G 1624 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2015

Eighth Semester

Branch : Applied Electronics and Instrumentation Engineering/ Electronics and Instrumentation Engineering/Instrumentation and Control Engineering

AI 010 801/EI 010 801/EC 010 801—INSTRUMENTATION SYSTEM DESIGN (AI, EI, IC)

(Common to AI 010 801 and IC 010 801 and EI 010 801)

[New Scheme—2010 Admission onwards]

(Regular/Supplementary)

Time : Three Hours Maximum : 100 Marks

Part A

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

1. Explain the elastic sensing elements.
2. Describe the features trends in intelligent devices.
3. Write short notes on design of rotameter.
4. Discuss about the instrument specific sheet.
5. Write about auto correlation function in instrument system.

(5 × 3 = 15 marks)

Part B

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

6. Write about Line arising techniques for thermocouple and Thermistor in single conditioning element ?
7. Explain the difference between open loop and closed loop transmitters.
8. Explain the factors affecting sensitivity in bourdon tube.
9. Give detail about process flow sheet and mechanical flow sheet.
10. Describe methods of reduction of noise in instrument system.

(5 × 5 = 25 marks)

Part C

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

11. Explain about inductive push pull displacement sensor in sensing element.

Or

Turn over

12. Briefly explain the design of the bridge circuit for RTD in signal conditioning element.

13. Describe the concept of 2 and 4 wire transmitters with 4 and explain 20 mA output in current transmitters.

Or

14. Describe the design of low level and high level annunciators.

15. Write about Design of orifice for a given flow condition for compressible and incompressible fluids.

Or

16. Describe about design of square root extractors for variable head flow meters.

17. Explain preparation of instrumentation project and how documents to be produced.

Or

18. Briefly explain analytical instrument and control panels.

19. Which statistical tools are used in signal and noise representations ? Explain with examples.

Or

20. Explain signals and noise in instrument systems.

(5 × 12 = 60 marks)