, mention all the blocks. [6+10]
4. (a) Explain with the help of a block diagram how the period can be measured?
 (b) What is meant by time base error and explain a calibration method to improve the accuracy of it. [10+6]
5. (a) Explain Tant-band suspension. [6]
 (b) Draw the schematic, including values for an Ayrton shunt for a meter movement having full- scale deflection of 1mA and an internal resistance of 500Ω to cover the current ranges of 10, 50, 100 and 500mA. [5+5]
6. (a) Explain quantising error with respect to DVM
 (b) Explain successive approximation conversion techniques. [6+10]
7. (a) With neat circuit diagram, explain the function of associated circuits that are used for CRT operation.
 (b) Explain how the light is emitted on the screen of a CRO. [10+6]
8. (a) Draw the block diagram of a true RMS measuring instrument and explain its working.
 (b) A symmetrical square wave voltage of maximum value E_M and time period T is applied to an average responding AC voltmeter with a scale calibrated in terms of the RMS value of a sine wave. Calculate the error in meter indication. [8+8]

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NR/RR**Set No. 3**

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1. (a) Explain Tant-band suspension. [6]
 (b) Draw the schematic, including values for an Ayrton shunt for a meter movement having full-scale deflection of 1mA and an internal resistance of 500Ω to cover the current ranges of 10, 50, 100 and 500mA. [5+5]
2. (a) Explain with the help of a block diagram how the period can be measured?
 (b) What is meant by time base error and explain a calibration method to improve the accuracy of it. [10+6]
3. (a) Describe a modern laboratory signal generator? What techniques are used to improve its stability?
 (b) Explain briefly about the frequency divider. [8+8]
4. (a) With neat circuit diagram, explain the function of associated circuits that are used for CRT operation.
 (b) Explain how the light is emitted on the screen of a CRO. [10+6]
5. (a) Explain quantising error with respect to DVM
 (b) Explain successive approximation conversion techniques. [6+10]
6. (a) Draw the block diagram of a true RMS measuring instrument and explain its working.
 (b) A symmetrical square wave voltage of maximum value E_M and time period T is applied to an average responding AC voltmeter with a scale calibrated in terms of the RMS value of a sine wave. Calculate the error in meter indication. [8+8]
7. (a) Name the measurements for which a vector voltmeter is used.
 (b) Draw the block diagram of the vector volt meter, mention all the blocks. [6+10]
8. (a) What is a Probe? What are the advantages of using an active voltage probe?
 (b) What is delayed sweep? When it is used?
 (c) Why is an attenuator probe used? [6+4+6]
