ENDAGAME: Pretest & Posttest (With Choices and Answer Key)

This document contains the pretest and posttest for ENDAGAME, covering DNA basics to genetic engineering. Both tests are multiple choice with answer keys included. The posttest is designed with rephrased questions to focus on deeper understanding.

Pretest (20 Questions)

1. What does DNA stand for?

A. Deoxyribonucleic Acid

B. Dynamic Nucleic Acid

C. Double Nucleic Arrangement

D. Deoxy Nitrogen Atom

2. Which three parts make up a DNA nucleotide?

A. Phosphate, sulfur, lipid

B. Sugar, phosphate, nitrogen base

C. Glucose, RNA, ribose

D. Carbon, oxygen, nitrogen

3. Which base pairs with Adenine in DNA?

A. Guanine

B. Cytosine

C. Thymine

D. Uracil

4. What type of bonds hold DNA strands together?

A. Hydrogen bonds

B. Ionic bonds

C. Peptide bonds

D. Covalent bonds

5. Key difference between DNA and RNA?

A. DNA has uracil, RNA has thymine

B. DNA has deoxyribose, RNA has ribose

C. DNA is single-stranded, RNA is double-stranded

D. DNA only found in prokaryotes

6. Where is most DNA stored in eukaryotic cells?

A. Ribosomes

B. Cytoplasm

C. Nucleus

D. Mitochondria

7. A gene is best described as?

A. A protein made of amino acids

B. Segment of DNA coding for a protein

C. Entire DNA sequence

D. A group of chromosomes

8. What is a codon?

A. 3-base sequence on mRNA

B. Enzyme in DNA replication

C. Protein-coding region

D. Sequence of tRNA bases

9. Transcription is the process where?

A. RNA is translated into protein

B. Proteins are folded

C. DNA is copied into RNA

D. mRNA is converted to DNA

10. Where does translation occur?

A. Nucleus

B. Ribosomes

C. Mitochondria

D. Golgi apparatus

11. A mutation is?

A. Normal DNA replication

B. Correct DNA repair

C. Removal of a gene

D. Change in DNA sequence

12. Combining DNA from different sources is called?

A. Recombinant DNA

B. Replication

C. Duplication

D. Insertion

13. A plasmid is?

A. Protein structure

B. Linear DNA in eukaryotes

C. Small circular DNA in bacteria

D. DNA mutation

14. Which statement about CRISPR is accurate?

A. Randomly cuts DNA

B. Cuts DNA at specific sequences

C. Deletes chromosomes

D. Only found in humans

15. Which is a GMO application?

A. Developing vaccines

B. Fossil fuel production

C. Pest-resistant crops

D. Solar panel efficiency

16. Ethical concern about GMOs?

A. Cost of seeds

B. Increased food supply

C. Environmental impact and health risks

D. Improved nutrition

17. If an allele is dominant, it?

A. Masks the recessive allele

B. Is weaker than recessive

C. Mutates into recessive

D. Cannot be inherited

18. Phenotype refers to?

A. Genetic code

B. Observable traits

C. Hidden alleles

D. DNA sequence

19. A transgenic organism means?

A. Has no mutations

B. Cannot reproduce

C. Contains genes from another species

D. Made of RNA only

20. What is a promoter’s role in gene expression?

A. Ends transcription

B. Translates RNA

C. Replicates DNA

D. Starts transcription

Pretest Answer Key

1. What does DNA stand for? - A
2. Which three parts make up a DNA nucleotide? - B
3. Which base pairs with Adenine in DNA? - C
4. What type of bonds hold DNA strands together? - A
5. Key difference between DNA and RNA? - B
6. Where is most DNA stored in eukaryotic cells? - C
7. A gene is best described as? - B
8. What is a codon? - A
9. Transcription is the process where? - C
10. Where does translation occur? - B
11. A mutation is? - D
12. Combining DNA from different sources is called? - A
13. A plasmid is? - C
14. Which statement about CRISPR is accurate? - B
15. Which is a GMO application? - C
16. Ethical concern about GMOs? - C
17. If an allele is dominant, it? - A
18. Phenotype refers to? - B
19. A transgenic organism means? - C
20. What is a promoter’s role in gene expression? - D

Posttest (20 Questions)

1. DNA abbreviation stands for?

A. Deoxyribonucleic Acid

B. Dynamic Nucleic Acid

C. Double Nitrogen Arrangement

D. Deoxy Nucleic Atom

2. Components of a nucleotide?

A. Protein, lipid, base

B. Sugar, phosphate, base

C. Starch, carbon, nitrogen

D. RNA, ribose, uracil

3. Adenine pairs with which base?

A. Guanine

B. Cytosine

C. Thymine

D. Uracil

4. What keeps DNA bases together?

A. Hydrogen bonds

B. Ionic bonds

C. Peptide bonds

D. Disulfide bonds

5. Which sugar is in DNA?

A. Glucose

B. Deoxyribose

C. Ribose

D. Lactose

6. Where is DNA located in eukaryotes?

A. Ribosomes

B. Cytoplasm

C. Nucleus

D. Mitochondria

7. Which best defines a gene?

A. Protein chain

B. DNA segment coding for a protein

C. Chromosome set

D. mRNA transcript

8. A sequence of 3 mRNA bases is called?

A. Codon

B. Triplet protein

C. Base pair

D. Exon

9. Process that makes RNA from DNA?

A. Replication

B. Translation

C. Transcription

D. Mutation

10. Ribosomes are responsible for?

A. DNA synthesis

B. Translation of proteins

C. Transcription

D. Mutation repair

11. Mutation best described as?

A. DNA duplication

B. Corrected DNA sequence

C. Change in DNA sequence

D. Stable gene

12. Recombinant DNA means?

A. DNA from two sources combined

B. Copying RNA

C. Mutation in sequence

D. Chromosome deletion

13. Plasmid is best described as?

A. Enzyme for DNA cutting

B. Linear DNA

C. Circular bacterial DNA

D. RNA molecule

14. Conceptual fact about CRISPR?

A. Random DNA editing

B. Precise DNA cutting tool

C. Protein folding

D. RNA splicing

15. Beneficial use of GMO technology?

A. Making vitamin-enriched rice

B. Producing fossil fuels

C. Building structures

D. Mining metals

16. Concern about GMO crops?

A. Higher yields

B. Environmental/ethical impact

C. Increased nutrition

D. Lower costs

17. Dominant allele means?

A. Masks effect of recessive allele

B. Always mutates

C. Cannot be inherited

D. Same as phenotype

18. Which describes a phenotype?

A. DNA sequence

B. Physical/observable traits

C. Genotype only

D. RNA structure

19. A transgenic organism has?

A. Extra chromosomes

B. Genes from other species

C. Only dominant alleles

D. No phenotype

20. A promoter in genetics is?

A. Sequence that ends transcription

B. DNA sequence that starts transcription

C. RNA splicing site

D. Protein folding region

Posttest Answer Key

1. DNA abbreviation stands for? - A
2. Components of a nucleotide? - B
3. Adenine pairs with which base? - C

4. What keeps DNA bases together? - A
5. Which sugar is in DNA? - B
6. Where is DNA located in eukaryotes? - C
7. Which best defines a gene? - B
8. A sequence of 3 mRNA bases is called? - A
9. Process that makes RNA from DNA? - C
10. Ribosomes are responsible for? - B
11. Mutation best described as? - C
12. Recombinant DNA means? - A
13. Plasmid is best described as? - C
14. Conceptual fact about CRISPR? - B
15. Beneficial use of GMO technology? - A
16. Concern about GMO crops? - B
17. Dominant allele means? - A
18. Which describes a phenotype? - B
19. A transgenic organism has? - B
20. A promoter in genetics is? - B