GEG1302 MID-TERM EXAM

Professor Sonia Wesche
February 13, 2012, 1:00pm-2:20pm (1hr15 min)
V1

NAME: _____

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Section A	/ 15
B	/ 10
C	/ 20
Bonus	/ 1
Total	**/ 45**

INSTRUCTIONS:

1) Write your name and student number at the top of every page of this exam.
2) You will have 1 hour and 15 minutes to write this exam.
3) This exam consists of three (3) sections. Be sure to read all questions carefully. Write all of your answers in the spaces provided. You may write your answers in English or French.
4) This exam is worth 25% of your final mark.

Good luck!

SECTION A: Multiple Choice

******THERE ARE THREE VERSIONS OF THIS MID-TERM, EACH DIFFERING IN THE ORDER OF MULTIPLE CHOICE ANSWERS. THE BELOW ANSWERS ARE FOR 'v1' (look for 'v1', 'v2' or 'v3' under the exam date above).******

Circle the most appropriate answer. **(1 mark x 15 questions = 15)**

1. Geographers are increasingly concerned with a global scale of analysis because _____.

a) of the need to accurately map the world
b) the local scale of analysis is unimportant
c) physical geography determines human geography
d) people and places are increasingly connected and interconnected
e) of the need to study both physical and symbolic components of landscape

2. Classical geography was characterized by which of the following geographical traditions?

a) theory and economic
b) physical and social
c) human and regional
d) literary and mathematical
e) economic and social

3. The T-O maps produced between the twelfth and fifteenth centuries were centred on which city?

a) London
b) Jerusalem
c) Paris
d) Cairo
e) Athens

4. The theory of possibilism advocates that _____.

a) physical landscape is transformed by human activities
b) human activity is determined by choices that humans make
c) human activity is determined by physical landscape
d) importance of physical-geography-as-cause approach
e) geography is a regional study

5. How is the position of a place determined by absolute location?

a) by referencing the relative location of one place to another
b) by referencing the grid system of latitudes and longitudes
c) by referring to its place name
d) by referring to absolute space
e) by referring to the concept of place

6. The term topophobia refers to _____.

a) the fear of placelessness
b) the fear of oceans
c) the dislike of distances
d) the fear of a hilly region
e) the dislike of a landscape that evokes anxiety, fear, or suffering

7. What is a global positioning system (GPS)?

a) a remote sensing instrument
b) a method of analysis
c) an instrument that measures distances between two given places
d) an instrument that uses satellite signals to calculate location and elevation
e) an imaginary grid system of latitudes and longitudes

8. A map that includes a series of lines that link together points that have the same value is called a/an _____.

a) dot distribution map
b) schematic map
c) cartogram
d) choropleth map
e) isopleth map

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9. Mollweide, Robinson, and Mercator are types of _____.

a) map types
b) map scales
c) map projections
d) map symbols
e) None of the above

10. Which of the following functions can be performed by a Geographic Information System (GIS)?

a) data analysis
b) data manipulation
c) data capture
d) data search or retrieval
e) all of the above

11. What is 'carrying capacity'?

a) the maximum load that can be transported by a truck
b) the maximum population in a given nation
c) the maximum population that can be supported by a given set of resources
d) the increasing problems of aging
e) the load of unemployment on society

12. Sustainability is commonly described as incorporating the following three components:

a) society, economy and environment
b) economy, environment and politics
c) environment, politics and demography
d) politics, demography and place
e) none of the above

13. The term 'crude birth rate' refers to the _____.

a) total number of births in one year for every 100 people
b) total number of live births in a given period for every 1,000 living people
c) actual number of live births per 1,000 women
d) actual number of live births per 100 women in the fecund age
e) total number of births for every 1,500 people

14. Three factors influencing India's rate of female feticide include _____.

a) government policies
b) cultural factors
c) economic factors
d) all of the above
e) B and C

ERROR IN THE QUESTION ('three' should be 'the'), SO ALL ANSWERS ARE CORRECT.

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15. Almost 99 per cent of the projected growth in 2050 is expected to take place in ____.

a) the most developed world
b) the less developed world
c) Eurasia
d) Australia
e) Africa

SECTION B: Definitions

In the space provided, define and briefly explain <u>5 of the following 8</u> terms as they relate to ideas that have been presented in this course. (2 marks x 5 terms = 10)

If they provide an accurate definition, you can give them full marks. They may also refer to how we used the concept in class.

[For each question, this is more information than required for full marks]

Region

- A part of the earth's surface that displays internal homogeneity and is relatively distinct from surrounding areas according to some criterion or criteria; regions are intellectual creations.
- Geographers can't study the whole world at once; Need to subdivide into manageable chunks to study: regionalization
- 2 Types of Region:
    1. Formal/uniform region: uniformity of physical and cultural features
        - E.g.: province or homogeneous cultural regions
        - e.g. Area of German-speaking people
    2. Functional/nodal region: a spatial system where parts are interdependent (series of linked locations: network) and a core and periphery can be distinguished.
        - E.g. sales distribution area of (paper copies of) a city newspaper (e.g. Ottawa Citizen)

Feedback loop

<u>Feedback</u>: Relationships between parts of the system or between a system and external components.

- <u>Positive</u>: reinforces a change that is occurring (e.g. Arctic warming is melting the ice, exposing darker tundra and water, which absorbs more energy from the sun, which contributes to further warming)
- <u>Negative</u>: counters a change that is occurring

Relates to our discussion about systems, particularly ecosystems.

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Mental map

- Cognitive **images** representing a person's perceptions, feelings, memories, meanings and knowledge of a location
- What you see in your mind's eye when you think of a place
- *Not just spatial knowledge!* Can include place names, place-based memories or observations, etc.
- A person's internal map of a known world
- Illustrates what individuals know about places and what they have experienced there.
- Used to complete everyday tasks
- We also draw mental maps of places that are unfamiliar (to visualize the unknown) – when you went somewhere new and were totally surprised either a) because it was so different from what you thought it would look like, or b) that your mental picture was similar to reality.

Place

1. Refers to the attributes and values we individually associate with a location OR a Location with a particular identity
2. *Sense of Place* refers to the attachments we have to specific locations - Attachment to locations that have personal significance, E.g. Your home (vs house), your university, the places you shop
3. Features:
    a. Has location, direction and distance with respect to other places
    b. Has size; scale is important
    c. Has both physical and cultural content
    d. Attributes develop and change over time
    e. Elements interrelate with other places
    f. Content is structured and explainable
    g. May be generalized into regions of similarities and differences

Biosphere II project

- A project in Arizona (constructed 1987-91) to create an artificial, self-contained closed system – a miniature replica of the earth.
    - It was used to explore the complex web of interactions within life systems in a structure that included five areas based on biomes and an agricultural area and human living/working space to study the interactions between humans, farming and technology with the rest of nature.
    - A crew of 8 people were locked inside for 2 years, and struggled with air quality and food production.
    - The project's failure showed that every ecosystem component plays an important role (including microbes in the soil) – it is difficult to get the balance of elements right
    - The project included both challenges with the physical environment and the human environment (2 factions emerged)

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Replacement fertility

Level of fertility (or the total fertility rate) the population needs to replace itself from one generation to the next.

- Rates vary between 2.1 (e.g. Canada) and 2.5 (e.g. less developed countries) children per woman (taking death rates/mortality into consideration)
- Fertility rates have been declining across the globe over the last 50 years.
  - Many developed countries are now below RFR
  - Developing countries are mostly above RFR, but dropping

Demographic transition model

- Describes changing levels of fertility and mortality over time as countries develop – a model of what has been happening in industrialized communities over the past 250 years.
- 4 phases/stages 1. Birth & death rates are high, 2. Death rates drop, but birth rates remain high – population increase, 3. Birth rates drop, 4. Birth & death rates are low
- Demographic transition is the change that countries go through when they progress from a population with short lives and large families to one in which people tend to live longer lives and raise small families.
- About one-third of the world's countries have completed this transition.

Migration

- The permanent or planned long-term relocation of residence
- Components: Emigration (leaving your country of origin), immigration (moving to a new country), internal migration (displacement within country of origin)
- 4 categories/types: primitive, forced/impelled, voluntary/free, mass/collective
- 2 special types of migrants: illegal and refugees/asylum seekers

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SECTION C: Short answers

Answer 4 of the following 5 questions in the space provided.
(5 marks x 4 questions = 20)

1. **Explain how research undertaken at different geographic (or spatial) scales might result in different interpretations of the data collected and/or observations made. Provide examples.**

*What I am looking for here is an explanation of how data, perspectives and interpretations might differ when looking at an issue at different scales of analysis: e.g., local, regional, national, global. Why might we choose one scale of analysis over another, and what might we learn from asking similar questions at different scales?

Questions at different scales generate different answers –

- Example 1: e.g. unemployment rate nationally may not look so bad – no need to change programs, but in a town where the one industry has just shut down, people may be very hard hit
- Example 2: E.g. Global climate change is incremental; Climate change effects on select local ski areas or islands can be devastating
- Example 3: if one looks at homelessness in Canada from a national perspective, we have a fairly low rate, so might assume that there is no need for action. However, if we assess homelessness in downtown Ottawa, an area that includes several shelters, we would see that it is an important issue that needs to be addressed.

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2. Energy and land use are two major mechanisms by which humans are impacting the environment. Discuss how each is contributing to environmental change. Provide examples.

Energy:

- Major driver of global environmental change: energy needs of a growing and developing population
- Fossil fuels (Technological breakthrough): Coal, oil, natural gas, nuclear - heavy reliance: 81% of total global energy consumption
- Nuclear: once thought to be safe, but now core countries are reducing production.
- Renewables: Hydroelectric, solar, wind, geothermal - captured in various ways and used to drive pumps, machines and electricity generators

Both Production & Consumption have environmental impacts

- There is a disparity in terms of where energy is produced and consumed
    - Core countries tend to consume more energy per person than peripheral (less developed/lower income) countries.
    - Many peripheral countries provide energy resources to core (more developed/higher income) countries
- Causes significant impacts on physical landscape.
- Rapid increase in energy use in developing countries, incl. Mexico, India, China as they go through a period of heavy industrialization.
- Canada's economy closely linked to fossil fuels – much interest on Oil Sands – single largest contributor of GHG emissions in Canada (3% of total)

Various ways that energy production and consumption cause environmental change – some primary examples

1. Environmental Disasters: e.g. Gulf of Mexico – BP oil rig explosion; Japan – Fukushima Daiichi nuclear plant radiation release due to earthquake/tsunami
2. Fossil fuel extraction is a dirty business
    - We've exhausted much of the easy-to-reach reserves, and now have to dig deeper and often go after sources that require more refinement
    - Requires more energy input, and often increased environmental degradation.
    - E.g. Oil Sands: Requires major energy inputs to separate bitumen out: equivalent of 1 barrel of oil to produce 3 barrels of oil – also degrades huge swaths of land.
3. Energy production and consumption release Greenhouse Gas (GHG) emissions: CO_2 and N_2O (Nitrous Oxide)
    - Contributes to Climate change

Land Use:

- Environment is dramatically impacted by pressures on the land: e.g. clearing for fuel, farming, grazing, resource extraction, highway building, energy generation, war

- Types of land use change

1. Conversion: wholesale transformation fro one use to another (e.g. forest to settlement)
2. Modification: alteration of existing cover (e.g. grassland overlaid with railroad tracks; forest is thinned, not clear-cut)

- Forest clearing:
  - Rapid clearing through logging, for settlement, agriculture or fuelwood
  - Most clearance in global periphery – much of net clearance in core replaced by regeneration
  - Rain forests being destroyed at 0.5 hectares (1 acre)/second – loss of biodiversity, destabilization of oxygen/carbon cycles – potential long term influence on global climate.
- Cultivated Land
  - Cultivated land expanded 450% over past 3 centuries – now constitutes an area the size of South America
  - Most rapid expansion in peripheral regions, and steady or reduced in core
  - Core-periphery trends due to growing populations and levels of consumption, and globalization of agriculture
- Grassland
  - Mostly arid/semi-arid regions – used for livestock grazing (rangeland/pasture)
  - Clearing (e.g. for settlement) or overgrazed
- Wetlands
  - Drained or filled in for settlement or cultivation
  - Core countries – technological innovation made modification and conversion of wetlands possible and profitable.
- Areas of settlement – changes the ecosystem and its ability to provide environmental services like clean water and clean air
  - Limited natural vegetation
  - Urban air pollutants
  - Microclimate: urban heat island
  - Noise
  - Water pollution

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3. Describe the history of population growth, including the four eras (or time periods) discussed in class and the factors that influenced population growth during those eras. Briefly outline current global population trends.

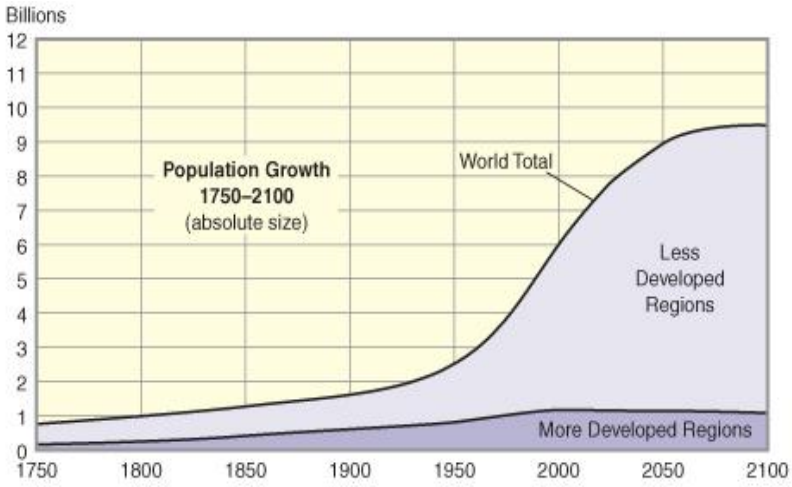
- Global population growth was very slow until the 1830s due to decreases in mortality (death rates) due to increased sanitation, improvements in health services and food production, etc.

1. Hunter-Gatherers:
- very low population density and average rate of growth
- 250,000 to a few million

2. Early, pre-industrial agriculture:
- increased density
- first major increase in total world population
- 100 million to 500 million by 1600

3. Industrial Revolution:
- Rapid population increase due to improvements in quality of life (healthcare, food, etc.).
- 900 million in 1800

4. Modern (1950s□):
- urbanized world, population decline in developed countries, and rapid rise in developing countries.
- Unprecedented, exponential growth (very rapid).
- 3 billion by 1960
- 7 billion in October 2011
- The rate of growth (rapidity with which the global population is growing) is declining, but still growing. Projections indicate a likely stabilization between 9-10 billion between 2050 and 2200.
- 99% of growth over next 50 years will occur in less developed regions.



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4. Discuss the main patterns of global population distribution and density, including where we live and why (what are the influential factors?).

- Uneven global distribution (*where people are located*) & density (*how many in an area*)
- Patterns
  - 90% north of equator (population dominance of northern hemisphere)
  - 90% on less than 20% of the land
  - Low lying areas
  - Along coastlines
  - Mostly in middle-latitudes (2/3rds between 20-60 degrees north)

- Some areas heavily inhabited, others only sparsely, even though they might exhibit a similar physical makeup
- Important factors that shape population distribution:
  - Physical
    - Degree of accessibility,
    - topography,
    - soil fertility,
    - climate & weather,
    - water availability & quality,
    - type & availability of other natural resources.
  - Cultural variables: Strong state organization = population concentration; also industrial revolution = urbanization
  - Country's political and economic experiences & characteristics: e.g. high population concentrations along Brazil's Atlantic coast date back to trade patterns set up during Portuguese colonial control in 16^{th}/17^{th} centuries.
- E.g. In Canada we live along the US border, and more predominantly in the east (as well as southern BC) due to a combination of factors: good trading relations, temperature, historical development along waterways, more recent immigration to west coast and now Alberta, etc.

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5. **Identify and describe the four different migration types and two special types of migrant discussed in class. Provide examples for each.**

    a. **Primitive**
        i. Pre-industrial peoples migrated due to some ecological necessity
        ii. Specific instance of adaptation to an environment
        iii. E.g. hunter-gatherer groups migrate periodically when local resources are depleted
    b. **Forced** (or impelled)
        i. Relocation decision made solely (or primarily) by people other than the migrants themselves
        ii. E.g. 10-12 million Africans forcibly transferred to the Western Hemisphere as slaves (16^{th}-19^{th} centuries)
        iii. E.g. China's Yangtze River Hydroelectric Dam: 1.8 million people displaced
    c. **Free (Voluntary)**
        i. Individual response to social, cultural, and economic factors
        ii. E.g. Alberta resource boom (oil sands): Influx of workers from within and beyond Canada
        iii. E.g. European Union: New countries added to the EU = new access for eastern Europeans to western European job markets)
    d. **Mass (collective) migration**
        i. Specific form of Free Migration
        ii. Many people making the same migration decision at about the same time
        iii. E.g. Irish Potato famine: mid-1800s
        iv. E.g. Mass movement to England, Scotland, N. America & Australia
    e. **Illegal**
        i. Exits a country that prohibits out-movement
        ii. Enters a country without official approval
        iii. E.g. Former communist bloc (exit)
        iv. E.g. Mexicans (and others) migrating to the US (entry)
    f. Refugees/Asylum Seekers *(either one is ok)*
        i. Those who flee their homelands due to war (e.g. Somalia), fear of political persecution (due to race, religion, nationality, political beliefs, or social characteristics), or environmental conditions (e.g. rising sea levels inundating small pacific islands – such as Carteret Islanders, e.g. areas where agricultural production is compromised due to drought)

BONUS QUESTION: What are the two most populated countries on Earth?

INDIA & CHINA

The end