

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

Part I: Read the following CNN article, and answer the questions. (40%)

Maggie Lake, CNN Anchor

Self-driving cars are set to move into the fast lane. Starting this month in Pittsburgh, Uber is testing out rides in cars with no driver. Yes, there will be an Uber employee sitting behind the wheel just in case, but they won't be driving. The public trials are in partnership with Volvo, and 100 cars are expected to be on Pittsburgh roads by the end of the year. Now, automakers are clambering to get onto the driverless track. Earlier this week, Ford's CEO boosted its investment in this technology and spoke to me about its huge potential.

Mark Fields, CEO, Ford

We believe that the next decade is going to be defined by the automation of the vehicle. And autonomous vehicles could have the same societal impact as Ford's moving assembly line did 100 years ago.

Maggie Lake, CNN Anchor

That's saying a lot. I want to bring in Nidhi Kalra. She is in San Francisco. She's a senior information scientist for the Rand Corporation and has been looking at the safety and issues surrounding self-driving vehicles.

Nidhi, thank you very much for being with us. I want to ask you: when you hear that they're going to start actually testing this in Pittsburgh, are we rushing things? Do we have enough testing that's been done in the real world to actually put these vehicles on the road?

Nidhi Kalra, Senior Information Scientist, Rand Corporation

You know, the great thing that Uber is doing is that they're going to have that test driver, or that safety driver, behind the wheel in case something goes wrong. And so that's a great way to get the American public familiar with the technology without putting them at extraordinary risk, or without creating serious safety concerns. So, it's an interesting strategy to get people familiar with the experience of being driven by an autonomous vehicle without subjecting them to the potential risks.

Maggie Lake, CNN Anchor

And I know a lot of the proponents of this day: listen, a lot of accidents are caused by humans - whether we're distracted or drinking and driving or ...but...so, we make a lot of mistakes. But human beings also make a lot of split-second decisions that may actually save lives. Is a pedestrian stepping off a sidewalk? Is that a paper bag or a real obstacle? You know, we have

these sorts of instantaneous things happening as we read our environment. Can technology mimic that?

Nidhi Kalra, Senior Information Scientist, Rand Corporation

You know, it can. Artificial intelligence and machine learning are really at an advanced stage today. And the thing is - the opportunity for life saving is so enormous. Something like 95 percent of the crashes that are caused are by human error. So there's just such an enormous room for improvement that I feel pretty good that the technology, when well design, can do a lot for our transportation safety.

1. Which of the following would be an appropriate title for this article? (5%)
 - (a) Uber blows off regulators, tests self-driving Volvos in Pittsburgh.
 - (b) Uber unleashes self-driving cars upon the market.
 - (c) Uber stops Pittsburgh self-driving car program after DMV puts the brakes on.
 - (d) Uber self-driving cars pulled amid traffic violations.

2. Which of the following does NOT apply to Uber's self-driving cars? (5%)
 - (a) Uber will be in partnership with Volvo.
 - (b) An Uber employee will be sitting behind the wheel.
 - (c) Uber cars will only have passengers in the vehicle.
 - (d) An Uber employee will be in the car.

3. What kind of company does Rand Corporation belong to? (5%)
 - (a) Self-driving vehicle company.
 - (b) Artificial intelligence company.
 - (c) Newspaper office.
 - (d) Global policy think tank.

4. According to the article, what is a benefit of human drivers? (5%)
 - (a) Humans can make split-second decisions.
 - (b) Humans are distracted easily.
 - (c) Humans never drive after drinking alcohol.
 - (d) Human error is responsible for less than 5% of accidents.

5. What are your concerns regarding the development of self-driving vehicles in terms of their social and environmental impacts? (Please provide your answer in English using between 100-200 words.) (20%)

Part 2: Complete the following sentences with the vocabulary words below in their correct grammatical form. (40%)

proponent

auditory

sterilize

homogeneous

subject

maneuver

hierarchy

synthetic

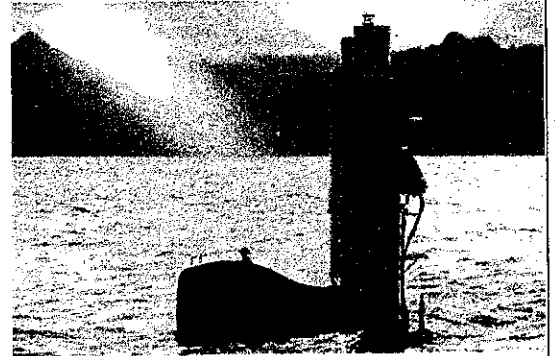
anticipate

coordinate

6. Engineers developed a _____ skin that may have several medical applications.
7. When learning to play the drums, Jeff had difficulty _____ his right and left hands.
8. Human _____ sense is more sensitive than visual sense in detecting video errors.
9. Tristan's higher salary _____ him to greater taxes than his brother.
10. Jill has been a _____ of environmental protection since the 1990s.
11. Kelly successfully _____ her scooter into the extremely tight parking spot.
12. New Orleans is a very diverse city and its culture is not _____ at all.
13. The waste _____ is a set of priorities for the efficient use of resources.
14. The nurse _____ the doctor's instruments before the surgery began.
15. It is _____ that the parties will develop an appropriate allocation of.

Part 3: Read the following Technology NEWS, and answer the questions. (20%)

Although wave energy-harvesting systems are often just presented as concepts that may someday see actual use, one was recently deployed in Hawaii to provide power to the municipal grid. Built by Northwest Energy Innovations, the Azura device will remain in operation for a 12-month assessment period, with an eye toward eventual commercialization.



Located at the US Navy's Wave Energy Test Site near Kaneohe Bay on the north shore of Oahu, the 45-ton (41-tonne) device is unique in that its 360-degree rotating float mechanism is able to extract power from both vertical and horizontal wave motions. By contrast, some other systems can only utilize up-and-down or back-and-forth movements.

The pilot project is being conducted with the support of the US Department of Energy, the US Navy, and the University of Hawaii. The university will be in charge of data collection and analysis, while the other two groups will use that data in their "ongoing efforts to validate wave energy technology and advance the marine renewable energy industry."

Hawaii may also end up being home to a commercial-scale Ocean Thermal Energy Conversion (OTEC) plant, which generates electricity by exploiting the temperature difference between warm surface water and colder deep water.

16. Do you think that the wave energy-harvesting systems are appropriate to be deployed in Taiwan? (Please provide your answer in English using between 100-200 words.) (20%)