



17551

15162

3 Hours / 100 Marks

Seat No.

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Instructions : (1) *All questions are compulsory.*
(2) *Figures to the **right** indicate **full** marks.*

	Marks
1. Attempt any five of the following :	20
a) What is measurement ? State its basic requirements and significance.	4
b) What are different modes of pneumatic controller to control action ?	4
c) State the limitations of open loop control system.	4
d) Explain construction and working of RVDT.	4
e) What is seebek effect ? State advantages and limitations of thermocouple.	4
f) Define dead time and dead zone.	4
g) Give classification of strain gauge.	4
2. Attempt any four of the following :	16
a) Define :	4
i) Precision	ii) Threshold
iii) Resolution	iv) Backlash
b) Draw block diagram of automatic control system.	4
c) State advantages and limitations of potentiometer.	4
d) What stands pt-100 ? Explain working of RTD using constructional diagram.	4
e) Explain with sketch ultrasonic flow meter and give its advantages.	4
f) State the units of humidity. Explain the working of hair hygrometer.	4
3. Attempt any two of the following :	16
a) What are different types of electrical tachometers ? Explain with neat sketch drag cup tachometer.	8
b) Explain construction and working of LVDT with advantages and disadvantages.	8
c) Compare hydraulic and pneumatic control system (any four points).	8

P.T.O.



	Marks
4. Attempt any four of the following :	16
a) What is drift ? Explain with neat sketch.	4
b) What is systematic error in measurement ? How it can be reduced ?	4
c) Explain the working of linear potentiometer for displacement measurement with sketch.	4
d) Explain with neat sketch optical pyrometer.	4
e) State law of intermediate temperature and law of intermediate metals.	4
f) Explain with sketch hot wire anemometer.	4
5. Attempt any four of the following :	16
a) Distinguish between accuracy and precision.	4
b) Define overshoot with neat sketch.	4
c) Explain with neat sketch Turbine meter.	4
d) Explain with neat sketch tool dynamometer.	4
e) State advantages of stroboscope.	4
6. Attempt any two of the following :	16
a) Distinguish between open loop and closed loop control system. Explain with suitable example closed loop control system.	8
b) Write the application of the following :	8
i) Hot wire anemometer	ii) Turbine meter
iii) Ultrasonic flow meter	iv) Pitot tube
v) Orifice meter	vi) Flow nozzle
vii) Rotameter	viii) Electromagnetic flow meter
c) Explain with neat sketch bimetallic thermometer. State advantages and limitations of liquid filled thermometer.	8
