Lab 1

In Lab

Question 3.1) 12.5V

Question 3.2) If one cell is below 3.5V

Question 3.3)

Question 3.4)

- Pitch: 0o

- Roll: 0o

- Yaw: 250o

Question 3.5)

- Pitch

- Max: 90o

- Min: -90o

- Roll

- Max: 180o

- Min: -180o

Question 3.6)

1. Tilted on one leg
   1. Roll: 18 o
   2. Pitch: 30 o
   3. Yaw: 247 o
2. Nosedive
   1. Roll: 5 o
   2. Pitch: -45 o
   3. Yaw: 241 o

Question 3.7)

The IMU can detect altitude using the barometer, and by using its 9-axis inertial measurement unit, the accelerometer works by measuring the acceleration of the quadcopter. By doing this it can determine which direction gravity is facing and in turn measure pitch and roll. The gyroscope measures change in rotation but has no 'set' point like gravity.However, the accelerometer can’t measure position, orientation, or magnitude of velocity; the gyroscope can’t measure orientation, and the magnetometer is faulty indoors or in areas with a ferrous metal objects or near electromagnets.

Question 3.8)

1. Pitch: -90 o
2. Roll: 0 o
3. X - 9.81
4. Y - 0
5. Z – 0

Question 3.9) Question 3.9 Picture


Question 3.10) A and C are spinning counter-clockwise

B and D are spinning clockwise