We have provided a Cloning Reading reading passage. Read carefully and answer all the questions(1-13). Review your answers with our **Cloning Reading Answers with location.**

Cloning

The ethics of human cloning has become a great issue over the past few years. The advocates for both sides of the issue have many reasons to clone or not to clone. A recent poll has shown the differences in opinions with half as many women as men approving of the process. Many people find it strange to see such a clear difference between men and women with twenty-six percent of men favoring cloning.

So, what is cloning? It has been defined as "the production of genetically identical organisms via somatic cell nuclear transfer". You take an egg and remove its nucleus, which contains the DNA/genes. Then you take the DNA from an adult cell and insert it into the egg, either by fusing the adult cell with the enucleated egg or by a sophisticated nuclear transfer. You then stimulate the reconstructed egg electrically or chemically and try to make it start to divide and become an embryo. You then use the same process to implant the egg into a surrogate mother that you would use with artificial insemination. What cloning does is it copies the DNA/genes of the person and creates a genetic duplicate. The person will not be a Xerox copy. He or she will grow up in a different environment than the clone, with different experiences and different opportunities. Genetics does not wholly define a person and their personality.

In February 1997, when embryologist Ian Wilmut and his colleagues at Roslin Institute in Scotland could clone a lamb named Dolly, the world was introduced to a new possibility and will never be the same again. Before this, cloning was thought to be impossible, but now there is living proof that the technology and knowledge to clone animals exist. Questions began to arise within governments and scientific organizations and they began to respond. Are humans next? Is it possible to use this procedure to clone humans also? Would anyone actually try? What can we learn if we clone humans? How will this affect the world? These are only a few of the questions that have surfaced and need answering. A whole new concept in ethics was created when the birth of Dolly was announced.

When the cells used for cloning are stem cells, we are talking about cells that are pluripotential. This means that they have the capacity to develop into any of the numerous differentiated cell types that make up the body. Early embryonic cells are pluripotent and a limited number of stem cells are also found in adults, in bone marrow for instance. There is an important distinction to be made between therapeutic cloning and reproductive cloning. Reproductive cloning would be exactly like Dolly; it would involve the creation of a cloned embryo which would then be implanted into a womb to develop to term and the birth of a clone. On the other hand, therapeutic cloning involves the use of pluripotent cells to repair damaged tissue, such as those found after strokes, Parkinson's disease, and spinal cord injuries.

There is evidence for the effectiveness of therapeutic cloning as shown by work involving the introduction of stem cells into the brain of patients suffering from brain diseases when the cells which have been added differentiate to form nerve cells which can in turn then lead to the recovery of the lost function. In the US, fetal human cells have been similarly used though recent reports indicate that the results so far are disappointing. However, apart from the ethical problems associated with the use of fetal cells in this way,

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there are simply not enough cells available for it to be an effective treatment since it needs the cells from three fetuses to treat one patient.

After Dolly, governments began to take control and make laws before anything drastic could ever happen. Several ethics committees were asked to decide whether scientists should be allowed to try to clone humans. In the United States, the Bioethics Advisory Commission recommended a five-year moratorium on cloning a child through somatic cell nuclear transfer. In the United Kingdom, the Human Fertilisation and Embryology Authority and the Human Genetics Advisory Commission have approved human cloning for therapeutic purposes, but not to clone children. Many organizations have come out and stated their opinions also. Amongst all these ethical defining, many governments are ignoring many people. People are speaking out about what they want to be done.

Historically, we find that many a great medical breakthrough, now rightly seen as a blessing, was in its own time condemned by bio-conservative moralists. Such was the case with anesthesia during surgery and childbirth. People argued that it was unnatural and that it would weaken our moral fiber. Such was also the case with heart transplantations and with in vitro fertilization. It was said children created by IVF would be dehumanized and would suffer grave psychological harm. Today, of course, anesthesia is taken for granted; heart transplantation is seen as one of medicine's glories and the public approval rate of IVF is up from 15% in the early seventies to over 70% today.

Questions

Questions 1-6

Reading Passage has 7 paragraphs (A-G).

Which paragraphs offer information on the following ideas?

NB One paragraph is used more than once and two are not used at all.

1. Different types of cloning - ____

2. Protective legislation - ____

3. Similar situations - ____

4. A survey on attitudes towards cloning - ____

5. Scientific reasons why cloning is currently not viable for medical cures - ____

6. Illness examples that cloning could help treat - ____

Questions 7-10

Choose the appropriate letters A-D and write them in boxes 7–10 on your answer sheet.

7. Which bar chart most accurately describes attitudes indicated in the text towards cloning by men and women?

A. Over 80% against men, under 80% against women
B. Under 80% against men, over 80% against women
C. Under 60% against men, under 80% against women
D. Under 80% against men, over 40% against women

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8. Which of the following is a feature of cloning used for possible medical treatment?

A. A genetic duplicate is born through the use of a surrogate mother.

B. The creation and implantation of an embryo.

C. Implantation of differentiated pluripotent cells.

D. Genetic mutation of pluripotent cells.

9. Which of the following is NOT a feature of cloning?

A. Reproduction of a genetic copy of the subject cloned.

B. Reproduction of exact personality characteristics of the subject cloned.

C. Reproduction of the pluripotential stem cells of the subject cloned.

D. Reproduction of the DNA of the subject cloned.

10. Which of the following is NOT an example from the text of previous medical technologies that were initially mistrusted by people?

A. Test tube babies.

B. Anesthesia.

C. Antiseptics.

D. Heart replacements.

Questions 11-13

Using **NO MORE THAN THREE WORDS** from Reading Passage, answer the following questions.

11. In what part of an egg is found the DNA used for cloning?

12. In what country has medical treatment through cloning been shown to be of limited value?

13. According to the text, what body wants to wait before cloning a human?

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