REPUBLIQUE TUNISIENNE

Ministère de l'Enseignement Supérieur et de la Recherche Scientifique Concours Nationaux d'Entrée aux Cycles de Formation d'Ingénieurs Session 2020



الجهورية الونسية فلارة التغليم للعثل لغالي فلارة التغليم التغليم التغالية التغليم في التخديد التغليم التغليم التغليم التعاليم ال

المناظرات الوطنية للدخول

إلى مراحل تكوين المهندسين

دورة 2020

Concours Toutes Options Epreuve d'Anglais

Date: 22 Juillet 2020

Heure: 11 H

Durée: 2 H

Nb pages: 08

Barème: Part I: 30, Part II: 30, Part III: 20

IMPORTANT:

1- L'épreuve d'anglais comporte deux séries de feuilles :

- Les énoncés s'étalant sur 4 pages que les candidats sont appelés à garder

- Les feuilles réservées aux réponses (Answer sheet) s'étalant sur 4 pages, lesquelles

Doivent être rendues à la fin de l'épreuve aux professeurs surveillants

2- Il sera tenu compte de la présentation, (l'écriture au crayon n'étant pas permise)

Reading passage:

- 1- There is a technological juggernaut heading our way. It's called the Internet of Things (IoT). For the tech industry, it's the Next Big Thing, alongside big data, though in fact that pair are often just two sides of the same coin. The basic idea is that since computing devices are getting smaller and cheaper, and wireless network technology is becoming ubiquitous, it will soon be feasible to have trillions of tiny, networked computers embedded in everything. They can sense changes, turning things on and off, making decisions about whether to open a door or close a valve or order fresh supplies of milk, you name it, the computers communicating with one another and shipping data to server farms all over the place.
- 2- As ever with digital technology, there's an underlying rationality to lots of this. The IoT could make our lives easier and our societies more efficient. If parking bays could signal to nearby cars that they are empty, then the nightmarish task of finding a parking place in crowded cities would be eased. If every river in the UK could tweet its level every few minutes, then we could have advance warning of downstream floods in time to alert those living in their paths. And so on.
- 3- But that kind of networking infrastructure takes time to build, so the IoT boys have set their sights closer to home, which is why we are beginning to hear a lot about "smart" homes. On further examination, this turns out mostly to mean houses stuffed with networked kit.
- 4- "Because every home should be a smart home this Christmas," burbles an ad from Samsung, "we're treating you to some fantastic deals. Getting started is easy with SmartThings. Simply set up your SmartThings Hub and free app, add in your favourite products, and take control from another room -or another country. It's simple to set up, too, meaning you can start making your home smarter in no time". The smart things in question include sensors of various kinds, remotely controlled power outlets, a wireless hub and -of course- a smartphone app that enables you to turn on your lights (or see who's in your sitting room) when you're on a beach in Thailand.
- 5- And it's not just Samsung. Other big companies are getting in on the act. Google, for example, has bought Nest, an outfit that makes a "learning thermostat" that uses sensors and algorithms to learn about your energy usage and save you money. A study by Accenture found that 13% of homes already have one or more IoT devices and predicts that 69% will have an IoT device by 2019. Home-owners who place too much trust in such devices could easily wind up on the PleaseRobMe website. As with all such predictions, this one should be taken with a grain of salt. But suppose, for a moment, that it's accurate and that within a decade a large proportion of homes have become smart. What would be the implications?

- 6- To qualify as a smart home, a house would have to have multiple devices, most of which would be linked wirelessly to a hub that in turn communicates with the outside world. The devices will monitor the activities and rhythms of the household so that they can optimise energy consumption and so on. That means data flowing from devices to other devices via the hub and perhaps also to external servers, suppliers etc. So a smart home monitors- or, you could say, spies on its owner(s). And that could have serious implications for privacy.
- 7- Further, a smart home is, by definition, a networked one. And that, in turn, has consequences. One is increased complexity and corresponding user bafflement if anything goes wrong. Another is insecurity, since nothing connected to the internet can be regarded as totally secure. And this is deeply ironic, since we know that one of the reasons why people want smart homes with all the associated monitoring enabled by the technology is to increase their security.
- 8- So-called smart meters provide an intrusive case study of this paradox in action. At the moment, most of our electricity and gas meters are dumb, analogue devices: they record your consumption and someone comes round periodically to take a reading. This is inefficient and wasteful and so there's a strong push under way to fit homes with smart meters. These are purely digital devices that are networked so that the utility company can bill you without having to send a man to your door.
- 9- The smart meter has advantages for consumers. Since the price of electricity varies on an hourly basis, the meter enables them to decide when they wish to consume it. They can, for example, run their washing machines and dishwashers in the middle of the night, when demand and therefore the price per unit is low. And for the utility company, the meter has significant benefits, such as being able remotely to disconnect consumers' supply if they don't pay the bill, instead of going to all the legal and logistical palaver currently involved in cutting off a subscriber.
- 10- But there is an obvious fly in this soothing ointment. For if the utility company can remotely disconnect you, then, given that there is no such thing as a completely secure networked device, so could a hacker in Novosibirsk. In fact, he could conceivably disconnect every house in East Anglia. It's the old, old story: technology giveth and technology taketh away.

John Naughton

The Guardian Sat 2 Dec 2017
READING COMPREHENSION (30 marks)

Part ONE READING COMPREHENSION (30 marks)

- I- Choose the best option to be the title of the article: (1mark)
- 1- Should we be worried if our homes are smarter than we are?
- 2- Should we be delighted if a technological juggernaut is heading our way?
- 3- Should smart homes be our future?
- II- With reference to the passage, complete the chart by focusing on the benefits the IoT could provide in the following fields to facilitate citizen's life: (3marks)

The field	The benefits
- Traffic	
- Civil Protection	
- Energy	

III- Answer the following questions: (7marks)

- 1- Which technological components are mainly needed to make homes smart? (4marks)
- 2- What are the drawbacks people may face in case they opt for a smart home? (3marks)

IV- Complete with words or phrases with reference to the text: (4marks)

- 1- Both ... (a)... as well as the utility company can benefit from the smart meters' installation in homes. This enables the latter not only to ...(b)... but also ...(c)...
- 2- Homes that are fit with networked computers become smart, yet there's no guarantee that these houses are ...(a).... and that they wouldn't be broken into.

V- Say whether the following statements are true or false and justify from the text: (4marks)

- 1- The digital technology is so flourishing that it is expected to have almost two thirds of users sharing IoT devices in their homes.
- 2- The price of electricity is uniform.

VI- Select the right option: (3marks)

- 1- Could easily wind up on the "please RobMe website" (§5- line 5) means:
- a- Could be accused of robbery.
- b- Could find yourself in an unexpected and unpleasant situation.
- c- Could become hooked on a website.
- 2- Should be taken "with a grain of salt" (§5- line 6) means:
- a- Accept with reservation.
- b- Accept with admiration.
- c- Accept blindly.
- 3- There's an obvious fly in this soothing ointment (§10- line 1) means:
- a- There's a minor irritation that spoils enjoyment.
- b- There's a flaw that can be corrected quickly.
- c- There's a grave implication that is irreversible.

VII- Explain the following using your own words: (2marks)

1- two sides of the same coin (§1)

2- technology giveth and technology taketh away (§10)

VIII- What do the underlined words in the text refer to? (3marks)

1- that pair (§1)

2- the act (§5)

3- so (§10)

IX- Find words that have approximately the same meaning as the following: (3marks)

1- fundamental (§2)

2- company (§5)

3- precise (§5)

Part TWO LANGUAGE (30 marks)

I- Put the bracketed words in the right tense or form (10marks)

Wildfires are a feature of life in Australia, which is not surprising when you consider that it is the [1] (dry) inhabited continent in the world. Major fires often [2] (occur) at this time of year, but they have not been as [3] (destroy) as we [4] (see) right now. There [5] (be) many massive wildfire outbreaks since records [6] (begin) in 1851, and more than 800 people [7] (know) to have died. Throughout the 20th century these conflagrations [8] (grow) much worse. During this latest crisis, police in South Wales and Queensland [9] (charge) a number of people, not more than 100, with [10] (deliberate) starting fires.

II- Complete with the appropriate word: (The first two letters the word begins with and a synonym of the word are provided to help you) (10 marks)

Uber's service is built around their smartphone app used by both drivers and [1] cu... (=clients), which gives them an [2] op... (=chance) to collect GPS, gyroscope and accelerometer data during Uber [3] jo... (=trips). Data is [4] co... (=continuously) collected during trips and sent to Uber's servers for processing and long-term storage. Uber sends drivers comparative reports on their driving habits by analysing the trip data for rapid acceleration, harsh braking, speeding, or [5] ri... (=dangerous) cornering, but also stores data to find long-term driver- or location- [6] pa... (=specific) trends. The [7] ob... (=goal) of using telematics for Uber is to [8] be...(=improve) driver safety and [9] re... (=decrease) car crashes. At the same time, they can [10] ga... (=collect) important and useful information on roads' conditions and driver reactions.

III- Express differently starting as given on the answer sheet (keep the same meaning): (10marks)

- 1- I have never witnessed such a devastating hurricane.
- 2- It isn't necessary for you to remind me all the time to watch my language.
- 3- Why didn't you teach them how to use this machine?
- 4- They could hardly wait to move into their new house.
- 5- I'm sorry, I'd prefer not to go sailing now.
- 6- The president will not be re-elected if he doesn't reduce the deficit.
- 7- They claimed the road had been closed for repair.
- 8- "What did they steal?", asked the police officer.
- 9- The government didn't respond quickly to the outbreak that's why the virus affected so many.
- 10- Despite the U.N. Environment continuous support to African governments, they are unable to tackle the issue of electronic waste.

Part THREE WRITING (20 marks)

I- Re-arrange to obtain a coherent sentence (3marks)

a/ and killed more than 350.000 worldwide, b/ which has infected at least 5 million people

c/ strain of the coronavirus disease.

d/ where the outbreak started.

e/ bats are known carriers of the latest f/ mostly in China

II- Find the FOUR mistakes in the following sentence and correct them on the answer sheet: (2marks)

Airports cross the world are deploying screened measures to isolate passengers with symptoms related by the disease to contain it's spread.

III- Essay (15marks) (DO NOT EXCEED 15 LINES)

With the lockdown (confinement) taking place in many countries of the world, various positive impacts have been experienced. To what extent do you agree or disagree with this opinion? Give reasons for your answer and include any relevant examples from your own knowledge or experience.