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SEAT No. _____

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SARDAR PATEL UNIVERSITY

B.Sc. INSTRUMENTATION (V)

SEM-I, OCTOBER-2018 (NC) EXAMINATION

SUB. CODE:-US01CINV01

SUB: BASIC ELECTRONIC INSTRUMENTS

DATE:-26/10/2018, Friday

TIME:- 2:00 pm to 4:00 pm

MARKS-70

- Q-1 Choose correct answer [10]
- Air core coil has _____ flux density.
(A) medium (C) low
(B) high (D) all of above
 - _____ is the resistance of the resistor having yellow, yellow, brown and gold colour bands printed on it.
(A) $440 \Omega \pm 5\%$ (C) $4.4 K\Omega$
(B) $4.4 \Omega \pm 5\%$ (D) none of above
 - _____ Transformer is normally used in power supply.
(A) Air core (C) Ferrite core
(B) Iron core (D) none of above
 - _____ Instrument used for measurement of medium resistance.
(A) Voltmeter-Ammeter Method (C) Substitution method
(B) Wheatstone bridge (D) all of above
 - As the light intensity decreases the resistance of the LDR _____.
(A) Increases (C) Constant
(B) decreases (D) none of above
 - Capacitive reactance is _____ proportional frequency.
(A) Inversely (C) Indirectly
(B) Directly (D) none of above
 - _____ Coil type galvanometer mostly use in laboratory.
(A) pivoted (C) vibration
(B) suspended (D) none of above
 - _____ converts one form of energy to another form of energy.
(A) Transducer (C) transformer
(B) Wheatstone bridge (D) none of above
 - Sensitivity of DC current meter depends on _____.
(A) Inductance of coil (C) Room temperature
(B) Resistance of coil (D) none of above
 - Mutimeter is used to measure _____.
(A) resistor (C) current
(B) voltage (D) all of above

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

[20]

- Define capacitive reactance (X_c).
- Briefly explain parallel connection inductor.
- What is variable inductance? List types of variable inductance.
- List application of Variable resistor.
- Define active and passive component.
- Why the eddy current is less in ferrite core transformer?
- Define voltmeter sensitivity.
- Discuss the effect of the temperature on galvanometer.
- List the factors that determine the motion of coil in the magnetic field.

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10. Draw the circuit of multi-range voltmeter.
11. Write an expression for torque produced by the coil and explain it.
12. List application of multimeter.
- Q.3(A) List different type of fixed type resistor and explain any three in detail. [07]
- Q.3(B) Write a note on series and parallel connected resistor. [03]
- OR**
- Q.3(A) Draw the circuit of the Whetstone bridge, explain its working and derive an expression for unknown resistor. [07]
- Q.3(B) Write a short note on LDR. [03]
- Q.4(A) List different type of capacitor and explain fixed type capacitor any two in detail. [07]
- Q.4(B) Write a short note on variable capacitor. [03]
- OR**
- Q.4(A) Explain Air core coil and Iron core coil in detail. [05]
- Q.4(B) Explain variable inductor. [05]
- Q.5 List various parts and Explain the suspension galvanometer construction and working with necessary figure. [10]
- OR**
- Q.5 With necessary diagram explain PMMC mechanism and discuss its damping mechanism. [10]
- Q.6(A) Explain how the PMMC galvanometer is converted in to voltmeter. [05]
- Q.6(B) A PMMC movement with 100Ω coil resistance and 1 mA full scale deflection current 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. Determine resistance of multiplier. [05]
- OR**
- Q.6(A) Explain how PMMC movement is converted in to an ammeter. [05]
- Q.6(B) Write a note on multimeter. [05]

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