Total No. of printed pages = 6

END SEMESTER EXAMINATION - 2019

Semester: 6th

Subject Code: CAI - 612

INDUSTRIAL INSTRUMENTATION

Full Marks - 70

Time - Three hours

The figures in the margin indicate full marks for the questions.

Instructions:

- 1. All questions of PART A are compulsory.
- 2. Answer any five questions from PART-B.

PART - A

Marks - 25

1.	Fill	in the blanks:	1×10=10
	(a)	6666.12N/m ² =	Torr.
	(b)	Ionization gauges oper ionising the	rate on the principle of

[Turn over

50/CAI-612/II	(e)	(b)	(6)	(b)		(a)	2. W	9	©	(h)	(8)	(f)			(. (
-612/11) One	diffe		rite tr) Stro velo			200	(e) Kinematic	sphere.	(a)	c) For	CAST BROKE
	unit c	hol is	ıls hav	Pasca	different metals	Bimetallic	ue or	ee of l	Stroboscopy velocity.	recip	ometer	liquio	ematic	ere.		ce is	
	of visc	a ma	e posi	l is e	netals.	thern	Write true or false:	is the	oe is	rocal	Barometer is for measuring	in M			mm c	(c) Force is measured using	
(2)	osity i	nomet	tive te	quivale		thermometer		phenos or co	for n	of flui	r mea	cLeod	viscosity viscometer.		of Hg	red us	
	s Pasc	Alcohol is a manometric liquid.	mperat	nt to		ıs.		menor	Stroboscope is for measuring velocity.	The reciprocal of fluidity is	suring	The liquid in McLeod gauge is	æ.		is the	ing _	
	The unit of viscosity is Pascal-Seconds.	uid.	Metals have positive temperature coefficient.	One Pascal is equivalent to 100 dyne/cm ² .		made of		is the phenomenon expressing the degree of hotness or coldness of a substance.				e is _	measured		mm of Hg is the Standard		
	onds.		efficie	ne/cm		of two	1×10=10	ssing tubstan			1					1.	
x '			ř	1. 10.		vo	/	CENT	RALLIGARIA			1	using		atmo-		
							1/2							Aug. Si			
5							TINSTITUTE.	000	GY KOKEN								
50/CAI-612/II							(a)	CUINOFC	OGY KOK		Θ	(h)		(g)		(f)	
612/11	(iv)		-	(ii) 1	(i) I	meas		Choose t	Iron	a RI	Then		weig	ln 1	gauge.	Piran	
	McLeod gauge	WCII :	W-11 t	Manometer	Bridgeman gauge	uring	vice w	he cor	Const	TD.	mopile	mistor	ht of ortiona	ressur	e.	ii gaug	
	d gau	ypc m		neter	man g	low p	hich u	rrect a	antan ype T		cons	is a no	a giv	e hea		e is a	
(3)	ge	wen сурс manometer	anome		auge	measuring low pressure is	A device which uses the indirect method for	the correct answer:	Iron Constantan is the metal alloys used to construct Type T thermocouple.		Thermopile consists of a thermocouple and	Thermistor is a non-contact type thermometer.	weight of a given volume of a fluid is proportional to density.	pressure head type densitometer;		(f) Pirani gauge is a gravitational type pressure	- N
		2				Si	e indir		metal		a the	act typ	olume	e dens		ationa	
Ŧ						6	ect me		alloys le.		moco	e then	of a	sitome		l type	
Turn over							thod f	1×5=5	used		ıple aı	nomet	fluid			pressu	
4							10	, Ch	6		<u>p</u>	H	S.	the		e	

50/CAI-612/II (4) 55(W)	(iii) Pirani gauge (iv) McLeod gauge.	(i) Bridgeman gauge (ii) Ionization gauge	(e) Which gauge uses platinum as the sensing element?	(iii) ρgh (iv) h/ρg	(i) gh/ρ (ii) ρg/h	(d) The pressure difference in a vertical U-Tube manometer is given by	-	(i) Sensor (ii) Light source	(c) The number of pulses generated in a photoelectric tachometer depends on the number of disc holes and	(iv) Bimetallic thermometer	(iii) Thermistor	(ii) Thermocouple	(i) RTD	(b) Which thermometer is based on change in dimensions?
50/CAI-612/II (5) [Turn over	(b) McLeod gauge. 5	(a) U-tube manometer 4.	7. Explain the construction and working of the following:	7	photoele	(a)	6. (a) Define acceleration and also write its SI unit.	displacer type densitometer.	Define density and relativits unit.	two types of accelerometers.	(b) Explain the construction and working of any	4. (a) Define velocity and also write its SI unit.		PART B Share S

- 8. Explain the following:
 - (a) RTD
 - (b) Well type manometer
- 9. Explain the following:
 - (a) Rotameter type viscometer 4
 - (b) Dead weight tester.



50/CAI-612/II

(6)

55(W)