Processo de Seleção de Mestrado, Edital PROPEM 02/2021, de 21 de maio de 2021.

Conforme edital PROPEM 02/2021 e de acordo com o Ato Administrativo COPEM 02/2021 de 21 de junho de 2021, tem-se a seguir o gabarito da prova de inglês.

FIRST TEXT

Flying car flies from one city to another

It is hard to keep up with technology these days. The latest example of science fiction becoming science fact is a flying car. For decades, we have watched movies about a future with flying cars. This week, journalists saw a real one in flight. A prototype flying AirCar completed a test flight between two cities in Slovakia. The car flew between a regional airport and an airport in the capital city Bratislava. The 90 km journey took thirty-five minutes to complete. AirCar is from a company called Klein Vision. A founder of the company said: "AirCar is no longer just a proof of concept." He added: "Flying at 2,500 meters at a speed of 185 km/h, it has turned science fiction into a reality."
AirCar is a road-legal car that transforms into an aircraft in less than three minutes. AirCar CEO Professor Stefan Klein flew and landed the vehicle on its recent test flight. After landing at Bratislava Airport, he pushed one button to transform the aircraft into a sports car. He then drove it into downtown Bratislava on the city's streets. He described the flight as "normal" and "very pleasant". His company is working on a new, more powerful model called AirCar Prototype 2. This will have a much more powerful engine that is capable of a cruising speed of 300 km/h and a range of 1,000 kilometers. The newer model will also be a four-seater as opposed to the two-seater that was recently tested.

1) Responda as perguntas marcando a alternativa CORRETA. (30 pontos)

A) What does the article say it is hard to keep up with these days? (3 pontos)

a) Flying cars
b) Sports teams
c) Science fiction
d) Technology
e) None of the alternatives

B) Where did people watch flying cars before the AirCar flew? (3 pontos)

a) On the Internet
b) In movies
c) In museums
d) In toy stores
e) None of the alternatives

C) Where did the AirCar take off from? (3 pontos)

a) The CEO's garden
b) A farm
c) A national highway
d) A capital airport
e) None of the alternatives

D) How long did the AirCar's journey take? (3 pontos)

a) 55 minutes
b) 25 minutes
c) 35 minutes
d) 45 minutes
e) None of the alternatives

E) How fast did the AirCar go? (3 pontos)

a) 158 km/h
b) 185 km/h
c) 300 km/h
d) 180 km/h
e) None of the alternatives

F) How long does it take for the AirCar to change from a car to an aircraft? (3 pontos)

a) Exactly 3 minutes
b) Just over 3 minutes
c) Less than 3 minutes
d) About 3 minutes
e) None of the alternatives

G) How many buttons did the CEO press to transform the AirCar? (3 pontos)

a) One
b) Two
c) Three
d) Four
e) None of the alternatives

H) Where in Bratislava did the CEO drive the AirCar to? (3 pontos)

a) A river
b) The entertainment district
c) Downtown
d) The government building

e) None of the alternatives

I) What is the name of a more powerful AirCar? (3 pontos)

a) Prototype X
b) Prototype Y
c) Prototype 20
d) Prototype 10
e) None of the alternatives

J) How many seats will the new AirCar have? (3 pontos)

a) One
b) Two
c) Three
d) Four
e) None of the alternatives

SECOND TEXT

Preview

Flying Cars for Green Transportation

Brandon R. Sutherland[1,*]

Growing urban populations, land space limitations, and high infrastructure development costs present a challenge for the future of ground-based transportation. Flying cars, no longer confined to the realm of fiction, are in active development today and will see commercial deployment throughout the next decade. Recently in *Nature Communications*, Kasliwal et al. reported an analysis of the potential for flying cars to reduce both the travel time and carbon footprint of personal travel.

Motor vehicles powered by internal combustion engines emerged in the late 1800s, sparking a personal mobility revolution. Fast-forward to the early 21st century and the entire globe is connected through vast route infrastructure traversed by a fleet of cars, trucks, trains, planes, and ships. Mass transportation enabled globalization of economies and brought indispensable quality-of-life benefits that support modern societal function. It was also proven to be a main driving force behind anthropogenic climate change and remains so today. Over 99% of all transportation in the U.S. is still powered by fossil fuels.[1] This sector alone accounts for over 28% of all greenhouse gas (GHG) emissions in the country, with similar trends found worldwide.[2]

Decarbonization of the transportation sector requires accelerated and incentivized adoption of low-carbon power sources and simultaneous technological progress in their efficiency-per-cost point. Emerging low-carbon distributed power sources include batteries,[3] hydrogen fuel cells,[4] and sustainable biofuels.[5] Each technology has its own strengths, market opportunities, and deployment challenges.

The transportation sector is not only working to decarbonize its power sources; it is also evolving toward new organizational paradigms. Automobile and software stakeholders, such as Lyft, Tesla, Amazon, and many others, are making large investments in autonomous driving. The opportunity for reducing GHG emissions on the road from utilizing smart autonomous vehicles is significant, with projections of up to 60% fuel savings for a fully automated car fleet in a model urban city.[6]

A growing proportion of society is living in highly urbanized environments. Population models predict that 68% of humans on Earth will be living in cities by 2050.[7] With growing urban populations, it will be insufficient to control congestion through intelligent automobile fleet management alone. A recent

[1]Joule, Cell Press, 50 Hampshire Street, 5th Floor, Cambridge, MA 02139, USA
*Correspondence: bsutherland@cell.com
https://doi.org/10.1016/j.joule.2019.04.013

2) De acordo com o texto "Flying Cars for Green Transportation", qual é a principal força motriz para a mudança climática? Justifique sua resposta (a resposta pode ser na língua portuguesa) (30 pontos)

O setor de transportes, o qual usa combustíveis fósseis (principalmente) e gera as emissões de gases de efeito estufa. A resposta está no primeiro parágrafo após o resumo grafado em azul.

"Mass transportation enabled globalization of economies and brought indispensable quality-of-life benefits that support modern societal function**. It was also proven to be a main driving force behind anthropogenic climate change and remains so today**. Over 99% of all transportation in the U.S. is still powered by fossil fuels. This sector alone accounts for over 28% of all greenhouse gas (GHG) emissions in the country, with similar trends found worldwide."

3) Traduza para a língua portuguesa a parte a seguir (40 pontos).

> ***The transportation sector is not only working to decarbonize its power sources; it is also evolving toward new organizational paradigms. Automobile and software stakeholders, such as Lyft, Tesla, Amazon, and many others, are making large investments in autonomous driving. The opportunity for reducing GHG emissions on the road from utilizing smart autonomous vehicles is significant, with projections of up to 60% fuel savings for a fully automated car fleet in a model urban city.***
>
> ***A growing proportion of society is living in highly urbanized environments. Population models predict that 68% of humans on Earth will be living in cities by 2050. With growing urban populations, it will be insufficient to control congestion through intelligent automobile fleet management alone.***

O setor de transporte não está apenas trabalhando para descarbonizar suas fontes de energia; também está evoluindo em direção a novos paradigmas organizacionais. Os *stakeholders* em automóveis e *softwares*, tais como a Lyft, a Tesla, a Amazon e muitos outros, estão fazendo grandes investimentos na direção autônoma. A oportunidade de reduzir as emissões de gases de efeito estufa (GEE) nas estradas com o uso de veículos autônomos inteligentes é significativa, com projeções de até 60% de economia de combustível para uma frota de automóveis totalmente automatizada em uma cidade urbana modelo.

Uma proporção crescente da sociedade vive em ambientes altamente urbanizados. Os modelos populacionais preveem que 68% dos humanos na Terra viverão em cidades até 2050. Com o crescimento da população urbana, será insuficiente controlar o congestionamento apenas por meio do gerenciamento inteligente da frota de automóveis.