MISSISSIPPI DEPARTMENT OF EDUCATION

Ensuring a bright future for every child

Mississippi Academic Assessment Program (MAAP)

Biology

PRACTICE TEST

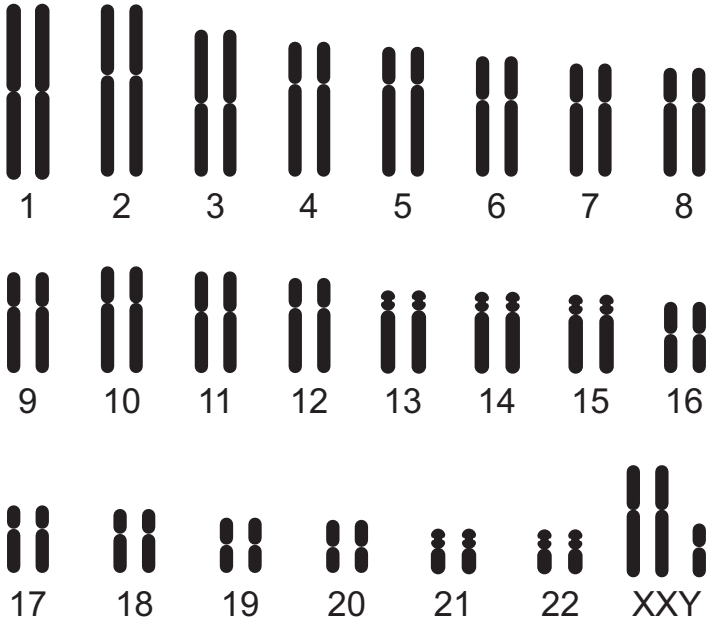
The Biology Practice Test is a useful tool for Mississippi educators to use in preparing students for the format of the Mississippi Academic Assessment Program for Science. The items were written and aligned to the 2018 Mississippi College- and Career-Readiness Standards for Science. **This document contains 25 biology items.**

Use the scenario to answer the next two questions.

Klinefelter Syndrome

Klinefelter syndrome is a chromosome condition in males. This condition affects the hormone testosterone, which directs male development. The karyotype below represents a male with Klinefelter syndrome.

Klinefelter Karyotype



1. Circle or underline **one** option from **each** of the three sections below to complete a claim about the cause of Klinefelter syndrome.

Claim (select one)

It is the result of a mutation during mitosis.

It is the result of a mutation during meiosis.

Evidence (select one)

There is a decrease in the number of sex chromosomes in the affected male.

There is a decrease in the number of nonsex chromosomes in the affected male.

There is an increase in the number of sex chromosomes in the affected male.

There is an increase in the number of nonsex chromosomes in the affected male.

Reasoning (select one)

Mutations during meiosis affect sex chromosomes.

Mutations during meiosis affect nonsex chromosomes.

Mutations during mitosis affect sex chromosomes.

Mutations during mitosis affect nonsex chromosomes.

2. Which characteristic of the karyotype helps identify the male shown as having Klinefelter syndrome?

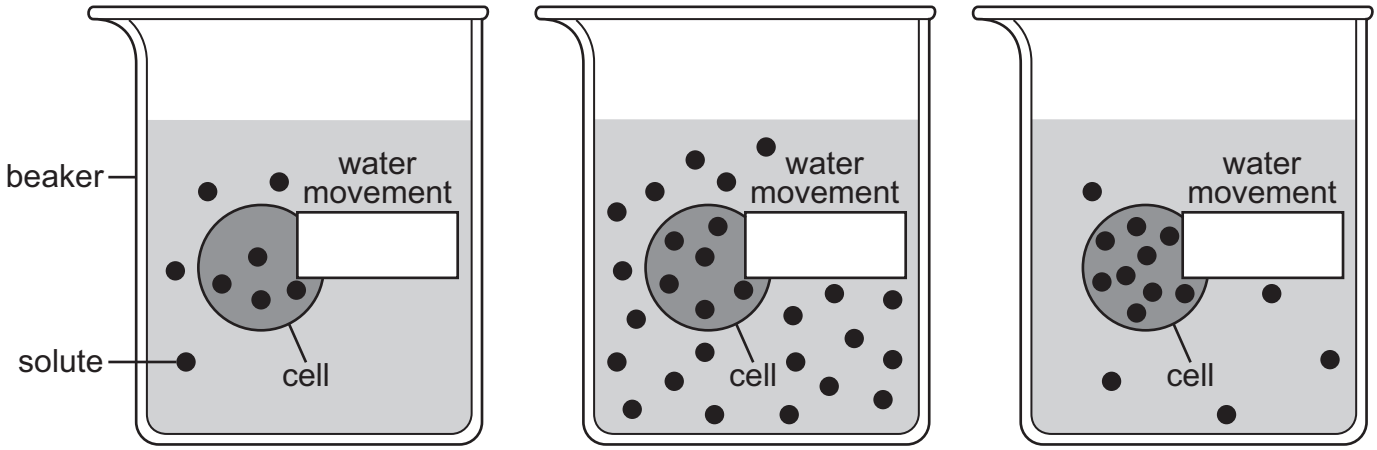
A. the length of the sex chromosomes

B. the total number of sex chromosomes

C. the length of the nonsex chromosomes

D. the total number of nonsex chromosomes

3. The models below are set up to represent how a cell responds to imbalances in solute concentration. Draw a line from the correct arrow set to the appropriate beaker to show how water will move into or out of the cell in each beaker for the solute conditions shown.



4. A 350-acre area in central Mississippi called Old Cove has mature hardwood trees, birds, reptiles, amphibians, and many plant species. Students wrote three descriptions related to the Old Cove environment.

Descriptions Written by Students

1. all the wild turkeys living in Old Cove
2. an individual woodland salamander living in Old Cove
3. all the living organisms in Old Cove

Mark one box in each row of the table below to match the correct level of organization represented by each description.

	biome	**community**	**organism**	**population**
Description 1				
Description 2				
Description 3				

5. In pea plants, smooth seeds (S) are dominant to wrinkled seeds (s). A parent pea plant with smooth seeds (SS) is crossed with a parent pea plant with wrinkled seeds (ss).

Identify the predicted phenotypic and genotypic ratios for the offspring of this cross. Write the correct number in each box to show the ratios.

Phenotypic Ratio

☐ : ☐

smooth seeds : wrinkled seeds

Genotypic Ratio

☐ : ☐ : ☐

SS : Ss : ss

0

1

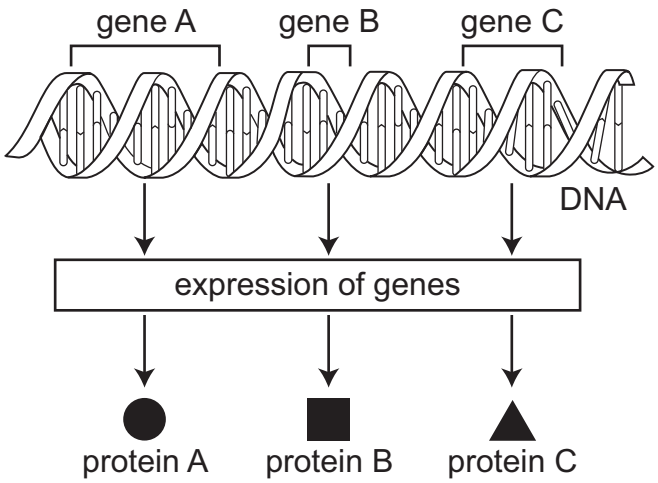
2

3

4

6. The diagram below shows a piece of DNA and the proteins made from this DNA.

Relationship between Genetic Information in DNA and Proteins



Which characteristic of the DNA helps it function as a set of instructions for making these specific proteins?

A. the sugar-phosphate backbone of the DNA

B. the three-dimensional structure of the DNA

C. the way in which the nucleotides are ordered on the DNA

D. the hydrogen bonds that hold together the nucleotides on the DNA

7. The mitotic spindle is a part of a cell that allows for the movement of sister chromatids to opposite poles of the cell during the later stages of mitosis. Which problem would **most likely** occur if the mitotic spindle stopped functioning in a cell?

A. Newly produced cells would be twice their normal size.

B. Newly produced cells would have too few or too many chromosomes.

C. Newly produced cells would fail to form and pinch off from each other.

D. Newly produced cells would contain new chromosomes not found in the parent cells.

8. The diagram below shows a mutation that has been observed in a mouse genome.

Mutation in a Mouse Genome

Wild-Type Genomic DNA Sequence: GTG CCA GCG G**G**C GGT CAC

Mutated Genomic DNA Sequence: GTG CCA GCC G**T**C GGT CAC

The chart below shows an mRNA codon chart.

mRNA Codon Chart

Second Position

First Position	U	C	A	G	Third Position
U	UUU Phe UUC UUA Leu UUG	UCU UCC UCA UCG Ser	UAU Tyr UAC UAA stop UAG stop	UGU Cys UGC UGA stop UGG Trp	**U** **C** **A** **G**
C	CUU CUC CUA CUG Leu	CCU CCC CCA CCG Pro	CAU His CAC CAA CAG Gln	CGU CGC CGA CGG Arg	**U** **C** **A** **G**
A	AUU AUC AUA Ile AUG Met	ACU ACC ACA ACG Thr	AAU Asn AAC AAA Lys AAG	AGU Ser AGC AGA Arg AGG	**U** **C** **A** **G**
G	GUU GUC GUA GUG Val	GCU GCC GCA GCG Ala	GAU Asp GAC GAA Glu GAG	GGU GGC GGA GGG Gly	**U** **C** **A** **G**

Using the mRNA codon chart, what is the **most likely** effect of this mutation on the resulting protein produced?

A. An early stop codon will be coded for, and the protein produced will be shortened.

B. The same amino acid will be coded for, and the protein produced will remain unchanged.

C. A Gly amino acid will replace a Val amino acid, and a change in the protein produced will occur.

D. A Gln amino acid will replace a Pro amino acid, and a change in the protein produced will occur.

9. The chart below provides information about four organisms that live in a Mississippi pond ecosystem.

Organisms in a Mississippi Pond Ecosystem

Organisms	Description
stoneflies	insects that swarm near the water's surface to feed
sunfish	small fish that swim in the pond water
algae	green organisms that float on the top of the water
herons	birds that fly and swoop down to the water's surface to feed on fish

Which model **best** shows the flow of energy between these organisms in the pond ecosystem?

A. sunlight → algae → stoneflies → sunfish → herons

B. herons → sunfish → stoneflies → algae → sunlight

C. sunlight → algae → herons → sunfish → stoneflies

D. herons → algae → sunfish → stoneflies → sunlight

10. The coral snake uses venom to help kill prey. Coral snakes have a coloration pattern that includes red, yellow, and black bands that circle its body. Many animals see the color pattern and avoid the snake because they know it is venomous. Some other snake species that are not venomous have similar coloration. As a result, many animals also avoid these snakes, mistaking them for coral snakes.

Which type of relationship is shown by these nonvenomous snake species?

A. mimicry

B. mutualism

C. parasitism

D. competition

Use the following scenario to answer the next two questions.

Proteins

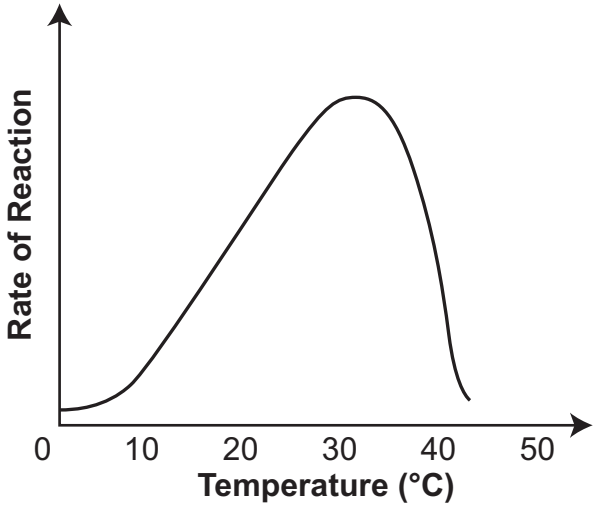
Proteins are organic compounds that play vital roles in living organisms. A single cell can contain thousands of proteins, each with a unique function. Although protein structure and function vary greatly, all proteins have similar building blocks.

Characteristics of Proteins

Role	Examples	Function
structure	keratin, collagen	build different structures in skin and hair
transport	hemoglobin	carry substances in blood
enzymes	amylase, lipase	control chemical activity of cells
hormones	insulin	coordinate activity of systems
defense	antibodies	provide protection from foreign substances

Enzymes are a type of protein made by all living cells. They can affect cellular reactions. Each enzyme works best in its optimum environmental conditions.

Enzyme Activity at Different Temperatures



11. Collagen, lipase, and hemoglobin have totally different functions but are classified as proteins. Select the **two** characteristics that these proteins have in common.

A. They contain nitrogen.

B. They are made of disaccharides.

C. They are composed of amino acids.

D. They form by using fatty acids and glycerin.

E. They contain a base, sugar, and a phosphate group.

12. Based on the graph, what temperature range would be considered the optimum temperature for this enzyme?

A. between 0°C and 5°C

B. between 18°C and 28°C

C. between 28°C and 38°C

D. between 40°C and 50°C

13. Write the characteristics in the boxes in the chart to compare living and nonliving things.

Characteristics of Living and Nonliving Things

Living Characteristics	Nonliving Characteristics

Characteristics:

cannot grow

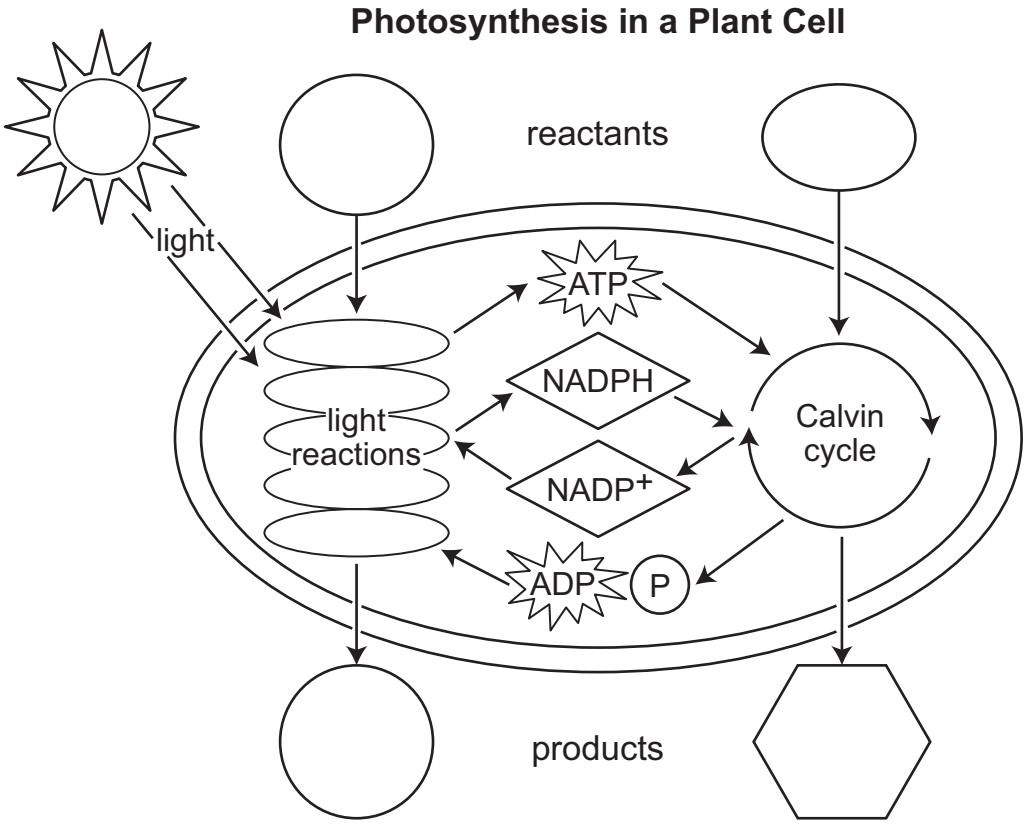
can reproduce

can respond to stimuli

can release energy for work

exists without taking in energy

14. Write the labels in the shapes next to “reactants” and “products” in the diagram to show the major reactants and products of photosynthesis in a plant cell.



Labels:

O_2

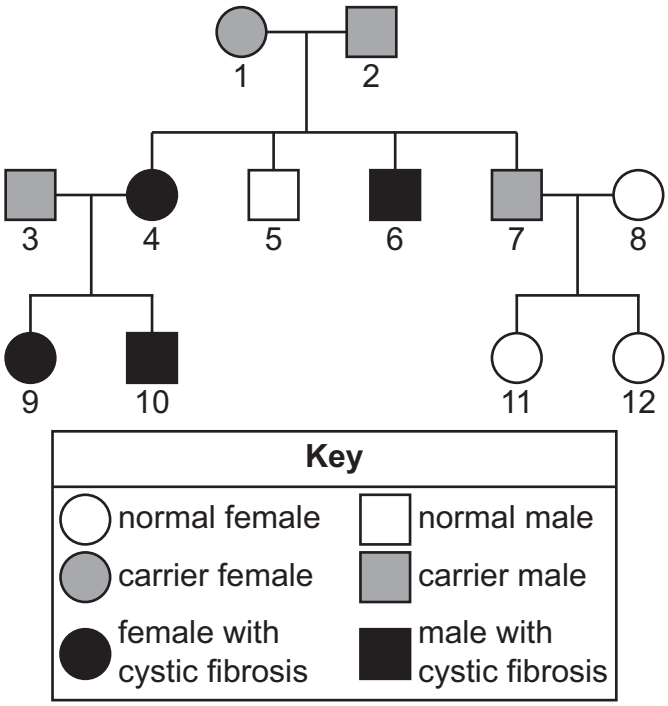
CO_2

H_2O

glucose

15. Use the pedigree diagram below to answer the question.

Pedigree for Cystic Fibrosis



The pedigree shows the pattern of inheritance for a disease called cystic fibrosis. Cystic fibrosis is a disease that affects glands of the body that produce mucus, including those in the lungs.

Which pattern of inheritance is shown in the pedigree for cystic fibrosis?

A. X-linked

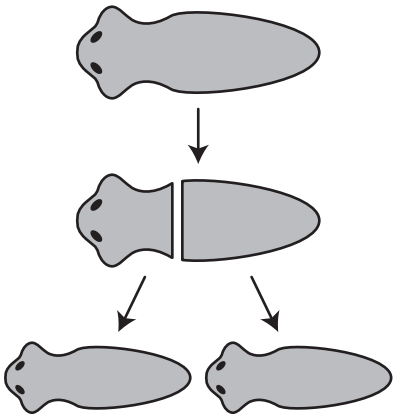
B. mitochondrial

C. autosomal recessive

D. autosomal dominant

16. A planarian is a type of multicellular organism. A process that occurs in a planarian is represented in the model below.

Planarian



Circle one word or phrase in each set of parentheses to **best** describe this process.

The model represents the process of (budding / regeneration / vegetative propagation).

This process is a type of (asexual / sexual) reproduction that is most similar to

(meiosis / mitosis).

The two organisms that result from this process contain DNA that is (identical / different).

17. The discovery of cells was made possible by the invention and refinement of the microscope. Over the years, different individuals provided evidence for what is now known as the cell theory. Four scientists are primarily credited with establishing the three basic concepts of the cell theory.

Mark one box in each row of the table below to identify the scientist(s) **most** associated with the cell theory concept listed.

	Schleiden and Schwann	**Hooke**	**Virchow**
All living things are made of cells; plants and animals are made of cells.			
Cells come from cells; diseased cells produce diseased cells.			
The cell is the basic unit of life; cells can be studied scientifically.			

18. A male child with wavy hair is born to a mother with curly hair and a father with straight hair.

Which type of inheritance **best** explains the child's hair type?

A. codominance because the child's hair type is a blend of the parental hair types

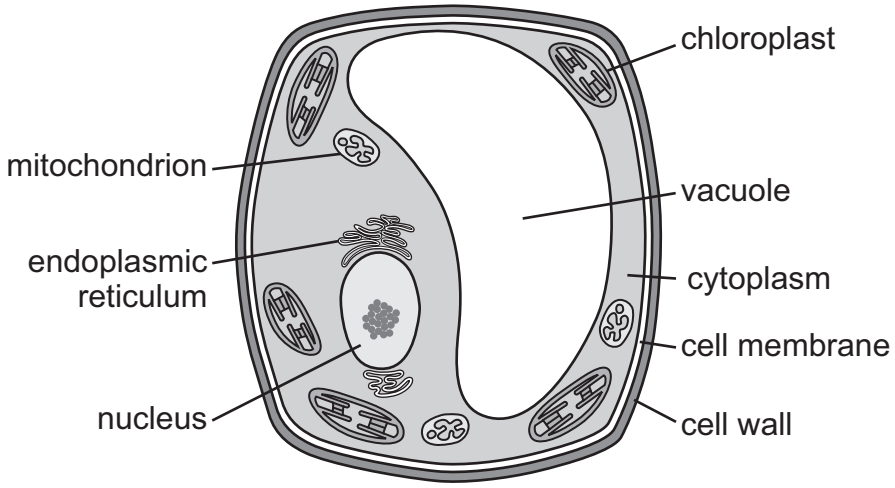
B. codominance because both the male and the female carry the gene for hair type

C. incomplete dominance because the child's hair type is a blend of the parental hair types

D. incomplete dominance because both the male and the female carry the gene for hair type

19. A labeled model of a plant cell is shown below.

Plant Cell Model



Which organelles work together to help a plant cell store and remove excess nutrients?

A. cytoplasm, nucleus, and vacuole

B. vacuole, cell membrane, and cell wall

C. chloroplast, mitochondrion, and cell wall

D. nucleus, endoplasmic reticulum, and chloroplast

20. The classification of viruses as living or nonliving entities has changed throughout history. Initially thought to be poisons, viruses have been classified over time as a specialized form of life and as a biological chemical. Today, their classification remains uncertain.

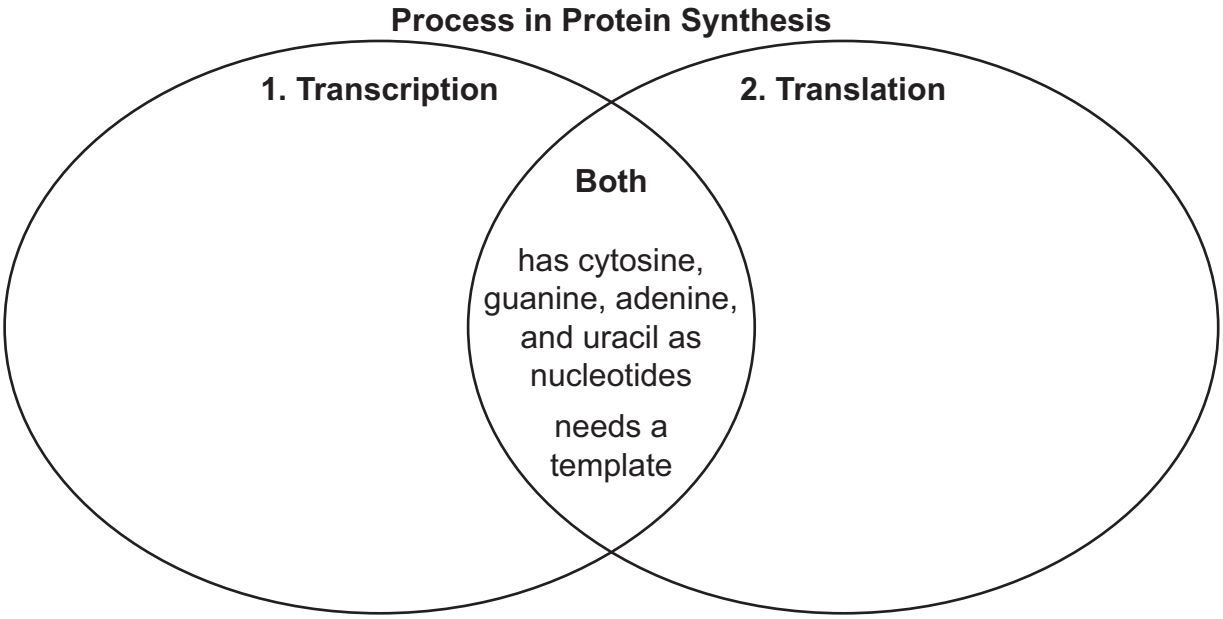
Write the number next to each claim next to the **one** piece of evidence that **best** supports that claim.

Claim	Evidence
	Viruses replicate by simple mitosis.
	Most viruses are larger than common bacterial cells, such as *E. coli.*
	Each virus has either RNA or DNA, compounds found in cells.
	Viruses must use living cells to produce additional viruses.
	Viruses infect only animal cells.

1. Viruses are living.

2. Viruses are nonliving.

21. A student uses a Venn diagram to compare the mechanisms of transcription and translation during protein synthesis. The incomplete diagram is shown.



Write the number 1 or 2 next to each descriptor to identify whether it should be grouped with transcription (1) or translation (2) in the Venn diagram.

has mRNA as a product ☐

occurs in ribosomes ☐

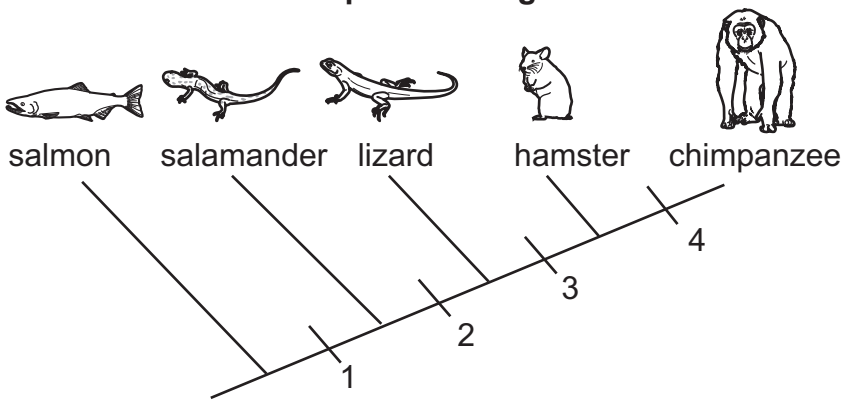
has polypeptide as a product ☐

occurs in the nucleus ☐

22. The chart below and the incomplete cladogram show the relatedness of five organisms.

Vertebrate Group	Basic Characteristics
Fish	obtain oxygen through gills; generally lay eggs; have scales and fins; live in water
Amphibians	develop in water with gills but breathe on land with lungs as adults; include frogs, toads, and salamanders; live in and around water
Reptiles	breathe with lungs; generally lay eggs, but some eggs hatch inside female; have scales or plates; include snakes, lizards, and turtles
Mammals	breathe with lungs; bear live offspring; have fur or hair; produce milk to feed young; may have opposable thumbs; include bats, dolphins, cats, dogs, possums, and primates

Incomplete Cladogram



Select the **two** statements that **best** describe the cladogram.

A. The trait that separates salmon from the other organisms (1) is the development of lungs.

B. The trait that separates hamsters from chimpanzees (4) is the presence of fur and mammary glands.

C. The trait that separates salamanders from lizards (2) is the presence of opposable thumbs.

D. The trait that separates lizards from hamsters (3) is the presence of fur and mammary glands.

E. The trait that separates salmon from salamanders (1) is the presence of opposable thumbs.

F. The trait that separates chimpanzees from the other organisms (4) is the development of lungs.

23. Before the formation of the Grand Canyon, many years ago, a single species of squirrel lived in the area. As the canyon developed, the single species was separated into two habitats, one species on either side of the 10-mile-wide and 1-mile-deep canyon. Evidence also indicates that humans have inhabited the area in recent years.

Abert's squirrel

Kaibab squirrel

Which set of statements **most likely** describes how the formation of the Grand Canyon affected the single squirrel species that once populated the area?

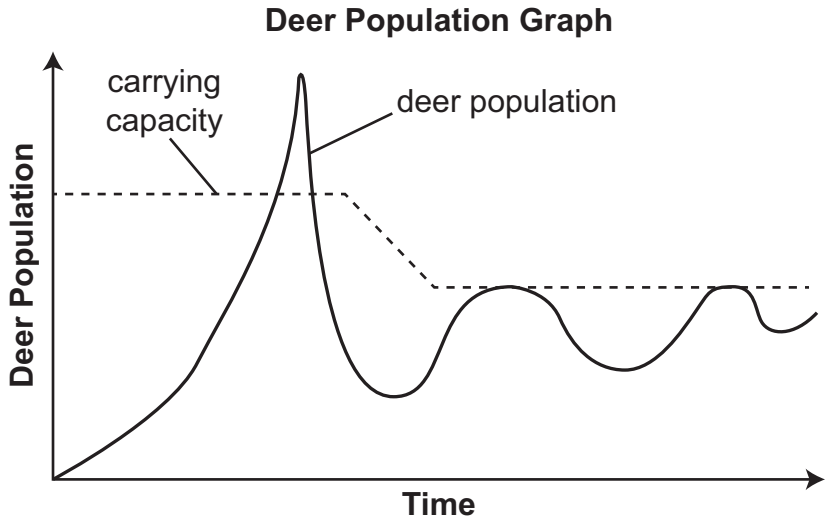
A. **Process:** speciation
Explanation: Humans brought new organisms to the canyon, including a squirrel species that successfully competed with the native species in the area.

B. **Process:** genetic variation
Explanation: Humans brought new organisms to the canyon, including a squirrel species that successfully competed with the native species in the area.

C. **Process:** speciation
Explanation: The single species was split into two distinct groups by the canyon, with each group adapting to its unique environment.

D. **Process:** genetic variation
Explanation: The single species was split into two distinct groups by the canyon, with each group adapting to its unique environment.

24. Deer are brought to an area lush with vegetation and no real predators. The deer population was monitored over time, and population data were recorded as shown in the graph.



Which set of statements **best** describes the data collected?

A. The deer population exceeded the carrying capacity, providing predators with a surplus of food. As the deer population decreased, so did the carrying capacity.

B. The deer population increased as the carrying capacity stabilized. As the carrying capacity decreased, the deer population decreased.

C. As the deer population reached a maximum, so did the carrying capacity. As the deer population decreased, so did the carrying capacity until the environment stabilized and the deer population could increase again.

D. The deer population increased rapidly, quickly exceeding the carrying capacity. As the deer population increased, there was less food available, reducing the carrying capacity.

25. A student is developing a chart to compare aerobic respiration and anaerobic respiration in both plants and animals. The incomplete chart is shown.

Circle one word or phrase in each set of parentheses to complete the chart.

	Aerobic Respiration	**Anaerobic Respiration (plants)**	**Anaerobic Respiration (animals)**
Is oxygen required?	yes	(yes / no)	no
Is there glycolysis?	yes	(yes / no)	yes
What is the ATP yield?	36	2	2
Is glucose completely broken down?	yes	no	(yes / no)
What end products are produced?	carbon dioxide and water	ethanol and carbon dioxide	(carbon dioxide and water / lactic acid)

Mississippi Academic Assessment Program

Biology

Practice Test

The information for each item, including the performance objective, DOK level, item type, and correct answer, is located in this document. The items appear in the order as shown in the table.

Note: The item types are representative of items that will appear in administrations starting in Spring 2019.

Item Number	Performance Objective	DOK Level	Item Type	Correct Answer
1	(BIO.3A.2) Compare and contrast mitosis and meiosis in terms of reproduction.	3	Technology Enhanced	See Answer Key
2	(BIO.3A.3) Investigate chromosomal abnormalities (e.g., Down syndrome, Turner's syndrome, and Klinefelter syndrome) that might arise from errors in meiosis (nondisjunction) and how these abnormalities are	2	Multiple Choice	B
3	(BIO.1D.2) Develop and use models to explain how the cell deals with imbalances of solute concentration across the cell membrane (i.e., hypertonic, hypotonic, and isotonic conditions, sodium/potassium	2	Technology Enhanced	See Answer Key
4	(BIO.5.1) Illustrate levels of ecological hierarchy, including organism, population, community, ecosystem, biome, and biosphere.	2	Technology Enhanced	See Answer Key
5	(BIO.3B.1) Demonstrate Mendel's law of dominance and segregation using mathematics to predict phenotypic and genotypic ratios by constructing Punnett squares with both homozygous and heterozygous	3	Technology Enhanced	See Answer Key
6	(BIO.1B.1) Develop and use models to compare and contrast the structure and function of carbohydrates, lipids, proteins, and nucleic acids (DNA and RNA) in organisms.	2	Multiple Choice	C
7	(BIO.1E.2) Identify and describe the changes that occur in a cell during replication. Explore problems that might occur if the cell does not progress through the cycle correctly (cancer).	2	Multiple Choice	B
8	(BIO.3C.3) Use models to predict how various changes in the nucleotide sequence (e.g., point mutations, deletions, and additions) will affect the resulting protein product and the subsequent inherited	3	Multiple Choice	D
9	(BIO.5.4) Develop and use models to describe the flow of energy and amount of biomass through food chains, food webs, and food pyramids.	2	Multiple Choice	A
10	(BIO.5.5) Evaluate symbiotic relationships (e.g., mutualism, parasitism, and commensalism) and other co-evolutionary (e.g., predator-prey, cooperation, competition, and mimicry) relationships within specific	2	Multiple Choice	A

Mississippi Academic Assessment Program

Biology

Practice Test (Continued)

The information for each item, including the performance objective, DOK level, item type, and correct answer, is located in this document. The items appear in the order as shown in the table.

Note: The item types are representative of items that will appear in administrations starting in Spring 2019.

Item Number	Performance Objective	DOK Level	Item Type	Correct Answer
11	(BIO.1B.1) Develop and use models to compare and contrast the structure and function of carbohydrates, lipids, proteins, and nucleic acids (DNA and RNA) in organisms.	2	Multiple Choice	A, C
12	(BIO.1B.2) Design and conduct an experiment to determine how enzymes react given various environmental conditions (i.e., pH, temperature, and concentration). Analyze, interpret, graph, and present data to...	2	Multiple Choice	C
13	(BIO.1A.1) Develop criteria to differentiate between living and non-living things.	1	Technology Enhanced	See Answer Key
14	(BIO.2.2) Develop models of the major reactants and products of photosynthesis to demonstrate the transformation of light energy into stored chemical energy in cells. Emphasize the chemical processes.	2	Technology Enhanced	See Answer Key
15	(BIO.3B.4) Analyze and interpret data (e.g., pedigrees, family, and population studies) regarding Mendelian and complex genetic traits (e.g., sickle-cell anemia, cystic fibrosis, muscular dystrophy.)	2	Multiple Choice	C
16	(BIO.1E.3) Relate the processes of cellular reproduction to asexual reproduction in simple organisms (i.e., budding, vegetative propagation, regeneration, binary fission). Explain why the DNA of the daughter cells...	2	Technology Enhanced	See Answer Key
17	(BIO.1A.2) Describe the tenets of cell theory and the contributions of Schwann, Hooke, Schleiden, and Virchow.	1	Technology Enhanced	See Answer Key
18	(BIO.3B.3) Investigate traits that follow non-Mendelian inheritance patterns (e.g., incomplete dominance, codominance, multiple alleles in human blood types, and sex-linkage).	2	Multiple Choice	C
19	(BIO.1C.1) Develop and use models to explore how specialized structures within cells (e.g., nucleus, cytoskeleton, endoplasmic reticulum, ribosomes, Golgi apparatus, lysosomes, mitochondria, chloroplast.)	2	Multiple Choice	B
20	(BIO.1A.4) Use evidence from current scientific literature to support whether a virus is living or non-living.	2	Technology Enhanced	See Answer Key
21	(BIO.3C.2) Evaluate the mechanisms of transcription and translation in protein synthesis.	2	Technology Enhanced	See Answer Key
22	(BIO.4.3) Construct cladograms/phylogenetic trees to illustrate relatedness between species.	2	Multiple Choice	A, D
23	(BIO.4.6) Construct explanations for the mechanisms of speciation (e.g., geographic and reproductive isolation).	2	Multiple Choice	C
24	(BIO.5.6) Analyze and interpret population data, both density-dependent and density-independent, to define limiting factors. Use graphical representations (growth curves) to illustrate the carrying capacity.	2	Multiple Choice	D
25	(BIO.2.3) Develop models of the major reactants and products of cellular respiration (aerobic and anaerobic) to demonstrate the transformation of the chemical energy stored in food to the available energy of ATP.	2	Technology Enhanced	See Answer Key

Answer Key

Item Number 1

1. Circle or underline **one** option from **each** of the three sections below to complete a claim about the cause of Klinefelter syndrome.

   Claim (select one)

   It is the result of a mutation during mitosis.

   It is the result of a mutation during meiosis.

   Evidence (select one)

   There is a decrease in the number of sex chromosomes in the affected male.

   There is a decrease in the number of nonsex chromosomes in the affected male.

   There is an increase in the number of sex chromosomes in the affected male.

   There is an increase in the number of nonsex chromosomes in the affected male.

   Reasoning (select one)

   Mutations during meiosis affect sex chromosomes.

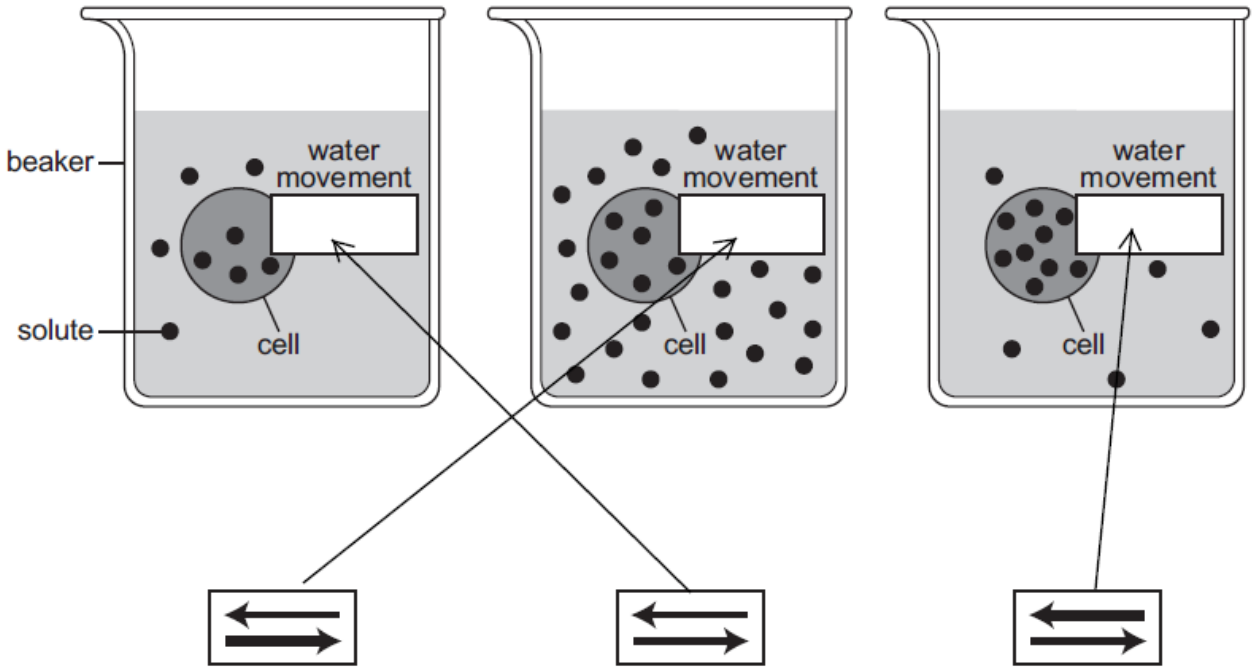
   Mutations during meiosis affect nonsex chromosomes.

   Mutations during mitosis affect sex chromosomes.

   Mutations during mitosis affect nonsex chromosomes.

Item Number 3

3. The models below are set up to represent how a cell responds to imbalances in solute concentration. Draw a line from the correct arrow set to the appropriate beaker to show how water will move into or out of the cell in each beaker for the solute conditions shown.



Item Number 4

4. A 350-acre area in central Mississippi called Old Cove has mature hardwood trees, birds, reptiles, amphibians, and many plant species. Students wrote three descriptions related to the Old Cove environment.

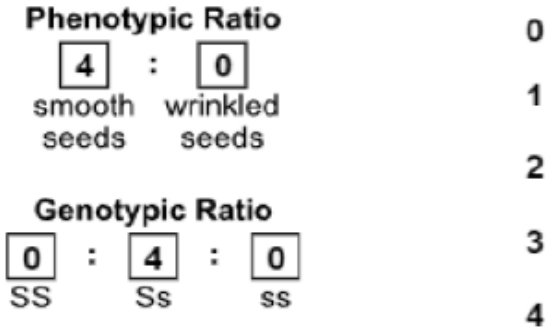
Descriptions Written by Students

1. all the wild turkeys living in Old Cove
2. an individual woodland salamander living in Old Cove
3. all the living organisms in Old Cove

Mark one box in each row of the table below to match the correct level of organization represented by each description.

	biome	community	organism	population
Description 1				X
Description 2			X	
Description 3		X		

Item Number 5



Please NOTE: When ratios are given based on Punnett squares for monohybrid crosses, the numbers in the ratio usually add up to 4. However, the ratio of 1:0 is equivalent to 4:0; so are 2:0 and 3:0.

Correct Answers for the Phenotypic Ratio could be 1:0, 2:0, 3:0, 4:0. For the Genotypic Ratio, Correct Answers can include 0:1:0, 0:2:0, 0:3:0, and 0:4:0.

Item Number 13

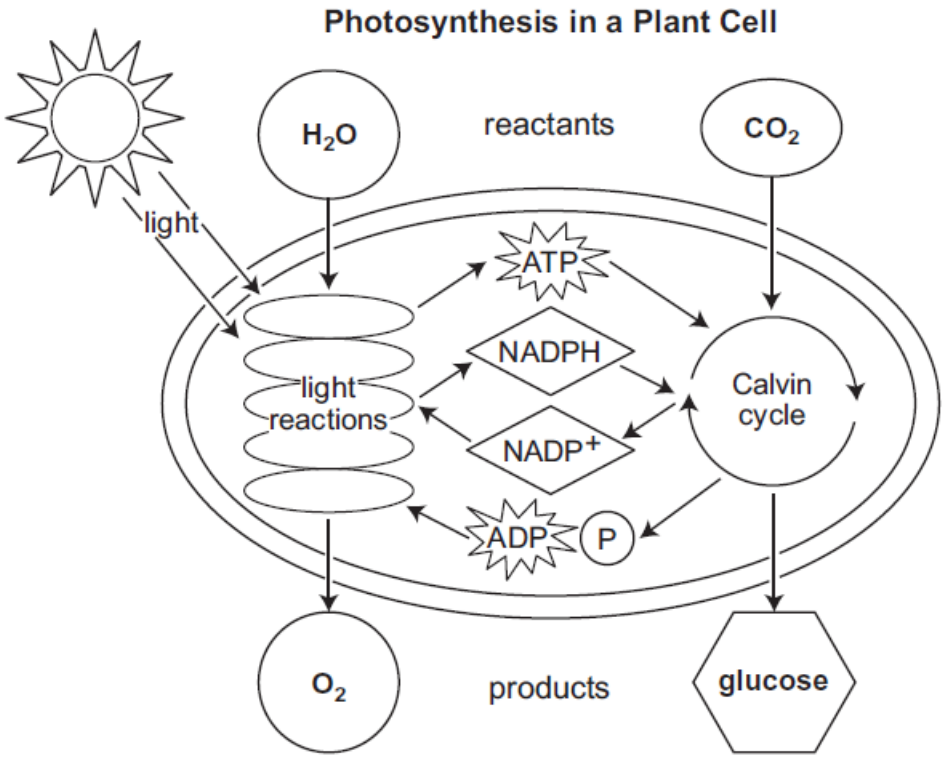
13. Write the characteristics in the boxes in the chart to compare living and nonliving things.

Characteristics of Living and Nonliving Things

Living Characteristics	Nonliving Characteristics
can reproduce	cannot grow
can respond to stimuli	exists without taking in energy
can release energy for work	

Item Number 14

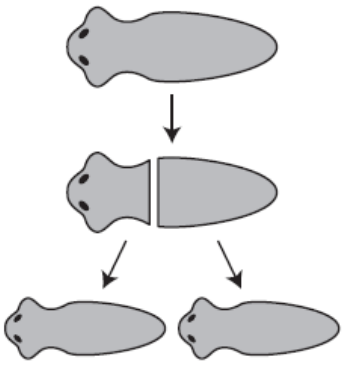
14. Write the labels in the shapes next to "reactants" and "products" in the diagram to show th major reactants and products of photosynthesis in a plant cell.



Item Number 16

16. A planarian is a type of multicellular organism. A process that occurs in a planarian is represented in the model below.

Planarian



Circle one word or phrase in each set of parentheses to **best** describe this process.

The model represents the process of (budding / regeneration / vegetative propagation).

This process is a type of (asexual / sexual) reproduction that is most similar to (meiosis / mitosis).

The two organisms that result from this process contain DNA that is (identical / different).

Item Number 17

17. The discovery of cells was made possible by the invention and refinement of the microscope. Over the years, different individuals provided evidence for what is now known as the cell theory. Four scientists are primarily credited with establishing the three basic concepts of the cell theory.

Mark one box in each row of the table below to identify the scientist(s) **most** associated with the cell theory concept listed.

	Schleiden and Schwann	Hooke	Virchow
All living things are made of cells; plants and animals are made of cells.	X		
Cells come from cells; diseased cells produce diseased cells.			X
The cell is the basic unit of life; cells can be studied scientifically.		X	

Item Number 20

20. The classification of viruses as living or nonliving entities has changed throughout history. Initially thought to be poisons, viruses have been classified over time as a specialized form of life and as a biological chemical. Today, their classification remains uncertain.

Write the number next to each claim next to the **one** piece of evidence that **best** supports that claim.

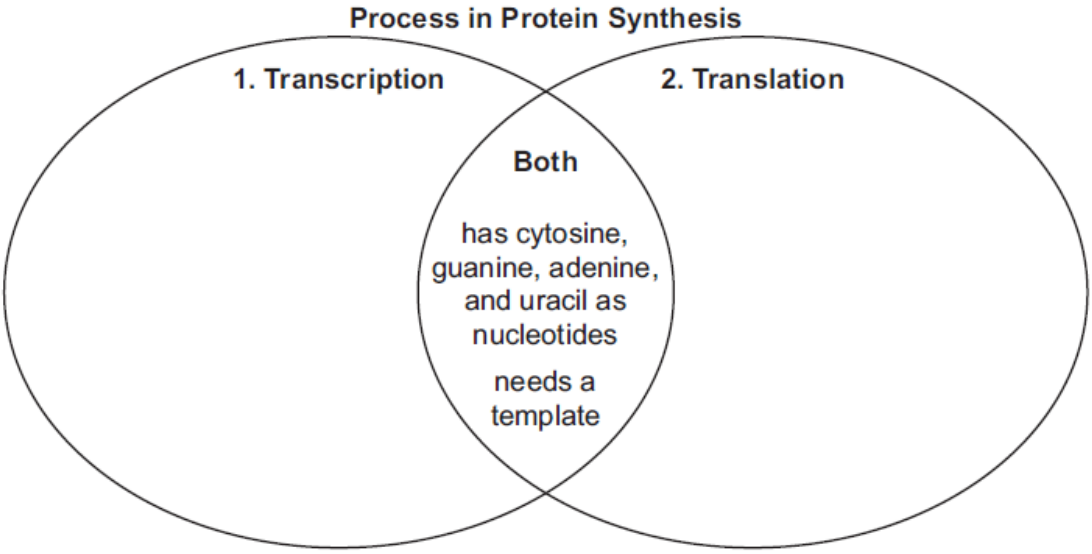
Claim	Evidence
	Viruses replicate by simple mitosis.
	Most viruses are larger than common bacterial cells, such as *E. coli.*
1	Each virus has either RNA or DNA, compounds found in cells.
2	Viruses must use living cells to produce additional viruses.
	Viruses infect only animal cells.

1. Viruses are living.

2. Viruses are nonliving.

Item Number 21

21. A student uses a Venn diagram to compare the mechanisms of transcription and translation during protein synthesis. The incomplete diagram is shown.



Write the number 1 or 2 next to each descriptor to identify whether it should be grouped with transcription (1) or translation (2) in the Venn diagram.

has mRNA as a product	1
occurs in ribosomes	2
has polypeptide as a product	2
occurs in the nucleus	1

Item Number 25

25. A student is developing a chart to compare aerobic respiration and anaerobic respiration in both plants and animals. The incomplete chart is shown.

Circle one word or phrase in each set of parentheses to complete the chart.

	Aerobic Respiration	Anaerobic Respiration (plants)	Anaerobic Respiration (animals)
Is oxygen required?	yes	(yes / no)	no
Is there glycolysis?	yes	(yes / no)	yes
What is the ATP yield?	36	2	2
Is glucose completely broken down?	yes	no	(yes / no)
What end products are produced?	carbon dioxide and water	ethanol and carbon dioxide	(carbon dioxide and water / lactic acid)

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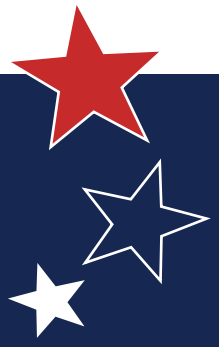
Biology Practice Test

END OF COURSE



Data Recognition Corporation
13490 Bass Lake Road
Maple Grove, MN 55311