

B.TECH. DEGREE EXAMINATION, MAY 2015**Seventh Semester**

Branch : Electronics and Communication Engineering
EC 010 704—ELECTRONIC INSTRUMENTATION (EC)
(New Scheme—2010 Admission onwards)
[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 3 marks.*

1. Give the block diagram of an instrumentation system.
2. What are passive transducers ? Give *two* examples.
3. Draw the circuit of a Schering's bridge. Write the expression for R_x and C_x .
4. What is harmonic distortion ? Explain.
5. Explain any *one* method of torque measurement.

(5 × 3 = 15 marks)

Part B

*Answer all questions.
Each question carries 5 marks.*

6. Write a note on static characteristics of instruments.
7. Discuss the principle and construction of LVDT.
8. Draw the circuit diagram of guarded Wheatstone's bridge. Compare it with the basic Wheatstone's bridge.
9. Discuss the working of swept TRF spectrum analyzer with a neat block diagram.
10. Explain the flow measurement principle with a neat diagram.

(5 × 5 = 25 marks)

Part C

*Answer all questions.
Each full question carries 12 marks.*

11. Define static error. How is it classified ? Explain.

Or

Turn over

12. Derive the dynamic responses of zero order, first order and second order instruments.

13. Write short notes on :

(i) Hall effect sensor.

(6 marks)

(ii) Thin film sensor.

(6 marks)

Or

14. Give a note on selection criteria for transducers. Add a note on strain gauge.

15. Draw an instrumentation amplifier. Explain its functioning. What are its characteristics ?

Or

16. Determine the current through the galvanometer for an unbalanced Wheatstone bridge.

17. Highlight the features of a distortion meter with a neat block diagram.

Or

18. Discuss the basic principles of data acquisition system.

19. Explain any *three* methods for the measurement of pressure.

Or

20. Write short notes on :

(i) Measurement of temperature.

(6 marks)

(ii) Measurement of force.

(6 marks)

[5 × 12 = 60 marks]