

22/11/17 AW



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Question Paper Code : 50484

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Fourth Semester

Electrical and Electronics Engineering

EE6404 – MEASUREMENTS AND INSTRUMENTATION

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. List any four static characteristics of a measurement system.
2. Define resolution.
3. What are the sources of errors in DC voltage measurement ?
4. Define creeping.
5. Write the condition for an AC bridge to be balanced.
6. Name the faults that occur in the cables.
7. List the components of a magnetic tape recorder.
8. What are Lissajous figures ?
9. Give any two applications of smart sensors.
10. How are transducers classified ?

PART – B

(5×13=65 Marks)

11. a) i) Describe the functional elements of an instrument with its block diagram. (8)
ii) Explain the dynamic characteristics of an instrument in detail. (5)
- (OR)
- b) i) What is a standard ? Explain the different types of standards. (8)
ii) Explain in detail the different calibration techniques. (5)



12. a) Describe the construction and working principle of single phase induction type energy meter. Write a short note on any adjustment required in energy meter. (13)

(OR)

- b) i) How do you determine the B-H curve using 'step by step' method? (8)
ii) Explain with neat sketch any one type of instrumentation transformer. (5)

13. a) i) Draw a neat sketch of a modern slide-wire D.C. potentiometer and discuss how the potentiometer is standardized. (8)

- ii) Describe the operation of A.C. potentiometer. (5)

(OR)

- b) Explain in detail about the interference and screening in measurements. (13)

14. a) i) Explain the features of digital plotters and printers. (8)

- ii) Explain the construction and working principle of Magnetic tape recorder. (5)

(OR)

- b) Describe the LED and LCD display devices. (13)

15. a) What are the selection criteria for a transducer? Explain the working principle of LVDT with neat sketch. Mention the advantages and applications of LVDT. (13)

(OR)

- b) What are the performance parameters of analog to digital converter? Explain any two basic A/D conversion techniques in detail. (13)

PART – C

(1×15=15 Marks)

16. a) Explain in detail about Hall effect transducer and mention some applications of Hall effect transducer. (15)

(OR)

- b) Explain in detail the elements of Data Acquisition System. (15)