

**B.Tech. (ME) 4th Semester (G-Scheme)**  
**Examination, July-2022**  
**INSTRUMENTATION & CONTROL**  
**Paper- PCC-ME-210-G**

*Time allowed : 3 hours]*

*[Maximum marks : 75*

*Note : Question No. One is compulsory having six parts and each part is of 2.5 marks, total of 15 marks and remaining questions is of 15 marks, and attempt one question from each section.*

1. (a) List advantages of computer based Instrumentation system.
- (b) What do you mean by linearity of Instrument? Explain.
- (c) Explain opto - electrical transducer.
- (d) List various elastic transducer to measure pressure.
- (e) Define open and close loop control system.
- (f) Explain thermal screening. 6×2.5=15

**Unit - I**

2. Explain (i) Accuracy (ii) Precision (iii) Range and span (iv) Hysteresis (v) Random error 15
3. What do you mean by Instruments? Classify and explain them. 15

**Unit - II**

4. Explain
- (i) Piezo electric transducer
  - (ii) LVDT
  - (iii) Analog and Digital transducer
5. Discuss Resistance Strain gauge transducer, classify them. Also list their advantages, limitation and application. 15

**Unit - III**

6. (a) What do you mean by amplifiers? Classify and explain them. 10
- (b) Explain strain gauge torque meter. 5
7. With neat sketch explain electrical methods of temperature measurement. 15

**Unit - IV**

8. Schematically draw Bourdon tube pressure gauge and show its key element. Explain its working principle, list uses, advantages and limitation. 15
9. (a) What do you mean by control system? Differentiate between open loop and close loop control system. 8
- (b) Classify controllers and explain them. 7