

V.P & R.P.T.P. SCIENCE, V.V.NAGAR
Internal Exam
B.Sc. (Ist SEM.) INSTRUMENTATION (Voc.)

DATE: 01/10/2018

SUB: US01CINV21

TIME: 12:30 pm to 1:30 pm

MARKS-50

Q-1 Choose correct answer.

[08]

1. _____ is the resistance of the resistor having Yellow, Yellow, Brown and Gold colour bands printed on it.
(A) $440 \Omega \pm 5\%$ (C) $44K\Omega$
(B) $4.4 K\Omega \pm 5\%$ (D) none of above
2. Capacitance of a capacitor depends on _____.
(A) Area of plates (C) Free space permittivity
(B) Difference between two plates (D) all of above
3. _____ Damping is considered as best damping.
(A) Critical (C) Over
(B) Under (D) none of above
4. Limitation of the Ayrton shunt is as the range increases the meter resistance _____.
(A) Increases (C) Constant
(B) Decreases (D) none of above
5. _____ is referring to the deviation from true value of measured quantity.
(A) Error (C) significant figure
(B) Random (D) none of above
6. Working Standards has Accuracy of ___ ppm.
(A) 9.144 (C) 0.9144
(B) 91.44 (D) None of above
7. _____ converts one form of energy to another form of energy.
(A) Transducer (C) Transformer
(B) Wheatstone bridge (D) none of above
8. _____ is the unit of candela.
(A) Mass (C) Temperature
(B) Length (D) Pressure



Q-2 Short answer type question. (any Five)

[10]

1. Define active and passive component.
2. Define inductive reactance (X_L).
3. List the factors that determine the motion of coil in the magnetic field.
4. List the advantage of DVM (Digital Voltmeter) over other type of voltmeter.
5. What is resolution?
6. Define accuracy and precision.
7. State Different standard of Measurement.
8. State different typical applications of instrumentation system.

P.T.O

Q.3 List different type of fixed type resistor and explain any three in detail. [08]

OR

Q.3 List different type of capacitor and explain fixed type capacitor any three in detail. [08]

Q.4 Explain how the PMMC galvanometer is converted in to voltmeter. Determine resistance of multiplier resistance R_a , R_b , R_c , R_d ; A PMMC movement with 100Ω coil resistance (R_m) and 1 mA full scale deflection current (I_{fsd}) is to be converted in to a multi-range voltmeter with voltage ranges of 0-10 V, 0-50V, 0-250 V and 0-500 V. [08]

OR

Q.4 Write a note on CRO with necessary figure. [08]

Q.5 Explain gross and random error in detail. [08]

OR

Q.5 Explain functional elements of measurement system. [08]

Q.6 Write a note on classification of standards. [08]

OR

Q.6 Derived an equation for electrical and magnetic units. [08]


