

Recombinant DNA Technology Quiz Answer Key PDF

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Which application of recombinant DNA technology involves the production of insulin?

- A. Agriculture
- B. Medicine ✓**
- C. Environmental science
- D. Forensic science

What are the key components required for PCR? (Select all that apply)

- A. DNA template ✓**
- B. RNA primer
- C. DNA polymerase ✓**
- D. Nucleotides ✓**

Which enzyme is responsible for cutting DNA at specific sequences?

- A. DNA polymerase
- B. RNA polymerase
- C. Restriction enzyme ✓**
- D. DNA ligase

What is the primary purpose of recombinant DNA technology?

- A. To create synthetic life forms
- B. To combine DNA from different sources ✓**
- C. To sequence genomes
- D. To destroy harmful genes

Which of the following are vectors used in recombinant DNA technology? (Select all that apply)

- A. Plasmids ✓**
- B. Bacteriophages ✓**
- C. Ribosomes
- D. Cosmids ✓**

What are the potential benefits of genetically modified crops? (Select all that apply)

- A. Increased crop yield ✓**
- B. Enhanced nutritional content ✓**
- C. Reduced pesticide use ✓**
- D. Higher water consumption

What is the role of DNA ligase in recombinant DNA technology?

- A. To cut DNA
- B. To amplify DNA
- C. To join DNA fragments ✓**
- D. To degrade DNA

Which of the following is commonly used as a vector in genetic engineering?

- A. Ribosome
- B. Plasmid ✓**
- C. mitochondria
- D. Golgi apparatus

Which agency is primarily responsible for regulating genetically modified organisms in the United States?

- A. NASA
- B. FDA ✓**
- C. EPA
- D. CDC

Which of the following are applications of recombinant DNA technology? (Select all that apply)

- A. Development of vaccines ✓**

B. Creation of GMOs ✓

C. Climate change mitigation

D. Gene therapy ✓

What are some ethical concerns related to recombinant DNA technology? (Select all that apply)

A. Impact on biodiversity ✓

B. Accessibility of technology ✓

C. Human cloning ✓

D. Economic benefits

What is the first step in the process of gene cloning?

A. DNA sequencing

B. Transformation

C. Isolation of the gene of interest ✓

D. Protein synthesis

Which historical milestones are associated with recombinant DNA technology? (Select all that apply)

A. Discovery of restriction enzymes ✓

B. Development of CRISPR technology

C. Creation of the first recombinant DNA molecule ✓

D. Invention of the electron microscope

What is a major ethical concern associated with recombinant DNA technology?

A. Cost of research

B. Complexity of techniques

C. Genetic modification of organisms ✓

D. Availability of equipment