Code: 9A04405 **1**

B.Tech II Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

ELECTRONIC MEASUREMENTS

(Common to EIE & E.Con.E)

Time: 3 hours Max Marks: 70

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

1 Explain the performance characteristics of measurements.

2 What are the standards of measurement? Explain international standards.

3 Discuss the difference between direct calibration and indirect calibration.

4 Explain the operation of a.c voltmeter using:
(a) Full wave rectifier.
(b) Half wave rectifier.

5 Why Kelvin's bridge is preferred? Derive the bridge balance equation for Kelvin's double bridge.

6 Explain the operation hetero-dyne wave analyzer.

7 With a neat block diagram, explain the function of each block of a general purpose oscilloscope.

8 Explain real-time spectrum analyzer and its applications.

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Code: 9A04405 **2**

B.Tech II Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

ELECTRONIC MEASUREMENTS

(Common to EIE & E.Con.E)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 What are the different types of measurement errors occurring in electronic measurements?

2 Discuss the standards of:
(a) Voltage.
(b) Current.

3 How a voltmeter is calibrated? Discuss with an example.

4 What is a thermocouple? Explain its operation with neat diagram.

5 Derive the balance equation for Maxwell's bridge.

6 Explain frequency synthesizer, discuss its applications.

7 Explain CRT with a neat diagram.

8 Explain harmonic mixing in a spectrum analyzer.

*****

Code: 9A04405

3

B.Tech II Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

ELECTRONIC MEASUREMENTS

(Common to EIE & E.Con.E)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 What is the need of calibration experiment and how the results are evaluated?

2 How the statistical analysis of data measurement is done?

3 Explain time and frequency standards.

4 How the range of voltmeters and ammeters is extended? Explain.

5 What is wheat stone bridge? Derive its balance equation.

6 Discuss the errors that are associated with frequency counters.

7 (a) Explain sampling oscilloscope.
(b) Explain storage oscilloscope.

8 What is a logic analyzer? Discuss in detail.

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Code: 9A04405 **4**

B.Tech II Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

ELECTRONIC MEASUREMENTS

(Common to EIE & E.Con.E)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Explain the standards of:
   (a) Resistance.
   (b) Capacitance.

2 Explain the terms in measurement:
   (a) Reliability.
   (b) Traceability.

3 With a neat diagram, explain a digital voltmeter.

4 What are the forms and methods of measurements?

5 (a) Discuss all the types of bridges in detail.
   (b) Explain Q-meter.

6 What is a wave analyzer? Explain frequency selective wave analyzer.

7 (a) Explain sweep modes of time-base generator in CRO.
   (b) What are the standard specifications of CRO?

8 (a) What are recorders, Discuss its classification.
   (b) Explain X-Y plotter.

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