

Static and Dynamic Behavior or Sensors

Total Questions: 4

Most Correct Answers: #4

Least Correct Answers: #1

1. Life and dead zero

- 6/21 A A life zero allows to distinguish between a 0 measurement and a disconnection/wire breakage.
- 12/21 B A dead zero allows to distinguish between a 0 measurement and a disconnection/wire breakage.
- 8/21 C Affine characteristics correspond to a dead zero.
- 8/21 D Life zeros can also occur in nonlinear characteristics.

2. Compensation of nonlinear sensor characteristics

- 5/21 A A Taylor series expansion can be used for a global linear approximation.
- 5/21 B For the linearization around an operating point all terms of a Taylor series expansion are used.
- 5/21 C Compensation via inversion is only possible for strictly monotonic functions.
- 3/21 D The inverse function equals the reciprocal values of the original function.

3. Dynamic errors

- 8/21 A ...originate from superposed noise.
- 17/21 B ...are often caused by inertias of masses or their electric counterparts.
- 8/21 C ...occur even for unchanged input signals.
- 19/21 D ...can also occur when dealing with analog signals.
- 6/21 E A unit step causes higher dynamic errors than a ramp signal.

4. Noise

- 20/21 A ...can be suppressed by filters.
- 17/21 B ...occurs even for unchanged input signals.
- 4/21 C ...can not occur when dealing with analog signals.
- 14/21 D The negative effect of noise can partly be compensated through the usage of more sensors and averaging all sensor signals.