



## SECTION 3

### TEST I SAMPLE CONSTRUCTED-RESPONSE ASSIGNMENTS

This section of the Georgia Assessments for the Certification of Educators® (GACE™) Preparation Guide is designed to assist you in responding to the constructed-response assignments on the test. Included in this section are:

- ▶ Constructed-response assignment directions
- ▶ Sample constructed-response assignments
- ▶ Assignment response sheets
- ▶ An example of a strong response to each sample assignment
- ▶ Scoring criteria that will be used in evaluating your response to each assignment

For each sample assignment, you may want to take the following steps to prepare for the test:

- Review the constructed-response assignment directions.
- Print the assignment and the assignment response sheet.
- Use scrap paper to make notes, write an outline, or otherwise prepare your response.
- Use the assignment response sheet to record your response. The assignment response sheet reflects the amount of space available on an actual test.
- After you complete the assignment, review the sample strong response, your response, and the scoring criteria.

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## CONSTRUCTED-RESPONSE ASSIGNMENT DIRECTIONS

A sample of the directions for the constructed-response assignments is shown in the box below.

### CONSTRUCTED-RESPONSE ASSIGNMENT DIRECTIONS

For each constructed-response assignment in this section, you are to prepare a written response of up to one page and record it in the area provided on the appropriate Assignment Response Sheet in your answer document.

Read each assignment carefully before you begin to write. Think about how you will organize what you plan to write. You may use any blank space provided in this test booklet following each assignment to make notes, write an outline, or otherwise prepare your response. *However, each of your final responses must be written on the appropriate Assignment Response Sheet in your answer document.*

Your responses will be evaluated based on the following criteria:

- **Purpose:** The extent to which the response fulfills the purpose of the assignment in relation to relevant GACE framework objectives
- **Application of Content Knowledge and Skills:** The extent to which the response accurately and effectively applies content knowledge and skills in relation to relevant GACE framework objectives
- **Supporting Evidence:** The extent to which the response includes appropriate, specific supporting evidence of content knowledge and skills in relation to relevant GACE framework objectives

Evaluation of each response will be based on the criteria above, not on your writing ability. However, your response must be communicated clearly enough to permit a valid judgment of your knowledge and skills. Your responses should be written for an audience of educators in the field.

Your responses should be your original work, written in your own words, and not copied or paraphrased from some other work. Please write legibly. You may not use any reference materials during the test. Remember to review your work and make any changes you think will improve your responses.

The selected-response section of the answer document containing your name will be removed from your written responses to maintain your anonymity during the scoring process. Do not write your name on any other portion of the answer document, and do not separate any of the sheets from the document.

Please turn the page and begin the constructed-response assignment section of the test.

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## CONSTRUCTED-RESPONSE ASSIGNMENT ONE

### ■ Sample Constructed-Response Assignment One

Use the information below to complete the assignment that follows.

Various cell components and organelles play particular roles in the overall functioning of different types of eukaryotic cells. One such component is the plasma membrane.

- Describe the basic structure of the plasma membrane; and
- explain one way in which the plasma membrane contributes to the normal functioning of a cell.



**■ Strong Response to Sample Constructed-Response Assignment One**

The plasma membrane that surrounds most eukaryotic cells consists of a double layer of phospholipid molecules, with different types of protein molecules attached to or embedded within the membrane. Phospholipid molecules have hydrophilic (water-loving) heads and hydrophobic (water-hating) tails. The phospholipid molecules are arranged in two layers, with their hydrophilic heads facing outward to form the two surfaces of the membrane, and their hydrophobic tails forming the water-free interior of the membrane. One hydrophilic surface of the membrane faces the aqueous solution that surrounds the cell, and the other surface faces the aqueous solution inside the cell. The protein molecules embedded within the membrane are of different sizes and shapes, and often extend completely through the membrane. The protein molecules are aligned so that the parts of the molecules that are exposed on the surfaces of the membranes are hydrophilic, and the parts of the proteins in the interior of the membrane are hydrophobic.

The plasma membrane is a semipermeable structure that functions as a selective barrier between a cell and its surroundings. It facilitates the movement of oxygen, nutrients, and waste products into and out of the cell. The hydrophobic interior of the membrane is key to the functioning of the membrane because it greatly restricts the passage of ions and polar hydrophilic molecules that are dissolved in water. The movement of these through the membrane is controlled by various embedded protein molecules that function in transporting specific materials through the membrane.

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## CONSTRUCTED-RESPONSE ASSIGNMENT TWO

### ■ Sample Constructed-Response Assignment Two

Use the information below to complete the assignment that follows.

In a type of plant, the allele for fuzzy stems ( $F$ ) is dominant to the allele for smooth stems ( $f$ ) and the allele for yellow flowers ( $Y$ ) is dominant to the allele for white flowers ( $y$ ). The traits are inherited independently. Two plants are crossed, and all their offspring in the  $F_1$  generation have the same genotype and a phenotype of fuzzy stems and white flowers. When two plants from this  $F_1$  generation are crossed, the phenotypic ratio of their offspring in the  $F_2$  generation is 3 fuzzy stems and white flowers to 1 smooth stems and white flowers.

- Identify the genotype(s) and phenotype(s) of the original parental generation plants and explain your reasoning; and
- calculate the expected genotypic and phenotypic ratios of the offspring of a cross between one of the  $F_1$  generation plants and a plant that is homozygous recessive for the traits. Show your work.



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#### ■ Strong Response to Sample Constructed-Response Assignment Two

One parent has the genotype FFyy (phenotype fuzzy white) and the other parent has the genotype ffyy (smooth white).

Since all the plants in both the  $F_1$  and  $F_2$  generations have white flowers, both parents must be homozygous recessive (yy) for flower color.

Since both fuzzy and smooth stems are present in the  $F_2$  generation, and all the  $F_1$ -generation plants have the same genotype, the  $F_1$  genotype must be heterozygous (Ff) for the stem trait. Thus, the genotype of one of the original parents must be homozygous dominant (FF) for fuzzy stems and the other parent homozygous recessive (ff) for smooth stems:

		parent ff	
		<u>f</u>	<u>f</u>
Parent FF	F	Ff	Ff
	F	Ff	Ff

and all  $F_1$  plants are heterozygous with fuzzy stems, i.e. Ff.

One possible cross between a plant from the  $F_1$  generation and a plant homozygous for both recessives would be between Ffyy and ffyy.

		Plant ffyy	
		<u>fy</u>	<u>fy</u>
Plant Ffyy	Fy	Ffyy	Ffyy
	fy	ffyy	ffyy

The ratio of genotypes Ffyy to ffyy would be one-to-one, and the phenotype ratio of plants with fuzzy stems and white flowers to plants with smooth stems and white flowers would also be one-to-one.

## CRITERIA FOR SCORING YOUR RESPONSE

Each response will be evaluated based on the following criteria.

<b>PURPOSE</b>	The extent to which the response fulfills the purpose of the assignment in relation to relevant GACE framework objectives
<b>APPLICATION OF CONTENT KNOWLEDGE AND SKILLS</b>	The extent to which the response accurately and effectively applies content knowledge and skills in relation to relevant GACE framework objectives
<b>SUPPORTING EVIDENCE</b>	The extent to which the response includes appropriate, specific supporting evidence of content knowledge and skills in relation to relevant GACE framework objectives

Each response is rated on a three-point scale. The three score points of the score scale correspond to varying degrees of performance that are related to the above criteria.

<b>Score</b>	<b>Description</b>
<b>3</b>	<p>The "3" response reflects thorough understanding of relevant content knowledge and skills as defined in relevant GACE framework objectives.</p> <ul style="list-style-type: none"> <li>• The response fully achieves the purpose of the assignment.</li> <li>• The response demonstrates an accurate and effective application of relevant content knowledge and skills.</li> <li>• The response provides appropriate, specific supporting evidence of relevant content knowledge and skills.</li> </ul>
<b>2</b>	<p>The "2" response reflects general understanding of relevant content knowledge and skills as defined in relevant GACE framework objectives.</p> <ul style="list-style-type: none"> <li>• The response largely achieves the purpose of the assignment.</li> <li>• The response demonstrates a generally accurate, generally effective application of relevant content knowledge and skills.</li> <li>• The response provides some appropriate and general supporting evidence of relevant content knowledge and skills.</li> </ul>
<b>1</b>	<p>The "1" response reflects limited or no understanding of relevant content knowledge and skills as defined in relevant GACE framework objectives.</p> <ul style="list-style-type: none"> <li>• The response partially achieves or fails to achieve the purpose of the assignment.</li> <li>• The response demonstrates limited, inaccurate, and/or ineffective application of relevant content knowledge and skills.</li> <li>• The response provides limited or no appropriate, specific supporting evidence of relevant content knowledge and skills.</li> </ul>

Please note: A response that is unrelated to the assigned topic, illegible, not primarily in the target language, or lacking a sufficient amount of original work to score will be considered **unscorable**. If there is no response to the assignment, then the response will be considered **blank**.