C637

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SARDAR PATEL UNIVERSITY

B.Sc. INSTRUMENTATION (VOC.)
SEM – I, November 2013
INSTRUMENTATION SYSTEM - 1
SUB CODE: **US01CINV02**

DATE: 27TH Nov. 2013
DAY: Wednesday

TIME: 2:30 PM TO 4:30 PM
TOTAL MARKS: 70

Q. 1 Choose the correct answer. [10]

(1) _____ is not type of error.
(A) Systematic
(B) Random
(C) Gross
(D) Accuracy

(2) _____ is referring to the deviation from true value of measured quantity.
(A) Error
(B) Significant figure
(C) Accuracy
(D) None of above

(3) Candela is unit of _____.
(A) Mass
(B) Light
(C) Length
(D) None of above

(4) The ratio of output signal of instrument to a change of an input signal is _____.
(A) Accuracy
(B) Error
(C) Sensitivity
(D) None of above

(5) In coulomb's law equation K stand for _____.
(A) Proportionality constant
(B) Inversely constant
(C) Force
(D) Magnitude

(6) 1_____ = 0.9144 meter.
(A) yard
(B) feet
(C) Inch
(D) None of above

(7) _____ Error is referring short coming of instrument such as defective or worn parts.
(A) Gross
(B) Random
(C) Systematic
(D) All of above

(8) 1 _____ = 0.4535 kg.
(A) Pound
(B) Gram
(C) Milligram
(D) None of above

(9) Output of transducer become input of _____ system.
(A) Signal conditioning
(B) output
(C) External power element system
(D) None of above

(10) _____ is type of instruments.
(A) Deflection and null
(B) Rectification
(C) Arithmetic
(D) None of above

Q.2 Answer the following.(attempt any ten) **[20]**

(1) Define accuracy and precision.
(2) State standard definition of weight (gram) and length (meter).
(3) Define gross error.
(4) Define fundamental and derived unit.
(5) Enlist classification of standards.
(6) State formula for average deviation.
(7) Define sensitivity and resolution.
(8) State different standard of measurement.
(9) List different system of unit.
(10) Enlist just classification of instruments.
(11) What is important of signal conditioning element?
(12) What is auxiliary element? Brief in short.

Q.3 (A) Write note on functional elements of measurement system. **[10]**

OR

Q.3 (A) Explain classification of instruments in detail. **[10]**

Q.4 (A) What is error? Discuss gross error and random error in detail. **[10]**

OR

Q.4 (A) Illustrate different methods of statistical analysis of observation with suitable example. **[10]**

Q.5 (A) Velocity of light in free space is given as 2.99×10^{08} m/s, systematically calculate the velocity of light in km/sec and km/hr. **[05]**

(B) The floor area of building is 5000 m^2 calculate the floor area in $cm^2$and $foot^2$. **[05]**

OR

Q. 5 (A) Derived an equation for electrical and magnetic unit. **[10]**

Q. 6 (A) Illustrate the standard for, mass, length, and volume in detail. **[10]**

OR

Q. 6 (A) Describe the standard for time and frequency in detail. **[10]**

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