WK08 LISTENING

***Answer the following questions based on the presentation about autonomous cars in Task 18 of Unit 4. Submit your answers in a single Word file named “student number + name”, e.g. “1120180000LIMING***

1) Why do we need autonomous cars?

If there were a autonomous car, we wouldn‘t have to sit behind the wheel of a car when we are really tired or don‘t want to drive at all.

2) Why did the speaker experiment with robotic race cars?

First, we believe that before people turn over control to an autonomous car, that autonomous car should be at least as good as the very best human drivers.

Second, just like race car drivers can use all of the friction between the tire and the road, all of the car's capabilities to go as fast as possible, we want to use all of those capabilities to avoid any accident we can.

Thirdly, he has a strong passion for that.

3) What typical experimental method has been adopted to explore the performance of robotic race cars?

They compare the performance of robotics race cars with that of human counterparts.

4) How did the researchers measure what was going on in the professional race car driver’s mind when they were on the track?

A graduate student put electrodes on the driver‘s head so that they can monitor the electrical activity in his brain as he races around the track. By observing the theta waves and the alpha waves, we get a measure of mental workload, how much the driver is actually challenged cognitively at any point along the track.

5) What capabilities of human race car drivers have been found?

They are capable of driving an amazingly fast line without the benefit of an algorithm. Besides of that, they are also able to do it lap after lap and consistently do this, pushing the car to the limits every single time. And if put them in a new car, after a few laps, they’ve found the fastest line in that car and they’re off to the races.

6) What insights and inspirations could be drawn from the experiments on autonomous vehicles?

It made them think a lot more about the future of the autonomous cars and the relationship between human and machine.