

**6 Software and Security Engineering (rja14)**

You have joined a startup which plans to use a new solid state battery and a new electric motor to offer an improved auxiliary power kit for bicycles. The motor will fit in the front wheel hub and be connected to the battery by a cable. The battery will attach to the handlebar and the motor will be controlled by the a twist grip. In order to be legal, the motor must not power the bicycle at too high a speed. This speed limit is set by country but is typically 25, 30, 32 or 45 km/h.

- (a) Using an appropriate methodology, list the combinations of actions that might lead to unsafe motor activation. [5 marks]
- (b) Devise a safety policy and a security policy, and suggest a test strategy. [10 marks]
- (c) What development methodology would you recommend? [5 marks]