

Epreu

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Institution d'origine :

Identifiant :

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Série :

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

Session : ...Juin 2009.....Concours : Toutes options.....

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

Total des doubles  
feuilles remises

.....1.....

PART I :

I - C - Opportunities offered by the convergence of life sciences with engineering and physical sciences \_

II -

	Period	Focal interest	Consequences
First revolution	1950s	Elucidation of DNA and subsequent discoveries in molecular and cellular biology	1. Development of recombinant DNA technology 2. The launching of biotechnology industry
Second revolution	Mid-1950s	Explosion of data from genomics and proteomics	Acceleration of life science innovation
Third revolution	21 <sup>st</sup> century	Convergence of the life sciences with engineering and physical sciences	_New discoveries and applications in areas ranging from biomedicine to environmental science to energy technology_

III - Scientific discoveries and breakthroughs are likely to be made within the current century

provided that \_ educational research funding strategies are adapted \_

in order to \_ take advantage of the possibilities emerging from the convergence of life science with the physical sciences and engineering.\_

1 mark

4 marks

3 marks

NE RIEN ECRIRE  
DANS CETTE COLONNE



2 marks

2 marks

3 marks

2 marks

2 marks

4 marks

4 marks

4 marks

IV - a) [ TRUE ] \_\_\_\_ Transport of cancer-fighting agents to tumor cells is selective. Thus, injury to healthy tissue is minimized

[ TRUE ] \_ The number of Ph.Ds awarded by US universities in this field went up from 2 in 1996 To 525 in 2006

V - 1. Demands for analyzing increasingly large data sets in genomics\_

2. \_ understanding the complex network of molecular interaction in cells\_

3. \_ increasing resolution and accuracy in measuring and manipulating molecular and cellular events\_

VI - \_ It is integrated and multidisciplinary\_

VII - b) it has grown more reliant on other fields\_

VIII - 1. \_ Science and engineering students should get a broad and more integrated education

2. \_ More effective ways should be found to evaluate and fund interdisciplinary research

3. \_ The way in which grants are awarded and administered should be changed\_

4. \_ The public and the authorities should be convinced that multidisciplinary research is a vital investment\_

IX - a) the first and second revolutions\_

b) \_\_\_\_ Relationships between biologists, mathematicians, engineers and physical scientists

c) \_\_\_\_ M.I.T.'s new Koch Institute for Integrative Cancer Research\_

d) \_\_\_\_ Convergence of life sciences with engineering and physical sciences

X- 1. \_\_\_\_ brought about\_

2. \_\_\_\_ accuracy\_

3. \_\_\_\_ soared

4. \_\_\_\_ above all

✕

## PART II :

1.

1	what
2	around
3	ø
4	even though
5	as well as

6	what's more
7	Less
8	May
9	Because
10	unlike

2.

1	is getting
2	have witnessed
3	leaves
4	is /are
5	creating

6	was tested
7	accounts
8	Poses
9	will stay
10	Falls

3.

1	controversial
2	fertilization

3	embryonic
4	physicists

5	Threaten
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- 4.
1. No significant results have been achieved to secure sustainable economic growth in sub-Saharan Africa
  2. Unless we use a widely-proven method, our results will not be credible
  3. Had renewable sources of energy been sufficiently developed, there would not have been an energy crisis
  4. Many years ago, people used to read (much) more than they do now
  5. In addition to being fully automated, our new assembly line is cost-effective

### A – Translation:

Over the last few years, a greater convergence of the different branches of science and technology has begun to take shape/ has emerged. This approach may/ might deeply alter our relationship with the world. Thus, more and more innovative applications will appear, ushering in a new scientific and technological revolution with far-reaching consequences on the environment, health and life in society.

**B – Writing:** (No standard answer)

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.