

موقع
المهندس الأول



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JORDAN UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
ENGINEERING MEASUREMENTS (0904423)

First Test, SUMMER SEMESTER 2004-2005
Dr. Jehad A. A. Yamin Date: 28th December, 2006
Time : 70 minutes.

Answer all questions

Q1) Fill in / choose correct answer of the following

(30 Points)

19/2

- a) The process of comparing the performance of an instrument with the precise standard is called ... calibration .
- b) ... lag is a term used to express the retardation or delay of the system response to a change in input signal.
- c) Accuracy is a term that refers to the degree of closeness with which the system indicated or records the signal.
- d) Static ~~characteristic~~ system refers to the performance of an instrument when the quantities to be measured are constant or vary slowly with time.
- e) rise time is the time required by the output of a second order system responding to step input, to reach 100% of the input starting from zero.
- f) resolution is the least change of the measured variable which can be detected at the output of the measuring system is called :
- g) environmental error are those are types of errors that in the course of a number of measurements, made under the same conditions, of the same value of quantity, they either remain constant in absolute value and sign or vary according to some definite law
- h) A force transducer has range 0-150 N with 0.1% resolution. The smallest change of input that can be detected by this transducer is equal to 1.5 N
- i) A spring scale requires a change of 15 N in the applied weight to produce 2cm change in deflection of the spring. This spring has static sensitivity equal to 1.33 x 10⁻³ m/N .
- j) A pressure gauge having a range 1000 kN/m² has an error of ±2% of full scale deflection. If the true pressure is 150 kN/m², the range of readings will be 3.0 → 1.70 kN/m² If the error is specified as percentage of true value, the range of the readings will be (1.47 → 1.53) kN/m²