

ECGR 4161 Quiz 5 – Spring 2009

1) What is your name? (2 pts)

2) With respect to the short ethics article, describe one ethical problem with respect to child care/elder care. Write this in 2-3 sentences. (3 pts)

- * Long term social & mental effects (child care)
- * Elder care: leave the work to robots, when they need human attention

3) Chapter 3 lists many sensors or things to sense. List 10 (5 pts)

Position

encoder

Velocity → accelerometer, ultrasound, positional

acceleration → accelerometer

Load/stress → strain gauge, pressure sensor, load cell

Temperature → resistance, dissimilar metal, IR

Battery charge → AD converter

Failure

Olfaction → pH, chemical

Audition → mic, light

Touch → capacitive, resistive, switches, bump sensors

Slippage →

Taste →

pH →

Proximity → Sonar, IR, GPS, light, Inductor

Vision → Camera, LIDAR, light

Current use →

load on a motor → current

$$V = IR$$
$$5V = I \cdot 10\Omega$$
$$500mA = I$$