

## Synthetic Biology Quiz PDF

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**Which tool is commonly used for precise genome editing in synthetic biology?**

- PCR
- Gel electrophoresis
- CRISPR-Cas9
- Western blotting

**What are the potential risks and benefits of using synthetic biology for environmental applications?**

**Which areas benefit from synthetic biology applications in medicine? (Select all that apply)**

- Vaccine Development
- Crop Yield Improvement
- Drug Development
- Gene Therapy

**Which applications of synthetic biology are related to environmental concerns? (Select all that apply)**

- Bioremediation
- Biological Sensors
- Cloning pets
- Biofuels

**Which principle involves simplifying complex biological processes into basic components?**

- Modularity
- Abstraction
- Standardization
- Optimization

**Which organization promotes education and innovation in synthetic biology through competitions?**

- World Health Organization (WHO)
- International Genetically Engineered Machine (iGEM)
- United Nations (UN)
- National Institutes of Health (NIH)

**Which of the following is a major application of synthetic biology in medicine?**

- Developing new antibiotics
- Gene therapy
- Cloning extinct species
- Creating new animal breeds

**What is the primary concern regarding the safety of synthetic biology?**

- Cost of research
- Environmental containment
- Lack of interest
- Limited resources

**What are the basic principles of synthetic biology? (Select all that apply)**

- Modularity
- Complexity
- Abstraction
- Standardization

**How does synthetic biology integrate principles from engineering and computer science?**

**Reflect on the ethical considerations of synthetic biology and how they might be addressed.**

**What are some challenges faced by synthetic biology? (Select all that apply)**

- Regulation
- Public Perception
- Unlimited funding
- Safety Concerns

**Which of the following are tools and techniques used in synthetic biology? (Select all that apply)**

- DNA Sequencing
- CRISPR-Cas9
- Photosynthesis
- Genetic Engineering

**What is the concept of using standardized parts in synthetic biology known as?**

- Modularity
- Abstraction
- Standardization
- Integration

**Describe how synthetic biology can contribute to sustainable agriculture.**

**Discuss the role of CRISPR-Cas9 in synthetic biology and its impact on genetic engineering.**

**What is a common application of synthetic biology in agriculture?**

- Creating new animal species
- Developing organic fertilizers
- Producing genetically modified organisms (GMOs)
- Enhancing soil fertility

**Explain the concept of modularity in synthetic biology and its significance.**

**What are some ethical issues associated with synthetic biology? (Select all that apply)**

- Biosecurity
- Intellectual Property
- Lack of biodiversity
- Equity

**What is the primary goal of synthetic biology?**

- To study natural ecosystems
- To create biological systems with novel functions
- To conserve endangered species
- To map the human genome