SARDAR PATEL UNIVERSITY

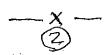
B.Sc. Fifth semester

Instrumentation (Vocational) US05CINV01

Process Measurement Techniques-1 Monday, 22/10/2018

	Wonday, 221 10120	Marks: - 70
Time	: - 10:00AM To 1:00 PM	·
Q.1	Choose the correct answer (Attempt all)	(10)
	What is the temperature of common salt water	er at freezing point?
(1)	or (C)	32 °F
	$(a) \angle \mid \angle \mid $	0°F
(2)	The second of th	lic strip type thermometer?
(2)	(a) Thermo electricity.	10 - 43 - 45
	\cdot	fure compensation?
(3)	Which of following gives best Cross tempera	Gas Filled thermometers.
` '	(a) Vapour Filled thermometers. (c)	Liquid Filled thermometers.
	(b) Dual Filled thermometers. (d) Which parameter is increased when Thermo	occuples are connected in series?
(4)		, (Course).
	(a) Sensitivity.	N Reneatability.
(5)	(b) Reproducibility. Thermocouple made from which metals have a compared to the compared to t	e highest temperature range?
(5)	(a) Platinum - Rhodlum.	, ooppo
	(b) Nickel - Aluminum. (0	
(6)	What is the temperature coefficient of RTD	? :) Negative.
ζ-,	(a) Positive.	,) Negativo.
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(7)	What is atmospheric pressure at sea level?	e) 750mm of Hg.
	(a) 100mm of 19.	d) 777mm of Hg.
(0)	(b) 760mm of Hg. (0) What is the principle of operation of the ma	nometer?
(8)	(a) Hydrostatic balance.	C) LICOROGIANO
		d) Pneumatic balance.
(9)	(b) Electromagnetic balance. What happens to the thermal conductivity	in a closed chamber when the pressure
(0)	in chamber reduces?	
	(a) Neudoco.	c) Increases.d) None of above.
	(b) Remains Constant.	
(10		(c) Spiral.
	(a) Tichoan	(d) None of above.
	(b) C type.	(20)
Q2	Answer the following questions (Any T	
(1)	Define temperature and explain important What is the temperature of the saturated	
(2)		the name of the liquids that can be used
(3)	in filled system in glass thermometer.	
/ 41	Discuss the See hack's experiment of	the thermoelectricity and explain law of
(4)	intermediate metals.	
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What is temperature coefficient? Give examples of the devices having positive and (5) negative temperature coefficient. List the advantages and disadvantages of Thermistor temperature sensors. (6)Write hydrostatic balance expression for $P_a < P_x$ for U tube manometer. (7)Define Atmospheric, Gauge and vacuum pressure. (8)Find the pressure exerted on the bottom of tank having water filled up to 1 meter (9)List the advantages and disadvantages of the Diaphragm gauge. (10)List the characteristics features required in materials used to prepare the (11)Diaphragm. Briefly explain effect of pressure on thermal conductivity of medium. (12)Describe the physical quantity temp. List and discuss the various (10) Q3 measurement scales (units) used for the temperature measurement. Write a note on filled system thermometer. List their advantages and (10) Q3 disadvantages. What are the total radiation Pyrometers and explain its working principles (10) Q4 and discuss its construction in detail. Describe the Peltier effect and Thomson effect for Thermoelectricity and (10) Q4 also discuss construction of thermocouple probe. Explain various terms used in the pressure measurements and explain the (10) Q5 method for the measurement of atmospheric pressure. OR Write a note on expanded bulb U tube manometer. Q5 (10)Explain the principles of operation and construction of diaphragm pressure Q6 (10)gauge and draw the diagram of the various types of diaphragms. Explain the principles of operation and construction of Bellows gauge.



(10)

Q6