REPUBLIQUE TUNISIENNE
Ministère de l'Enseignement Supérieur
Concours nationaux d'entrée aux cycles de formation d'ingénieurs
Session 2005

الجمهورية التونسية
وزارة التعليم العالي
المناظرات الوطنية للدخول إلى مراحل تكوين المهندسين
دورة 2005

Concours Mathématiques et Physique, Physique et Chimie, Biologie et Géologie & Technologie
Epreuve d'anglais

Institut Préparatoire des études ingénieurs de Sfax BIBLIOTHEQUE

Date : Lundi 13 juin 2005 Heure : 15 H Durée : 2 H Nbre de pages : 08

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

INSTITUT PREPARATOIRE BIBLIOTHEQUE SFAX

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 sheets) 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. **Only the hardier forms of river life thrive in the salt-tainted tidal water of the River Thames. It's dirty, brown and brackish, but to Tony Rachwal, it's a reservoir of limitless potential. Next month his company, Thames Water, hopes to win permission to build Northern Europe's first large-scale desalination plant, which removes salt (among other things) from water, on the banks of the river a few miles east of central London. The idea is to turn these wretched waters where river mingles with ocean into sparkling drinking water for 900,000 London residents. " We have this huge resource on our doorstep" says Rachwal, the R&D director. "And now we have the technology to use it."**

2. **Why does rainy London need a $360 million plant that taps ocean water? London, it seems, isn't quite rainy enough - per capita, it's drier than Madrid or Istanbul. As the city expands, water usage is rising, and shortages threaten. Mexico City, which has a million more residents than it did 20 years ago, has a similar problem: the city is sinking into the ground as it drains its underground aquifers. For their part, Americans are flocking to sunbelt communities and building golf courses and swimming pools. Climate change is only expected to make things worse.**

3. **The oceans, on the other hand, hold 95 percent of the world's water, and almost half of the global population lives within 100 kilometers of the shoreline. "There just aren't enough reserves of water", says Pierre-François Moizan of Dégrémont, which runs many big desalination projects, "and seawater is always available."**

4. **Of course, it's been possible to treat seawater on an industrial scale for 40 years. The problem with many of the older plants, though, is that they work by distilling the water and leaving behind the salt residue. This process requires copious amounts of heat**

energy and is too expensive for all but the richest and thirstiest Middle East nations. Growing shortages have created incentives to develop cheaper technologies. Today's favored method, "reverse osmosis," involves pumping salt water through polymer strips. Microscopic pores let water pass but trap the salt.

5. **Competition, economies of scale and better polymers have halved the cost of producing a glass of salt-free water in the last 10 years. And prices are still falling. New plants are beginning to spring up in the most unlikely of places, from damp England to Florida, Spain and Singapore. Forecasters reckon China's capacity could rise fourfold by 2015. By building plants close to power stations, operators can reap big gains in efficiency. A new desalination plant in Tampa Bay, Florida, the largest of its kind in the Western hemisphere, takes coolant water from a nearby power station and turns it into 25 million gallons of drinking water a day. Global capacity for desalination is expected to double in the next decade, say Global Water Intelligence, a British-based research company.**

6. **Water policies is also driving adoption of the technology. Spain last year ditched ambitious plants to divert the River Ebro to drought-prone plains of the south and opted instead to build several new desalination plants. In many countries, the need for a dependable flow of fresh water has become an urgent political issue.**

7. **Seawater alone isn't going to solve the world's water problems, however. Desalination is still expensive, and it can't do much for, say, Central Asia or other inland regions. A cheaper alternative would be to recycle more wastewater - filtering water from the toilet back into the tap. Although the technology is inexpensive, most people aren't keen on the idea. What's needed, say experts, is to persuade consumers to regard water as a scarce commodity in need of conservation. For the moment, filtering water is about the best solution technology has been able to provide.**

Newsweek, March 7, 2005

PART I: Comprehension Questions (30 marks)

I – Complete the table on the answer sheet with the appropriate information from the text.

II – State whether the following are TRUE or FALSE. Justify your answers.

a) The older desalination method is affordable by both rich and poor countries alike
b) The need for more drinking water in London has led to the search for other means to process river and ocean waters.

III – Mention three main reasons for the shortages of water reserves world-wide.

IV – What makes sea water desalination a possible solution to water shortages?

V – What are the prospects for desalination plants throughout the world ?

VI – Complete the statement with information from the text :

A glass of salt-free water costs half as much as it used to thanks to .....

VII – Explain the following statement:

" New plants are beginning to spring up in the most unlikely of places."

VIII – The writer seems to be skeptical about the use of desalination as a solution to water shortages. Mention two of the arguments he provides against desalination .

IX – Choose the appropriate statement which best expresses the main idea of the text:

a) Recycling wastewater
b) Filtering water from the toilet back into the tap
c) Desalinating for fresh water
d) New ways of removing salt from water

X – Find in the passage words which have the closest meaning to:

1. mix (§ 1)
2. moving in large numbers (§2)
3. obtain (§ 5)
4. rare (§ 7)

XI – What do the following words refer to :

a) it (§2)
b) which (§3)
c) its kind (§5)
d) the idea (§ 7)

PART II: Language (30 marks)

1. Choose the right alternative :

It is astounding to compare the medical technology of today with [1] ***(this, that, those, one)*** of 1990. [2] (***Then, Ago, Lately, Before,)*** doctors came to one's house and determined one's illness, using [3] ***(a few, less, a little, much***) instruments and their senses.
Today, people live 30 years [4] ***(long, longest, longer, as long)*** on average than their great grandparents did at the beginning of the 20th century. Many factors in public health and medical discovery contributed [5] ***(for, to, at, in)*** this, but in no other area [6]***(during, since, before, for)*** the industrial revolution has engineering started from such a limited base and produced such an invaluable, complex and startling number of innovations.
[7] ***(Despite, However, Although, But),*** many advances were underway early in the century, health technologies really began to blossom in the last half, when engineering became [8] ***(increasing, increased, increase, increasingly)*** interdisciplinary, and the human body was more fully recognized as a complex system of electrical fields, fluids and biomechanics and motion- ideal [9] ***(for, to, about, in)*** an engineer's approach to many of its problems. There are currently some 32,000 bioengineers [10] (**work, working, worked, workers**) in various areas of health technology.

2. Supply the correct tense and verb form :

Over many years, hundreds of pesticides and other chemicals [1] (**run**) into rivers and accumulated in the soil. This, at present, [2] (**threaten**) the animal species that feed on plants and other animals. Furthermore, industrial gases [3] (**trap**) in the atmosphere [4] (**pollute**) the air and cause global warming, [5] (**change**) the environment of species.
Habitat destruction endangers the greatest number of species. Because people [6] (**need**) food and shelter, the environments of many species [7] (**eliminate**) or reduced. Currently, people, in many places, [8] (**turn**) forests into farmland. Since the early 1990's, some 12 million hectares of tropical forests [9] (**clear**) every year. At this rate within 40 years all remaining tropical forests [10] (**disappear**).

3. Choose the right form of the word between brackets

Many scientists now say that global climate change is underway due [1] ...(**primary**)... to the burning of fossil fuels and the resulting build-up of carbon dioxide and other "greenhouse gases" in the atmosphere. Climate changes [2] ...(**threat**)... human health and well-being because they cause more severe storms and droughts, rising sea levels, increased spread of [3] ...(**infection**)... diseases, and other adverse effects.
As the debate unfolds over a stronger international treaty to curtail greenhouse gas [4] ...(**emit**)..., there is much that individual people can do in their homes and workplaces to reduce their contribution to global [5] ...(**warm**)... The good news is that many of these actions can save money as well as protect our environment

4. Rewrite the following sentences keeping the same meaning. Begin each sentence as indicated on the answer sheet:

1. It is advisable for most firms to adopt stricter environmental rules
2. You'll have to study hard if you want to become an engineer
3. Human cloning is being experimented with although opponents criticize it fiercely
4. Sami was not hurt because he was wearing a seat belt
5. People say Chinese food is the best in the world.

PART III: Translation & Writing (20 marks)

A - Translate the following sentence into English : (5 marks)

De nouvelles technologies sont en train d'être développées par des experts en matière de conservation et de gestion de ressources hydrauliques même dans les pays qui sont rarement touchés par la sécheresse.

B - Write about the following topic in about 15 lines : (15 marks)

In this cyber age, the increasing use of Information Technology has an impact on everything, including homes. Describe what your ideal home would look like, using the following prompts (location, architecture, indoor appliances and furniture, services provided, etc.)

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Signature des surveillants

Session :.....**Concours :**.....

Ne rien écrire ici

Epreuve de :.....

Nom :.....**Prénoms :**.....

Total des doubles feuilles remises
.....1.....

Institution d'origine :.....

Identifiant : | | | | | | | | **Série :** | | |

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Total des doubles feuilles remises
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Session ....Juin 2005.....**Concours** : Toutes options.....

Epreuve de : **ANGLAIS (ANSWER SHEET)**.....

PART I :

I-

desalination method	process	advantages	drawbacks
Previous one		XXXXXXXXXX	- -
New one			XXXXXXXXXXXX

NE RIEN ECRIRE DANS CETTE COLONNE

II – a).....

b) .....

III –

- .....
- .....
- .....

IV – - .....

- .....

V –

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Ne rien écrire ici

NE RIEN ECRIRE
DANS CETTE COLONNE

VI -

A glass of salt-free water costs half as much as it used to thanks to .....

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VII –

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VIII

- .....
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- .....
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IX –

- : .....

X -

1. .....
2. .....
3. .....
4. .....

XI –

a) .....

b) .....

c) .....

d) .....

Ne rien écrire ici

NE RIEN ECRIRE DANS CETTE COLONNE

PART II :

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4. 1 .Most firms.....

2. You won't.....

3. Despite .....

4 . If Sami had not been wearing his seat belt, he .....

5. Chinese food .....

Ne rien écrire ici

NE RIEN ECRIRE DANS CETTE COLONNE

PART III :

A – Translation:

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B – **Writing:**