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Epreuve de : .....

Nom : ..... Prénoms : .....

Institution d'origine : .....

Identifiant :

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Série :

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surveillants

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

Concours Nationaux d'Entrée aux Cycles de Formation d'Ingénieurs

Session : ... Juin 2010 ..... Concours : Toutes options .....

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

**PART I : (30 points)**

**I – (2.5 pts)**

Brand name	Arboform
Date of invention	1900s
Inventors	Norbert Eisenreich's Group
Purpose	Replace plastic
Materials used in manufacturing	Lignin, natural fibers and wax

- II – (2 points)**
- recyclability
  - biodegradability
  - renewability
  - non-toxicity

**III – (1.5 pts)**

*It has better thermal and mechanical properties than wood and plastic. In addition, it is of superior quality and strength*

**IV – (2 points)**

*The factors that led scientists to search for alternatives to plastics are: pollution, increased CO2 levels causing global warming, depletion of oil reserves and growing public environmental awareness.*

**V- (4 points)**

- a) High pressure hydrolysis is applied on thermoplastic so that low sulfur content and water-proofing capabilities are achieved.
- b) It is possible for Arboform to be recycled, reshaped or molded even if it is heated and cooled several times.
- c) Despite promising research, the production of bioplastics before Arboform had been developed could not be an option because their manufacturing processes were found unsuited to domestic use as they had high sulfur content.
- d) CO2 emissions in the atmosphere have risen to an unprecedented level. In fact, their volume has increased seven times

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

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## VI – (4 points)

- a) [ False ] *Arboform is not made from the felling of trees but rather from the waste products of the paper industry.*
- b) [ False ] *Conventional wood tends to split at right angles when subjected to strain. It is not the case for Arboform.*

## VII – (3 points)

*Lignin is blended with natural fibers such as flax, hemp or jute*



*Wax is added to the mixture*



*This mixture is conditioned under high pressure*



*Thermoplastic material liquid wood is obtained*

## VIII – (3 points)

*The amount of CO<sub>2</sub> emission released by Arboform on incineration remains unchanged. Arboform releases only that amount of CO<sub>2</sub> that the plant had originally fixed from the environment during its growth.*

## IX – (4 points)

- a) \_\_\_\_\_ *an eco-friendly alternative* \_\_\_\_\_
- b) \_\_\_\_\_ *natural oil reserves* \_\_\_\_\_
- c) \_\_\_\_\_ *Eisenreich's group* \_\_\_\_\_
- d) \_\_\_\_\_ *the plant* \_\_\_\_\_

## X- (4 points)

1. \_\_\_\_\_ *depletion* \_\_\_\_\_
2. \_\_\_\_\_ *off late* \_\_\_\_\_
3. \_\_\_\_\_ *discarded* \_\_\_\_\_
4. \_\_\_\_\_ *eco-friendly* \_\_\_\_\_

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## PART II : (30 points)

### 1. (10 points)

1	<i>can't</i>
2	<i>why</i>
3	<i>Such</i>
4	<i>In addition</i>
5	<i>against</i>

6	<i>While</i>
7	<i>playing</i>
8	<i>However</i>
9	<i>a</i>
10	<i>Therefore</i>

### 2. (10 points)

1	<i>used to be</i>
2	<i>have found</i>
3	<i>be measured</i>
4	<i>gave</i>
5	<i>have become</i>

6	<i>will be</i>
7	<i>will achieve</i>
8	<i>play</i>
9	<i>raising</i>
10	<i>are attributing</i>

### 3. (5 points)

1	<i>networked</i>
2	<i>severity</i>

3	<i>increasingly</i>
4	<i>reliant</i>

5	<i>strengthen</i>
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### 4. (5 points)

- No reliable evidence to prove that computer games contribute to long-term violence or anti-social behaviour has been found
- A new nanotube-based imaging system can now take sharper and faster pictures.
- So little did I know about astronomy that the lecture was difficult for me to follow.
- Without governmental support researchers would not have been able to discover effective remedies  
*For a number of diseases.*
- When shipping goods, you should use appropriate packaging

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**PART III : (20 points)**

**A – Translation: (5 points)**

*Industrialists are busy developing manufacturing techniques and processes of bioplastic products which would not use raw materials derived from petroleum. Thus, Tecnar, a German company, has just launched a material named Arboform. The latter is made directly from natural wood.*

**B – Writing: (15 points)**

**[ No standard answer; the marking scheme of this part will be discussed and agreed upon on the first day of marking]**

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