S7 2023-24 M1PEX
Reading Comprehension
Technology and Society

All answers must be written in **the appropriate spaces provided** in this test booklet.

For each section, please read the instructions carefully and be guided accordingly.

READING COMPREHENSION 1

Reminder: At the end of this exam, you will be asked to write an argumentative essay about the themes addressed in the articles. Keep this in mind while you read.

Read the text below:
Nearly 400 Car Crashes in 11 Months Involved Automated Tech, Companies Tell Regulators
Associated Press
June 15, 2022

Automakers reported nearly 400 crashes of vehicles with partially automated driver-assist systems, including 273 involving Teslas, according to statistics released Wednesday by U.S. safety regulators. Automakers reported crashes from July of last year through May 15 under an order from the agency, which is examining such crashes broadly for the first time. "As we gather more data, National Highway Traffic Safety Administration will be able to better identify any emerging risks or trends and learn more about how these technologies are performing in the real world," said Steven Cliff, the agency's administrator. Tesla's crashes happened while vehicles were using Autopilot, "Full Self-Driving," Traffic Aware Cruise Control, or other driver-assist systems that have some control over speed and steering. The company has about 830,000 vehicles with the systems on the road.

In a June 2021 order, NHTSA told more than 100 automakers and automated vehicle tech companies to report serious crashes within one day of learning about them and to disclose less-serious crashes by the 15th day of the following month. The agency is assessing how the systems perform and whether new regulations may be needed. NHTSA also said that five people were killed in the crashes involving driver-assist systems, and six were seriously hurt.

Tesla's crash number also may be high because it uses telematics to monitor its vehicles and get real-time crash reports. Other automakers don't have such capability, so their reports may come slower or crashes may not be reported at all, NHTSA said. A message was left seeking comment from Tesla. Tesla's crashes accounted for nearly 70% of the 392 reported by the dozen automakers. Although the Austin, Texas, automaker calls its systems Autopilot and "Full Self-Driving," it says the vehicles cannot drive themselves and the drivers must be ready to intervene at all times.

At present, NHTSA is using the crash data to look for trends and discuss them with the companies, the agency said. Already NHTSA has used the data to seek a recall, open investigations and provide information for existing inquiries, officials said. Also, they said it's difficult to find out how many drivers actually use the technology. "This will help our investigators quickly identify potential defect trends that can emerge," Cliff said. "These data will also help us identify crashes that we want to investigate and provide more information about how people in other vehicles interact with the vehicles." The Alliance for Automotive Innovation, which represents most automakers, said the data collected by NHTSA isn't sufficient by itself to evaluate the safety of automated vehicle systems.

NHTSA's order also covered companies that are running fully autonomous vehicles, and 25 reported a total of 130 crashes. Google spinoff Waymo led with 62, followed by Transdev Alternative Services with 34 and General Motors-controlled Cruise LLC with 23. In 108 of the crashes involving fully autonomous vehicles, no injuries were reported, and there was only one serious injury. In most of the crashes, vehicles were struck from the rear.
https://www.npr.org/2022/06/15/1105252793/nearly-400-car-crashes-in-11-months-involved-automated-tech-companies-tell-regul

READING COMPREHENSION 1 QUESTIONS

Decide whether the statements about the article are TRUE **(T)** or FALSE **(F)**. (Each correct answer is worth **0.5 point, 4 points total**). Put a "X" in the correct space for each question.

According to the article:

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1) More than 400 crashes involve partially automated driver-assist systems.
2) Well over half these accidents involved a Tesla vehicle.
3) Crash data was collected from July 2020 to May 2022.
4) Car companies must report serious crashes within two days.
5) Only Tesla cars have real-time crash reporting technology.
6) Accident data helps to improve transportation police investigations.
7) The Alliance for Automotive Innovation is fully satisfied with the data being collected.
8) Fully autonomous vehicles have reported no serious injuries.

READING COMPREHENSION 2

Read the text below:

How Self-Driving Cars Got Stuck in the Slow Lane
Laurie Clarke, Guardian Newpaper
Sun 27 Mar 2022

From late 2020, Tesla expanded beta trials of its "Full Self-Driving" software (FSD) to about 60,000 Tesla owners, who must pass a safety test and pay $12,000 for the privilege. The customers will pilot the automated driver assistance technology, helping to refine it before a general release. With the beta **rollout**, Tesla is following the playbook of software companies, "where the idea is you get people to iron out the **kinks**", says Andrew Maynard, director of the Arizona State University risk innovation lab. "The difficulty being that when software crashes, you just reboot the computer. When a car crashes, it's a little bit more serious."

Placing **fledgling** technology into untrained testers' hands is an unorthodox approach for the autonomous vehicle (AV) industry. Other companies, such as Alphabet-owned Waymo, General Motors-backed Cruise and AV startup Aurora, use safety operators to test technology on predetermined routes. While the move has **bolstered** Tesla's populist credentials with fans, it has proved reputationally risky. Since putting its tech into the hands of the people, a stream of videos documenting reckless-looking FSD behaviour has racked up numerous views online.

"Number one is that this stuff is harder than manufacturers realised," says Matthew Avery, director of research at Thatcham Research. While about 80% of self-driving is relatively simple – making the car follow the line of the road, stick to a certain side, avoid crashing – the next 10% involves more difficult situations such as roundabouts and complex junctions. "The last 10% is really difficult," says Avery. "That's when you've got, you know, a cow standing in the middle of the road that doesn't want to move."

It's the last 20% that the AV industry is stuck on, especially the final 10%, which covers the **devilish** problem of "edge cases". These are rare and unusual events that occur on the road such as a ball bouncing across the street followed by a running child; complicated roadworks that require the car to mount the **kerb** to get past; a group of protesters wielding signs. Or that obstinate cow.

Self-driving cars rely on a combination of basic coded rules such as "always stop at a red light" and machine-learning software. The machine-learning algorithms **imbibe** masses of data in order to "learn" to drive proficiently. Because edge cases only rarely appear in such data, the car doesn't learn how to respond appropriately.

While humans are able to generalise from one scenario to the next, if a self-driving system appears to "master" a certain situation, it doesn't necessarily mean it will be able **to replicate** this under slightly different circumstances. It's a problem that so far has no answer. "It's a challenge to try to give AI systems common sense, because we don't even know how it works in ourselves," says Mitchell.

https://www.theguardian.com/technology/2022/mar/27/how-self-driving-cars-got-stuck-in-the-slow-lane

READING COMPREHENSION 2 QUESTIONS

Eight words, phrases or expressions in the text have been highlighted in bold and underlined. Circle the word/expression/definition that best fits each meaning in the given context. (Each question is worth **1 point, 8 points total**)

1	**rollout**	a) a retreat	b) a public unveiling	c) to struggle against	d) to turn out
2	**kink**	a) curved hair shape	b) muscular stiffness	c) flaw or imperfection	d) a simple line
3	**fledgling**	a) impressive	b) weak	c) emerging	d) advanced
4	**bolster**	a) give a boost to	b) cylinder pillow	c) to prop up	d) to halt
5	**devilish**	a) popular	b) extreme difficulty	c) fiendish	e) diabolical
6	**kerb**	a) sidewalk edge	b) a pathway	c) an enclosure	d) to restrain
7	**imbibe**	a) guzzle	b) assimilate	c) avoid	d) abstain
8	**replicate**	a) to repeat	b) to deviate from	c) to contrast	d) to understand

READING COMPREHENSION 3

Read the text below:

Driverless Cars Shouldn't Be a Race
August 11, 2022
Daily US NEWS

Companies developing computer-piloted car technology, including Tesla, the Chinese company Baidu, and Waymo, a sibling company of Google, are regularly described as being in a horse race to make self-driving vehicles ready for widespread use. Some U.S. policy organizations and elected officials talk about America's need to demonstrate "leadership" by beating China at autonomous technology.

There are risks to moving too slowly with a technology that could make people's lives better, but we shouldn't uncritically buy the narrative that a technology that will take many years to develop — and could have both profound benefits and fatal pitfalls — should be treated as a race. The danger is that an artificial sense of urgency or a zeal to "win" could create unnecessary safety risks, give companies permission to hog more of our personal information and prioritize corporations' self-interest at the expense of the public good.

So why does this narrative about self-driving cars exist? First, companies find it useful to be perceived by their employees, investors, business partners, regulators and the public as having the best shot at making safe, useful and lucrative computer-piloted transportation technology. Everyone wants to back a winner.

But winning a "race" in technology isn't always meaningful. Apple wasn't the first company to make a smartphone. Google didn't develop the first online search engine. Taiwan Semiconductor Manufacturing Company didn't produce the first advanced computer chip. They are technology superstars because they did it (arguably) best, not first.

Second, the "race" narrative feels like a cudgel to persuade the public or elected officials to move faster with rules and regulations, justify loose ones or expose people to unnecessary risks to "win."

Cars without drivers could eventually make our roads safer, but each of those incidents was a reminder of the threats that these companies pose as they work out the kinks in self-driving vehicles. Developing a streaming video app doesn't kill people.

"We are letting these companies set the rules," Cade Metz, a New York Times reporter who writes about autonomous vehicle technology, told me. Cade suggested a redefinition of the race narrative. Instead of trying to win at making driverless cars widespread, there could be a race to steer this technology in the public interest, he said.

Plus, putting this much focus on driverless cars also may crowd out alternative ideas for improving transportation. Perhaps the race metaphor we need is from Aesop's fable of the hare and the tortoise. Slowly, steadily, sensibly, with a keen awareness of the benefits and drawbacks — that is the way to win the self-driving car race. (But it's not a race.)

https://dailyusanews.org/driverless-cars-shouldnt-be-a-race/

COMPREHENSION 3 QUESTIONS

Please answer the following questions **in complete sentences**. You will be graded on the content and the quality of your English e.g. spelling, vocabulary, grammar and punctuation. **Use your own words**! Do not copy the text word for word!! (Each question is worth a set number of points, **8 points total**)

1) Name the two countries leading the development of computer piloted car technology. (1 point total; 0.5 each)

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2) This article uses the expression "*buy the narrative*." What do you think this expression means and explain why the author uses it? **Use your own words**. (3 points: 1 point for explaining the meaning, 2 points for your explanation)

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3) Give two reasons to justify why self-driving car technology is described as a "race." (2 points)

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4) What does Cade Metz suggest as an alternative? (1 point)

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5) What problem is "crowded out" because of focusing on driverless cars? (1 point)

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Reading Comprehension Total   /20

WRITING: ARGUMENTATIVE ESSAY (20 points total)

You will be graded according to the grading rubric below. Half points can be awarded.

Structure (6 points)	Content (8 points)	Language (6 points)
……. *Introduces the theme of essay (hook) 1pt.* ……. *Provides a clear organization (point-by-point or block pattern) 1.5 pts.* ……. *Introduces quotes and uses correct citation of sources 1.5 pts.* ……. *Uses correct overall structure (Introduction, body, conclusion) 2pt.*	……. *Provides clear thesis (__underlined__) 1.5pts.* ……. *Restates thesis in conclusion 0.5 pt.* ……. *Begins each paragraph with topic sentence 1pt.* ……. *Provides evidence of at least one opposing argument 1pt.* ……. *Refutes opposing arguments 1pt.* ……. *Cites at least <u>two</u> sources 1pt.* ……. *Demonstrates overall cohesion (transitions, relevancy, arguments, analysis, etc.) 2 pts.*	……. *Grammar 2pts.* ……. *Syntax 1.5pts.* ……. *Vocabulary 1.5pts.* ……. *Punctuation 1pt.*
____/6	____/8	____/6
Corrector's Comments:	**Corrector's Comments:**	**Corrector's Comments:**

WRITING: ARGUMENTATIVE ESSAY

Write an argumentative essay (using your own words) that answers the following question:

SHOULD THE PUBLIC KNOW WHEN AUTOMATED VEHICLES ARE ON THE ROADS?

You should use the articles from this exam to support your arguments but be sure to correctly quote, cite or paraphrase what you use. You will not be graded on the length, so please do not feel obliged to use all the pages available. **(20 points total)**

Remember to state your position (**the thesis statement**). *Underline your thesis statement*.

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Develop your arguments using reasons and examples (one reason per paragraph).

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Remember to use transitions, connections and linking words.

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Present a counter-argument which you may not (fully) adhere to.

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Conclude by alluding to the benefits for society if the reader adopts your position.

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Argumentative Essay Total   /20