

DEVOIR DE FIN DE SEMESTRE N°2

- 1- The advance at a laboratory in China edges scientists closer to a future in which they could create large numbers of genetically identical monkeys to serve as models for human diseases and other conditions. This could help researchers unravel complex questions, including how environmental factors may fuel common human cancers.
- 2- Primate research ethics could, however, limit such research. "It's a cost-benefit analysis," says Kevin Sinclair, a developmental biologist at the University of Nottingham. "If you have a population of nonhuman primates that are genetically identical, that's a really, powerful model to study human disease, underlying mechanisms and potential cures. But it has to be done on a case-by-case basis to justify doing that." Many countries, including the U.S., have strict guidelines on primate research due to ethical concerns about experimenting on our close genetic relatives.
- 3 - Scientists at the Chinese Academy of Sciences' Institute of Neuroscience, in Shanghai, published a report on their two primate successes. The cloning technique they used, called somatic cell nuclear transfer (SCNT), involves swapping the nucleus of a donor cell into a fertilized egg that has been purged of its own chromosomes. The egg will then contain an exact copy of the donor's genome, and if it is implanted into a surrogate mother, the eventual offspring will be a clone. More than 20 other species, including pigs and dogs, had already been successfully cloned using SCNT. And numerous studies of animals produced by this method indicate they are as healthy as their non-cloned cousins.
- 4- Making this process work in primates has been tough. When researchers previously tried using the "Dolly" approach on monkeys it produced fetuses—but no pregnancy that lasted beyond 80 days. The main obstacle, the Institute of Neuroscience researchers wrote, was likely that transferred nuclei were not properly programmed to support embryonic development. So this time the Chinese team deployed two critical enzymes that removed genes' epigenetic memory of being somatic cells (cells that make up tissues and organs). This extra step allowed development to proceed, says stem cell expert Alan Trounson. The success rate was still extremely low. But as scientists adjust their methods they could create dozens of clones in the near future, he notes.
- 5- Researchers have managed to clone nonhuman primates in the past couple of decades using other techniques, including a similar nuclear transfer method that relies on embryonic stem cells instead of somatic cells. But using SCNT is a major advance because it would likely be easier to use and reproduce in large numbers. It could also be more successfully coupled with CRISPR gene-editing techniques for future research on specific diseases or genetic mutations.
- 6- This approach to cloning could eventually help save endangered primates, Sinclair says. In situations where habitat destruction has left only a small number of primates, he adds, researchers could obtain somatic cells from body tissue and freeze it for storage in gene banks. But this would require further scientific progress, because the recent Chinese SCNT work was successful using fetal cells—not adult cells, which can be more difficult to reprogram.

7- Aspects of monkey SCNT will also need to be improved before the technology can be used to produce primates for research, experts caution. "From a scientific standpoint the advances here are significant. But from a practical, immediate utilization perspective there are still some technical issues that exist," says Jon Hennebold, a researcher in the Oregon National Primate Research Center. "The pregnancy rate and the live birth rate were not at a level that would allow this to be done on some wide scale. You would also have to have expertise in assisted reproductive technologies, reproductive physiology—and a large cohort of donors. And all those things are limiting with this current technology."

Scientific American

By Dina Fine Maron on January 24, 2018.

PART ONE: COMPREHENSION QUESTIONS: (30 pts)

I/ Select the two statements which best summarize the text:

- 1) Chinese scientists intend to extend their research to human cloning using SCNT technique.
- 2) The first primate models have been produced using the Dolly method.
- 3) The manipulation of genetic traits marks the beginning of a new era for biomedical research.
- 4) The development used to clone monkeys will help investigate the mechanisms behind human diseases.

II/ Answer the following questions:

- 1) What is the major breakthrough in the Chinese laboratory?
- 2) What are the purposes of the achievement?

III/ Indicate whether the following statements are True or False. Justify with details from the text.

- 1) The success with monkeys could bring up new ethical debates.
- 2) Many cases of cloned animals using SCNT method are healthier than non-cloned cousins.
- 3) Combining SCNT with CRISPR gene-editing techniques could create genetically engineered primates to study human genetic disorders

IV/ Mention the different steps leading to the formation of a clone.

V/ Complete the sentences on the answer sheets with information from the text.

VI/ Pick out sentences and phrases showing that using the Dolly method in cloning primates was initially inefficient and imperfect.

VII/ Which six adjectives best describe the reproductive method similar to Dolly?

effective / hard / harmful / important / impressive / ideal / customizable / useful

VIII/ State the limitations of the current cloning technique.

IX / Find in the text words having the same meaning as the following items:

- 1) reveal (§1)
- 2) used (§4)
- 3) ultimately (§6)

X/ What do the underlined items in the text refer to?

- 1) in which (§1)
- 2) he (§4)
- 3) that (§5)

PART TWO: LANGUAGE (30 pts)

TASK ONE: Put the bracketed words in the correct tense or form: (10 pts)

People living in income poverty often suffer a broad range of disadvantages that (1) **(summarize)** in the concept of social exclusion. In 1984, the European Economic Community adopted an (2) **(expand)** definition of poverty that informed the idea of social exclusion: "For the purposes of this Decision 'the poor' should (3) **(take)** to mean persons whose resources are so limited as to exclude them from the minimum (4) **(accept)** way of life in the Member States in which they live." Scholars (5) **(long / struggle)** to produce a precise definition of social exclusion. In 2002, reducing social exclusion (6) **(become)** integral to the policy goals of the European Union. Although many components of social exclusion may be affected by increased income alone, striving (7) **(reduce)** social exclusion leads to a much (8) **(broad)** range of policy strategies (9) **(address)** the cultural and social conditions linked to poverty, as well as individuals' perceptions of inclusion. For example, governments must address ethnic, gender and racial bases of social exclusion that go (10) **(good)** beyond income.

TASK TWO: Complete with the synonym of the bracketed words. (The first two letters are given to you) :(10 pts)

Homeschooling, (1) **co...** (=widespread) among white Americans, is showing an increase among African-American kids, as well. African Americans now (2) **in...** (=comprise) about 10 percent of all homeschooled children in this fastest-growing (3) **ki...** (=form) of education. (4) **Ho...** (=Nevertheless), the reasons for black kids to be homeschooled may not be the same as for white kids. Black parents homeschool their children due to white racism. This may come as a surprise since, for many, we live in a (5) **pe...** (=epoch) of alleged color blindness and post-racialism, (6) **ch ...** (=marked) by the declining significance of race and racism. Racism is far from being a thing of the past. In fact, implicit institutional racism and individual racism still persist and are (7) **ma...** (=basically) responsible for the persistence of (8) **pr...** (=deep) racial disparities and inequalities in many social (9) **fi...** (=realms). Schools, of course, are no exception, which helps one understand why racism is such a (10) **st...** (=potent) drive for black homeschoolers.

TASK THREE: Express the following sentences differently beginning as indicated on the answer sheets : (10 pts)

- 1) As soon as she finished one project, she started working on the next.
- 2) "I haven't decided where I will spend my next holiday." Said Serra.
- 3) Many people think that landing on the moon was a fake.
- 4) You have to submit the report right now.
- 5) Many viruses, fungi and bacteria cause plant diseases.
- 6) Perhaps she phoned me yesterday while I was out.
- 7) If the deposit is not paid the seller can rescind the agreement.
- 8) I am in debt, so I cannot quit my job.
- 9) She bought an expensive ring. It was worth that price.
- 10) When I was a child, I enjoyed collecting stamps but now I don't.

PART THREE : WRITING TASKS (20 pts)

TASK ONE: Find and correct the mistakes in the following sentences. Correct them in the table on the answer sheets: (2.5pts)

- 1) Globalization aims to expand operations business on a worldwide level.
- 2) Diversification of resources is a business strategy that increases the vareity of products and services.
- 3) Globalization provides a net benefit to individual economies round the world.
- 4) The general public tends to assume that risks associated to globalization outweigh its benefits.
- 5) It is clear that slavery is the outrageous reality in Libya we have ever witnessed.


TASK TWO: Reorder the scrambled sentence parts to get a meaningful paragraph: (2.5pts)

- a) from recruiting doctors trained abroad.
- b) A study by Canadian scientists
- c) due to doctors' emigration,
- d) found that South Africa and Zimbabwe suffer the worst economic losses
- e) while some developed countries benefit the most

TASK THREE: Essay (15pts)

Child labor is a serious problem in the developing countries.
What should be done to combat it?

Develop this statement in a 15- line essay.

INSTITUT PREPARATOIRE AUX ETUDES D'INGENIEUR DE SFAX		A.U. : 2017/2018 Niveau : 2ème année Epreuve : Anglais Durée : 2 heures Nom:..... Prénom:..... Groupe:.....N°/Place:..... Matricule:.....Salle:.....
---	---	---

DEVOIR DE FIN DE SEMESTRE N°2

(ANSWER SHEETS)

PART ONE: COMPREHENSION QUESTIONS: (30pts)

I/ The statements: (2pts)

- a)
- b)

II / Answers: (4pts)

- 1).....
- 2) a)
- b).....
- c)

III/ True or False Statements: (4.5pts)

- 1) (.....).....
- 2) (.....).....
- 3) (.....).....

IV/ The steps: (1.5pts)

- 1).....
- 2).....
- 3).....

V/ Sentence Completion: (3.5pts)

- 1) Although the SCNT technique has been successfully used to clone.....
 including similar work on primates
- 2) In case there is a threat of habitat devastation, researchers resort to freeze
 in.....for future use in order to.....

NE RIEN ECRIRE ICI

VI/ The sentences and phrases: (4pts)

- 1).....
- 2).....
- 3).....
- 4).....

VII/ The six adjectives: (3pts)

- | | |
|----------|----------|
| 1) | 4)..... |
| 2) | 5)..... |
| 3) | 6) |

VIII/ The limitations of the current cloning technique. (1.5pts)

- 1).....
- 2).....
- 3).....

IX / Vocabulary Items: (3pts)

- 1)
- 2)
- 3)

X/ References: (3pts)

- 1)
- 2)
- 3)

NE RIEN ECRIRE ICI

LANGUAGE (30 pts)

TASK ONE: Put the bracketed words in the correct form or tense: (10 pts)

1		6	
2		7	
3		8	
4		9	
5		10	

TASK TWO: Complete with the appropriate words: (10 pts)

1		6	
2		7	
3		8	
4		9	
5		10	

TASK THREE Express differently starting as mentioned below: (10 pts)

- 1) No sooner.....
- 2) Serra said that.....
- 3) Landing on the moon.....
- 4) It is high time you.....
- 5) Many viruses, fungi and bacteria are.....diseases.
- 6) She might.....
- 7) Provided that
- 8) If.....
- 9) The ring was worth.....
- 10) I used

NE RIEN ECRIRE ICI

PART THREE: WRITING TASKS (20 pts)

TASK ONE: Mistake correction : (2.5pts)

	Mistake	Correction		Mistake	Correction
1			4		
2			5		
3					

TASK TWO: Reordering : (2.5pts)

1+.....	2+.....	3+.....	4+.....	5+.....
---------	---------	---------	---------	---------

TASK THREE: Essay: (15pts)

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