

## QUIZ: THE PID CONTROLLER

PANTELIS SOPASAKIS

### Quiz questions

- (1) The **input** signal to a **controller** is the
  - (a) Error, (= set-point – measured system variable),  $e(t) = y^{sp}(t) - y^m(t)$
  - (b) Set-point,  $y^{sp}(t)$
  - (c) Measured system variable
  - (d) Control action
- (2) The **limit** of the **error** at infinity is called...
  - (a) Offset
  - (b) Set-point
  - (c) Measurement
  - (d) Feedback
- (3) The **main reason** for using the integral in PID is so that...
  - (a) the error **converges**
  - (b) the error converges to zero in presence of **disturbances**
  - (c) the **derivative** of the controlled variable goes to zero
  - (d) the controlled variable does not **oscillate**
- (4) A PD controls a quadcopter's altitude. It should hover at 1m. Instead, it hovers at 0.7m...
  - (a) Increase the proportional gain
  - (b) Decrease the proportional gain
  - (c) Decrease the derivative gain
  - (d) Introduce an integral mode
- (5) In a software implementation of the PID controller, the **integral** can be approximated using...
  - (a) sum of errors
  - (b) successive differences of errors
- (6) In a software implementation of the PID controller, the **derivative** can be approximated using...
  - (a) sum of errors
  - (b) successive differences of errors