[99] SEAT No._____ No. of Printed Pages : 02

SARDAR PATEL UNIVERSITY V.V.NAGAR

B.Sc. INSTRUMENTATION (Voc.)

Monday, 11th, November -2019 EXAMINATION

Sub: INSTRUMENTATION SYSTEM- I (US01CINV21)

TIME:-02:00 pm to 5:00 pm **MARKS-70**

Q-1 **Choose correct answer.** [10]

1. _____ is negative co-efficient of temperature.
   (A) LDR (C) RTD
   (B) Thermistor (D) None of above
2. The current sensitivity of a meter is expressed in_____.
   (A) ampere (C) ohm/ampere
   (B) ohm/volt (D) None of above
3. Capacitive reactance used to pass _____ signal and block ____ signal.
   (A) AC, DC (C) AC,AC
   (B) DC, AC (D) None of above
4. A Multimeter is used to measure _____
   (A) Voltage (C) Resistance
   (B) Current (D) all of above
5. _____ Value resistor has color band sequence blue, orange, silver, and silver.
   (A) 63 Ω +/- 10 % (C) 6.3 Ω +/- 5 %
   (B) 0.63 Ω +/- 10 % (D) None of above
6. ___is expressed as reproducibility of measurements.
   (A) Precision (C) Error
   (B) Accuracy (D) None of above
7. Candela is unit of_____.
   (A) Temperature (C) luminous intensity
   (B) Mass (D) length
8. 1 _____ = 0.4535 Kg
   (A) Pound (C) Gram
   (B) Mili gram (D) None of above
9. _____ is referring to the deviation from true value of measured quantity.
   (A) Error (C) Significant figure
   (B) Random (D) None of above
10. The ratio of output signal of instrument to a change of an input signal is _____.
    (A) Accuracy (C) Resolution
    (B) Sensitivity (D) None of above

Q-2 **Short answer type question. (any Ten)** [20]

1. List the advantage of Digital Voltmeter over other type of voltmeter.
2. Briefly explain variable types of resistor.
3. Briefly explain Thermistor.
4. Define active components and briefly explain it.
5. Draw block diagram of CRO.
6. List uses of Lissajous figure.
7. Briefly explain instrumentation error.
8. State formula for average deviation.
9. Define Sensitivity and Resolution.
10. State null and deflection type of instrument.
11. Draw diagram of feedback type measurement system.
12. Briefly explain significant figures.

(P.T.O.)

Q.3 (a)	List different fixed type of Inductor and explain it.	[07]
Q.3(b)	Explain series and parallel connected capacitor.	[03]
	OR	
Q.3	List different type of resistor and explain fixed type resistor any three in detail.	[10]
Q.4(a)	Explain Digital voltmeter (DVM) with necessary figure.	[05]
Q.4(b)	Explain cathode ray tube with necessary figure.	[05]
	OR	
Q.4(a)	Explain Ayrton shunt multi range Ammeter using necessary circuit diagram.	[06]
Q.4(b)	List CRO application and explain any two in detail.	[04]
Q.5(a)	Explain Gross and Random error in detail.	[07]
Q.5(b)	Explain systemic error.	[03]
	OR	
Q.5(a)	Describe manually operated and automatic type instrument.	[05]
Q.5(b)	Describe null and deflection type instruments.	[05]
Q.6(a)	Explain classification of standards in detail.	[07]
Q.6(b)	The speed limit on a highway is 80 km/hr. Calculate the limit in ; (i) mi/hr (ii) ft/s.	[03]
	OR	
Q.6	Explain electrical standards (1) Resistance standard (2)Time and Frequency	[10]