Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 51411

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Sixth Semester

Electronics and Communication Engineering

EC 2351/EC 61/10144 EC 602 — MEASUREMENTS AND INSTRUMENTATION

(Regulation 2008/2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Define the term error.

2.   List the various dynamic characteristics of a measurement system.

3.   Enumerate the salient features of true RMS meters.

4.   Differentiate the digital storage oscilloscope with the analog oscilloscope.

5.   Write short notes on wave analyzer.

6.   Give the importance of L, C and R measurements.

7.   What is meant by automatic ranging?

8.   Define the term "virtual instrument".

9.   How do you measure the power loss in a fiber optic measurement system?

10. What is meant by reflectometer?

PART B — (5 × 16 = 80 marks)

11. (a)   Explain in detail about the various statistical measurement analysis
           techniques.   (16)

Or

     (b)   Discuss in detail about the following measurement techniques.

           (i)   Maxwell bridge.   (8)

           (ii) Anderson bridge.   (8)

12. (a) Explain in detail about the following measurement systems.

    (i)   Q meter.   (8)

    (ii)   Vector meter.   (8)

Or

(b) Explain in detail about the following measuring instruments.

    (i)   Delayed time base oscilloscope.   (8)

    (ii)   Cathode ray oscilloscope.   (8)

13. (a) Explain in detail about the RF signal generators and sweep generators.

    (8 + 8)

Or

(b) Explain in detail about the frequency synthesizer and harmonic distortion analyzer.   (8 + 8)

14. (a) Describe in detail about the digital voltmeter, multimeter and frequency counter.   (5 + 5 + 6)

Or

(b) Describe in detail about the computer controlled test systems with suitable examples.   (16)

15. (a) Write short notes on the following :

    (i)   Interfacing of transducers with DAS.   (8)

    (ii)   Data loggers.   (8)

Or

(b) Write short notes on the following :

    (i)   IEEE 488 bus.   (8)

    (ii)   Digital data acquisition system.   (8)

———————