

Name: _____

Date: _____

Complete the passage by filling in the blank with the most appropriate sentence.

1. Gene therapy is a medical technology that aims to produce a therapeutic effect by manipulating gene expression or by altering the biological properties of living cells. The first attempt at modifying human DNA was made in 1980 by Martin Cline, but the first successful nuclear gene transfer in humans, approved by the National Institutes of Health, was carried out in May 1989. ---- Between 1989 and December 2018 more than 2,900 clinical trials were conducted, over half of them still at phase I.

- A)** Ethical debate about the technology has focused above all on the possibility of changes that could be passed on to future generations without their consent.
- B)** The first therapeutic use of gene transfer, and the first direct insertion of human DNA into the nuclear genome, came in a trial begun by French Anderson in September 1990.
- C)** The technique is today used mainly to treat inherited disorders of the retina and of the blood, and several such treatments have now been licensed for use.
- D)** No further work of this kind was attempted anywhere until regulators finally lifted the moratorium that had been imposed almost a decade beforehand.
- E)** Approval by a national regulator came only in 2003, when a product called Gendicine reached the market in China ahead of any Western equivalent.

2. Vaccine hesitancy is a delay in accepting vaccines, or their outright refusal, despite their availability and the evidence supporting their effectiveness. The term also covers those who accept vaccines but remain uncertain about them, and those who use some vaccines but not others. It is a complex and context-specific phenomenon, varying across time, across place and across the particular vaccine in question, and it can be shaped by a lack of scientific understanding of how vaccines are made and how they work. ---- The World Health Organization therefore lists vaccine hesitancy among the top ten threats to global health.

- A)** Fear of needles and a general distrust of public authorities are among the psychological factors that researchers working on the subject record most frequently.
- B)** These campaigns are usually organised by a small number of well-funded groups that operate across several countries at once and share their material freely.
- C)** Most public health bodies have now come to accept that the risks of vaccination outweigh its benefits for adults who are otherwise in good health.
- D)** Although adverse effects are occasionally observed, the scientific consensus that vaccines are safe and effective is overwhelming, and hesitancy often results in outbreaks of, and deaths from, preventable disease.
- E)** Rates of refusal have been measured most carefully in high-income countries, where registries make it possible to follow individual patients over many years.