Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Eighth semester B.Tech degree examinations, September 2020

Course Code: AE482

Course Name: INDUSTRIAL INSTRUMENTATION

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

			Marks
1	a)	What do u mean by negative temperature coefficient of resistance? Explain one element showing this effect.	(7)
	b)	(i)What is a Thermograph? How it can be used to measure temperature? (ii) Write a short note about temperature switches.	(8)
2	a)	Discuss i) Mc-Leod Gauge ii) Pirani Guage	(7)
	b)	With neat sketch explain the working principle of Suction pyrometers.	(8)
3	a)	Explain how pressure signal can be converted to standard current signal.	(8)
	b)	Explain any two mechanical type pressure measuring instrument in detail.	(7)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	Define (i) Viscosity ii) Kinematic viscosity iii) Specific viscosity	(6)
	b)	Explain the working of: (i) Cone-and-plate Viscometer (ii) Ostwald Viscometer.	(9)
5	a)	With neat sketches illustrate positive displacement gas flow meter.	(10)
	b)	Explain the different classification of flow meters with example.	(5)
6	a)	Explain the working of: (i) Fluid Dynamic densitometer (ii) Hot Wire Bridge Gas density detector	(10)
	b)	Explain the working principle of head type pitot tube.	(5)

PART C

Answer any two full questions, each carries 20 marks.

7	a)	State the principle of operation of hot-wire anemometers and write the working of constant current type hot-wire anemometers.	(10)
	b)	Give the principle of working of mass flow meter and explain the working of a turbine mass flow meter.	(10)
8	a)	What is the difference between a Float & a Displacer? How a mechanical pressure sensor can be used in level measurement?	(10)
	b)	State the principle of capacitance based level sensors and write notes on any two types of capacitance based level sensors.	(10)
9	a)	Explain the level measurement using electric resistance type instruments.	(10)
	b)	Explain the working of transit time and Doppler ultrasonic flow meters.	(10)

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