Reg. No. | | | | | | | | | | | | |

Question Paper Code : 57319

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fourth Semester

Electrical and Electronics Engineering

EE 6404 – MEASUREMENTS AND INSTRUMENTATION

(Regulations 2013)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Name the dynamic characteristics of measurement systems.

2. What is meant by calibration of an instrument ?

3. Define creeping in energy meter ?

4. How are basic instruments converted into higher range ammeter ?

5. What is called a volt-ratio box ?

6. What is meant by grounding ?

7. Mention the role of Data loggars in Instrumentation system.

8. Distinguish between LED and LCD.

9. What are the factors to be considered for selection of transducers ?

10. List the types of Analog to Digital Converter ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Explain the static characteristics of an instrument. **(10)**

(ii) Explain in detail the calibration technique. **(6)**

OR

(b) What are the different types of errors ? Explain how to eliminate errors in instruments. **(16)**

12. (a) With neat sketch, explain the construction and operation of repulsion type moving iron instrument. Give the advantages and limitations of such instruments. **(16)**

OR

(b) (i) Obtain B-H curve of ring specimen. **(8)**

(ii) Describe how to obtain iron loss of a ring specimen **(8)**

13. (a) Draw the diagram of Co-ordinate type A.C. potentiometer and explain its working principle. **(16)**

OR

(b) (i) Explain how the inductance is measured in terms of known capacitance using maxwell's bridge. Derive the conditions for balance. **(12)**

(ii) Why Hay's bridge is suited for measurement of inductance of high Q coils. **(4)**

14. (a) With neat diagram, explain the basic components and working principle of magnetic tape recorders. **(16)**

OR

(b) Describe the construction and working of LCDs. Mention the difference between light scattering and field effect types of LCDs, also explain the advantages of LCDs.

15. (a) Explain in detail about construction and working of LVDT. **(16)**

OR

(b) Explain smart sensors with built in features. Compare with conventional sensors. **(16)**
