

Unit Assessment Study Guide

GEOGRAPHIC INFORMATION SYSTEMS (G.I.S.)

TEST DATE	Thursday, 11/15 (A1, A3) and Friday, 11/16 (B4)
FORMAT	Mixed format (see the section descriptions below)
NOTES?	<u>This is a no-notes assessment. You will have to think your way through it without any aids.</u>
GRADE	You will earn 4 separate grades, one for each section of the test.
RE-TAKES	Those students who have earned an A or B for daily professionalism are eligible for re-takes.

PART I **KNOWLEDGE** (A1, A3, B4)

<i>Target</i>	I can identify concepts associated with geography, economics, and geo-economic planning.
<i>Description</i>	You will need to match the following concepts/terms with their definitions.
<i>How to study</i>	Create flashcards or glossaries by looking up and writing definitions of these concepts.
<i>Hint</i>	If you see multiple definitions, use the one related to food production, G.I.S., or location.

AGRICULTURE	SITE [or <i>Absolute Location</i>]
DOMESTICATION	GEOGRAPHIC SITUATION [or <i>Relative Location</i>]
SURPLUS	
SCARCITY	JOB SPECIALIZATION (<i>A1 only</i>)
ASSET	INFRASTRUCTURE (<i>A1 only</i>)
GEOGRAPHIC INFORMATION SYSTEM (G.I.S.)	INDUSTRY (<i>A1 only</i>)
DATA MASHUP	MASS-PRODUCTION (<i>A1 only</i>)

PART II **SKILLS** (A1, A3, B4)

<i>Target</i>	I can make inferences and cite evidence (about geographic location) from map texts.
<i>Description</i>	You will need to answer multiple-choice questions about the locations of points on a map.
<i>How to study</i>	Complete the <i>Latitude and Longitude Practice (part II)</i> attached to this study guide.
<i>Hint</i>	If you need a video tutorial about <u>relative location</u> , try this one: https://www.youtube.com/watch?v=WxA0uYqBey4
	If you need a video tutorial about <u>absolute location</u> , try this one: https://www.youtube.com/watch?v=V2hPhPlik-Y&t

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PART III (a) UNDERSTANDING (A1, A3, B4)

- Target** I can create a basic Geographic Information System (G.I.S.) and explain how a G.I.S. helps people solve geographic problems (i.e. where to put a ____).
- Description** You will need to follow a set of instructions and use resources on the class website to create a data mashup on a basic G.I.S. map.
- How to study** Complete the *G.I.S. Practice (part IIIa)* attached to this study guide.
- Hint** You will do this exact same process on the actual test, but you will focus on a different part of the world.

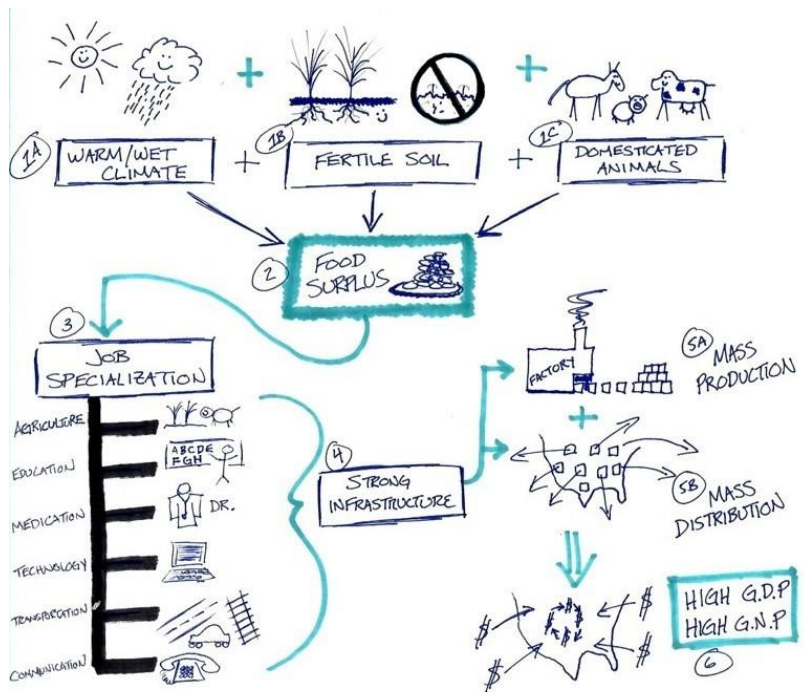
PART III (b) UNDERSTANDING (A1 only)

Target I can explain the relationship between geography and economic development.

Description You will need to explain how geographic factors like climate, soil fertility, and the availability of domesticable animals may affect a region's capacity to develop an industrial economy.

How to study Explain how each factor listed here affects the one that follows it: Food surplus; job specialization; infrastructure development; industrial mass-production and distribution.

Hint Make use of this diagram to help you form your cause-effect ideas.



PART IV REASONING (A1, A3, B4)

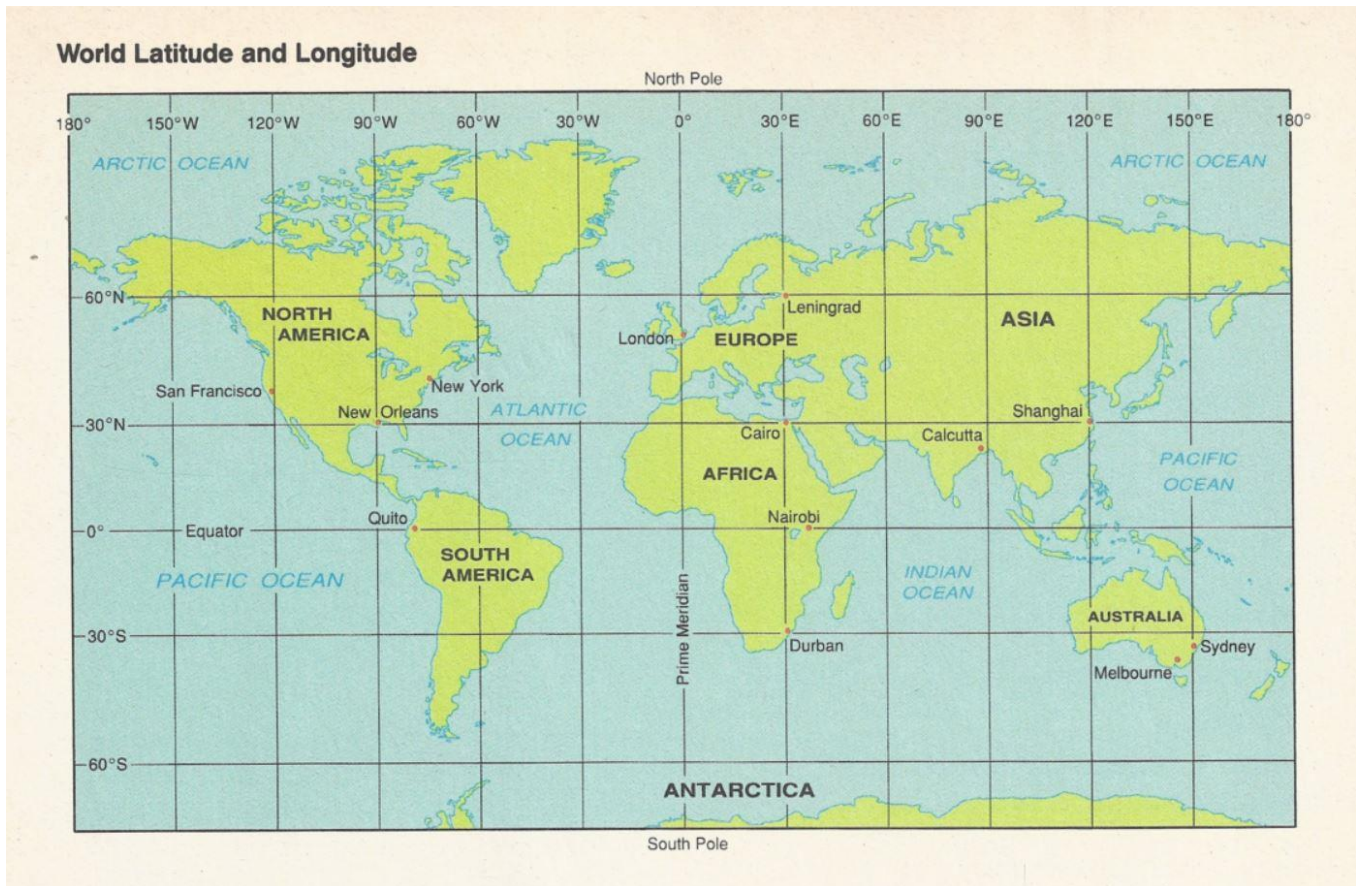
- Target** I can apply my understanding of G.I.S. to solve new geo-economic problems.
- Description** You will need to respond to a prompt about a hypothetical geographic problem. Your answer will need to explain the process of using a G.I.S. to solve the problem.
- How to study** Complete the *G.I.S. Transfer (part IV)* attached to this study guide.
- Hint** You will do execute the very same process on the actual test, just with a different scenario.

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Latitude and Longitude Practice (part II)

Use the map to answer the following questions about latitude and longitude.



- In what ocean does the Prime Meridian intersect the equator?
 - Atlantic
 - Pacific
 - Indian
 - Arctic
- What two continents does the equator cross?
 - North America and South America
 - Africa and South America
 - Africa and Europe
 - Australia
- Which one of these continents lies completely in the Southern Hemisphere?
 - North America
 - Asia
 - South America
 - Australia
- What ocean lies completely in the Eastern Hemisphere?
 - Atlantic
 - Indian
 - Pacific
 - Arctic
- What continent lies completely north of the equator and east of the Prime Meridian?
 - Europe
 - Asia
 - Africa
 - North America
- On what continent would you find the place with a latitude of 20° N and a longitude of 0°?
 - Europe
 - Asia
 - Africa
 - South America

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7. On what continent would you find each of the following locations?

- a. $60^{\circ}\text{N}, 100^{\circ}\text{W}$ _____
- b. $60^{\circ}\text{N}, 100^{\circ}\text{E}$ _____
- c. $20^{\circ}\text{S}, 60^{\circ}\text{W}$ _____
- d. $20^{\circ}\text{N}, 20^{\circ}\text{E}$ _____
- e. $20^{\circ}\text{S}, 140^{\circ}\text{E}$ _____

8. Identify the city that lies closest to each pair of coordinates.

- a. $30^{\circ}\text{N}, 90^{\circ}\text{W}$ _____
- b. $30^{\circ}\text{N}, 30^{\circ}\text{E}$ _____
- c. $60^{\circ}\text{N}, 30^{\circ}\text{E}$ _____

9. Provide the absolute location (coordinates) for each city.

- a. Shanghai, China _____
- b. Durban, South Africa _____

10. Identify the city with each pair of coordinates.

- a. $0^{\circ}, 78^{\circ}\text{W}$ _____
- b. $51^{\circ}\text{N}, 0^{\circ}$ _____
- c. $38^{\circ}\text{S}, 145^{\circ}\text{E}$ _____

11. Identify the situation (relative location).

- a. EXAMPLE: Shanghai is **NORTHWEST** of Australia.
- b. North America is _____ of South America.
- c. Traveling due _____ from Quito would take you to Nairobi.
- d. Sydney, Australia is _____ of Melbourne, Australia.



HINT

If I started in Australia, what direction would I have to go in order to get to Shanghai (in China)? **Northwest**

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G.I.S Practice (part IIIa)

Follow the instructions below to help you create a basic Geographic Information System on the map.

INSTRUCTIONS

1. Get 8 different markers of colored pencils. Pick a color for each of these assets:

- a. COAL
- b. OIL
- c. NATURAL GAS
- d. PHOSPHORUS
- e. IRON
- f. TIMBER
- g. RARE EARTH METALS
- h. URANIUM

2. Go to www.prather.yolasite.com. Click the GEOGRAPHY OF CIVGAME tab.

3. Open **05, Maps of Natural Resource Reserves**

4. Start with the COAL map. Using whatever color above that you selected for COAL, circle all of the regions of South America that have COAL deposits.

5. Follow the same process for the seven remaining maps. **DO NOT COLOR IN** each region. **If a region contains reserves or deposits of a particular resource, then CIRCLE it with the appropriate color.**

6. Choose a new color, or use a pen. Place an **X** inside the 2-3 regions with the **HIGHEST ASSET VALUE**.

7. **Evaluating G.I.S.:** Imagine you own a company and want to build a factory somewhere in South America. You want your factory to have access to natural resource assets. **As the business owner, how would a G.I.S. (like the one you created above) be useful to you?** (Explain why a G.I.S. would be *more* helpful than a bunch of individual asset maps, each showing the location of a particular resource.)



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G.I.S Transfer (part IV)

Follow the instruction below the map to help you create a basic Geographic Information System.

SCENARIO

Imagine you have been hired by the city government of Cleveland, OH, to determine where the city should build a new, huge, international airport.

How would you figure out where to build it???

[Notice: You are not being asked *where* to build it, but *how* to figure out where to build it.]

STEP 1

I need lots of data about the city and geography of Cleveland before I make my recommendation.

In the table below, identify 3 different data maps that would be helpful to you, and explain why each data set is relevant to your particular geographic problem. Note the example...

I would like a map of...	This map is relevant to my airport problem.
the major interstate road systems in and around Cleveland	I want to know the location of all the major interstate road systems because the city's new airport has to be accessible to people. Travellers need to be able to get to the airport easily. The city does not want to spend millions of dollars building new roads, so the airport has to be built near roads that already exist. Roads are a major ASSET to this project.

STEP 2

Explain what will happen to the data described above when you upload the data into a Geographic Information System. (Hint: Explain what a “data mashup” is.)

STEP 3

Explain how the G.I.S. will help you make a well-informed decision about the location of Cleveland's new airport site. (Hint: Explain how a G.I.S. reveals which areas have high asset value and which areas have low asset value.)