

World Geography 3202

Answer Key

August 2009

1. C	30. C
2. D	31. D
3. A	32. B
4. C	33. B
5. D	34. C
6. A	35. D
7. B	36. C
8. A	37. C
9. A	38. C
10. C	39. B
11. D	40. A
12. B	41. D
13. B	42. D
14. B	43. D
15. A	44. A
16. D	45. B
17. C	46. C
18. C	47. B
19. C	48. B
20. A	49. A
21. C	50. A
22. B	51. D
23. A	52. B
24. D	53. C
25. C	54. D
26. A	55. C
27. C	56. A
28. C	57. A
29. D	58. D

PART II

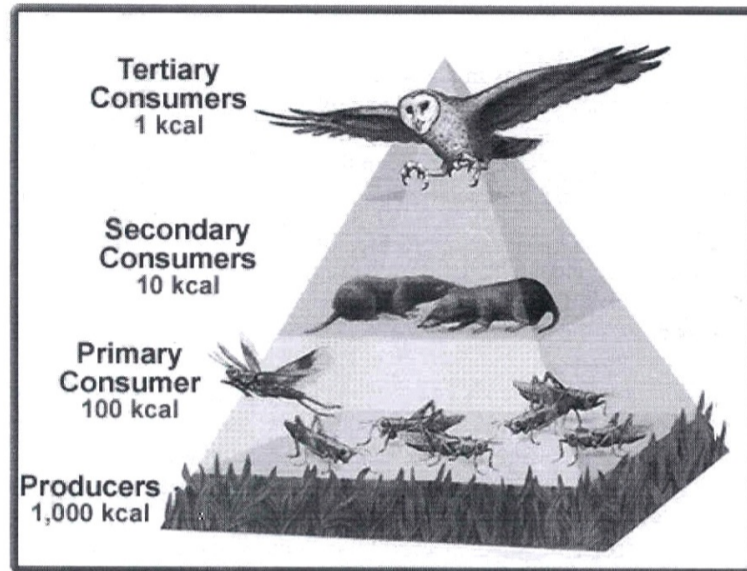
SECTION A

TOTAL VALUE: 8%

Instructions: Do ALL questions in PART II, Section A.

Value

- 4% 59. Explain why the owl could be greatly impacted by a pesticide introduced at the primary trophic level.



2 marks for each of 2 points with explanation

- Toxins are fat soluble. This means they collect and remain in the fat tissues of animals and do not get flushed out of their bodies.
- The higher up an animal is on the food chain the more organisms from the lower levels it has to consume to get all the food energy it requires. All of these organisms may contain toxic chemicals.
- The higher the trophic level the higher the concentration of toxins. This is known as “magnification of toxins” or “biological amplification”.

Value

4%

60. Many countries have rich offshore oil resources they have known about for many years and have not developed. Explain two factors which could account for this lack of development.

2 marks for each of 2 factors fully explained

1 mark if factor is listed

- Technology must be available to extract the resource.
- Extraction of the resource must turn a profit for the companies. If the price of oil is too low, companies may wait and extract the oil when the price rises and a greater profit can be realized.
- Countries often need agreement from several companies (as in the case of the Hibernia Project) to carry out development and may not be able to achieve this agreement due to a variety of reasons. (i.e. profit sharing, initial investment, etc.)

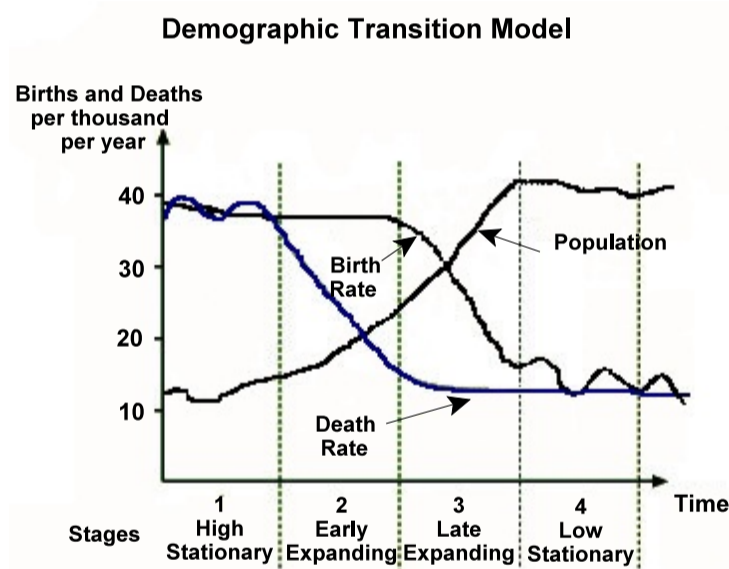
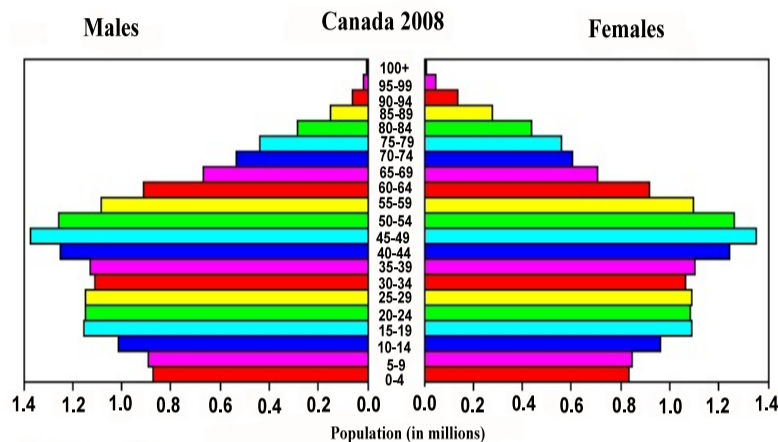
Do only ONE of the Units in Section B.

- Either:** Unit 6 - Population Distribution and Growth (# 61)
Or: Unit 7 - Settlement and Urbanization (# 62)

UNIT 6 - Population Distribution and Growth

Value

4% 61. Based on the demographic transition model and the population pyramid below, provide two reasons to explain the stage in which Canada can be classified in 2008.



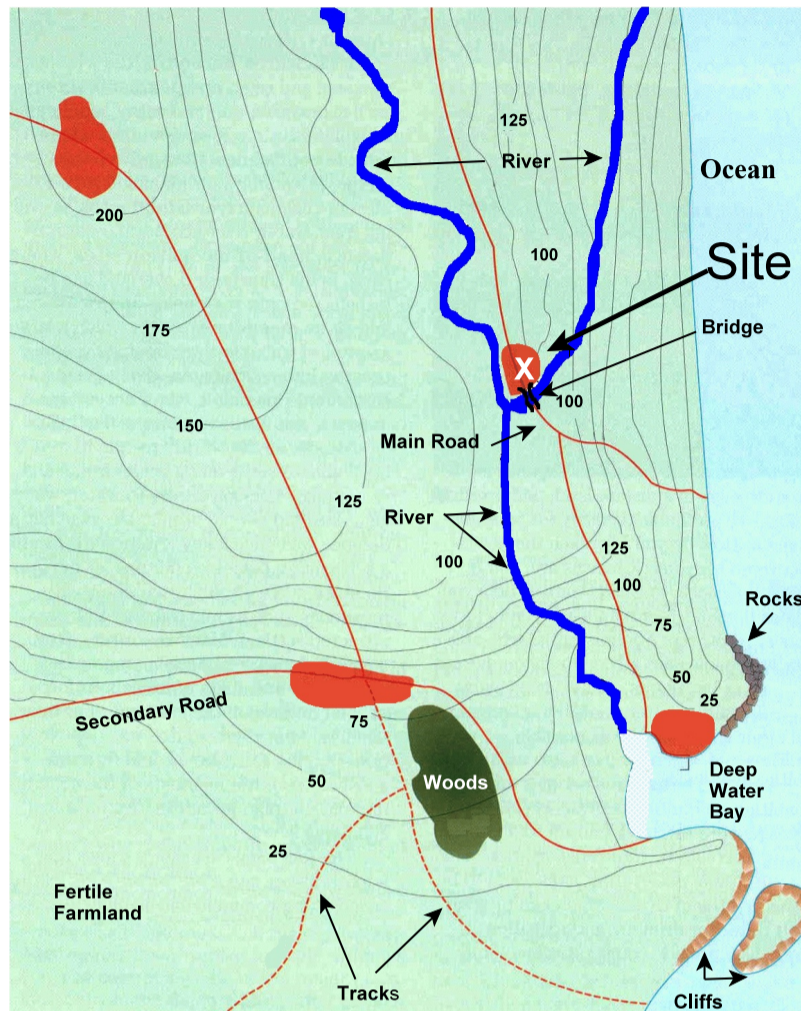
1 mark for correct classification
1.5 marks for each of 2 reasons fully explained

- Classification: Stage 4
- Population has stabilized and may be experiencing a small natural decrease. (Immigration would counteract this.)
- Death rates have fallen to a very low level and stabilized due to improved health care, nutrition, etc.
- Birth rates have fallen due to cultural changes, access to birth control, etc.

UNIT 7 - Settlement and Urbanization

Value

4% 62. Explain two physical factors that have influenced the settlement of Site X.



2 marks for each of 2 factors fully explained
1 mark if factor is listed

- Site X is a “river confluence”
- transportation provided by 2 rivers
- bridge point giving access to the ocean by road
- excellent site for defense
- access to deep water bay by way of the river
- fertile farmland nearby (trees as well)
- land fairly level: 25 - 125 in most places

Part II

Section C

TOTAL VALUE: 28%

Instructions: Do ALL questions in PART II, Section C.

Units 1-5

CASE STUDY 1: Earthquake Destruction: A Closer Look

An earthquake is a phenomenon that results from and is powered by the sudden release of stored energy in the crust that transmits seismic waves. At Earth's surface, earthquakes may manifest themselves by a shaking or displacement of the ground and sometimes results in large waves known as tsunamis.

Most of the world's earthquakes take place in the 40 000 km long, horseshoe-shaped zone called the Pacific Ring of Fire, which for the most part bounds the Pacific Plate. Massive earthquakes tend to occur along other plate boundaries, too, such as the Himalaya Mountains. Minor earthquakes happen every day around the world, but most of them go unnoticed and cause no damage. Large earthquakes, however, can cause serious destruction, loss of property, and loss of life. Most large earthquakes are also accompanied by other, smaller ones that can occur either before or after the main shock. The severity of an earthquake can be measured in terms of intensity and magnitude. The analysis of earthquake severity allows scientists to estimate the locations and likelihood of future earthquakes. This helps identify areas of greatest hazard and ensures the safety of people and infrastructure located in such areas.



Figure 1 depicts tectonic plates in the regions near the Indian subcontinent where earthquake activity is common.

2005 Pakistan Earthquake

The Pakistan earthquake occurred on October 8th, 2005. It registered a magnitude of seven point six on the Richter scale. Most of the affected people lived in the mountainous regions where access was blocked by landslides, leaving an estimated 3.3 million homeless in Pakistan. The United Nations reported that 4 million people were directly affected at the worst possible time – just prior to winter snowfall in the Himalayan region. It is estimated that damages incurred were well over \$5 billion Canadian.

Table 1 2005 Pakistan Earthquake Summary

Date	October 8, 2005
Magnitude	7.6
Countries affected	Pakistan, India, Afghanistan
Deaths	74 500+
Injuries	106 000+

Resulting Damages

As Saturday is a normal school day in the region, most students were at school when the earthquake struck. Many were buried under collapsed school buildings. Many people were also trapped in their homes and, because it was the month of Ramadan, most people were taking a nap after their pre-dawn meal and did not have time to escape during the earthquake. Entire towns and villages were completely wiped out in Northern Pakistan with surrounding areas also suffering severe damage. On October 26th, the government urged people at higher elevations to come to valleys and cities for relief because bad weather, mountainous terrain, landslides and blocked roads were making it difficult for relief workers to reach each house and winter storms were imminent.

An assessment of the buildings in urban areas revealed that 60% were built of unreinforced concrete block. Seventy percent of these poorly constructed buildings collapsed and were responsible for the majority of deaths and injuries.

Rescue and Relief Operations

Distributing relief supplies to victims was especially urgent as the victims faced the risk of exposure to cold weather due to the region's high altitude and the approaching winter. Many areas had no power and were without adequate food and water which increased the spread of disease. Food, medicine, tents and blankets were quickly identified by relief workers as essential items.

Relief efforts in many remote villages were hampered as roads were buried in rubble and many affected areas remained inaccessible. Rescue required heavy equipment to clear roads and rescue survivors buried under earthquake wreckage. However, many rescuers had nothing to use but their bare hands and pickaxes. Rescue efforts were also affected by the numerous aftershocks that continued to rattle the region. To make the situation even worse, on October 13th, snow started on the Indian side of Kashmir. This caused more people to be cut off from help as snow closed more roads in the mountain region.

Lasting Effects: One Year Later

One year after October's massive Pakistan earthquake, nearly two-million people faced the Himalayan winter without proper shelter. Teachers in the area were still using make-shift schools and many children were too frightened to come back to class. Most survivors lived in the same basic tents they erected 12 months before and they indicated that conditions were getting worse, not better. The camps were crowded, the tents leaked, and fresh drinking water was hard to find.

The international aid agency Oxfam said it was much the same story throughout the quake zone. The earthquake had left more than three million people homeless.

“In those camps where 40 000 people live, they have not had a lot of attention since last year, so the tents are run down and the facilities have not been maintained as well as they could have been.”

Kate Simpson – International Aid Worker (Oxfam)

Construction began on thousands of new homes throughout the region. The government promised about \$1 200 to every family that lost property in the earthquake, and distributed nearly \$500 million for construction projects. Nevertheless, Kate Simpson, an international aid worker, says nearly two million people were living in temporary shelters and only about one in five families affected by the earthquake were able to start construction on permanent houses.

Figure 2



At least 150 people were trapped beneath the rubble when an apartment tower collapsed in Islamabad.

“Many of the quake survivors are also starved for information; how to apply for compensation, where to pick up the money and, critically, how to properly rebuild their homes. Because the risk of future earthquakes is a significant issue, when people are rebuilding they need information on how to rebuild safely.”

Kate Simpson – International Aid Worker (Oxfam)

Value

4%

63. Using the case study and your geographical knowledge, provide two ways residents of this region respond to earthquake destruction.

2 marks for each of 2 reasons

- Relief efforts were carried out but were very slow and inefficient.
- Refugee camps were constructed for people left homeless by the earthquake.
- Teachers tried to reconstruct schools but students were too afraid to return to school.
- People tried to rebuild homes but reconstruction was slow.
- Governments and NGO's provided relief but residents found the relief hard to access.

Value

4%

64. Pakistan's and Kashmir's low level of development has slowed recovery efforts from the earthquake. Describe two social or economic factors that contributed to this problem.

2 marks for each of 2 factors fully described

1 mark if factor is listed

- poorly constructed homes
- little access to region due to inability to clear roads, etc.
- lack of adequate equipment to reach remote areas
- little attention paid to people after the event such that living conditions continued to deteriorate long after the earthquake
- poor communication networks
- people lacked the knowledge of how to rebuild more earthquake proof structures
- knowledge of proper building techniques was difficult to obtain
- difficult to get relief supplies to victims
- no power, little food and water, spread of disease
- many developing countries are involved in civil conflict and governments put money into war efforts as opposed to development

Value

6%

65. Using the case study and your geographical knowledge, propose three possible solutions to decrease deaths, injuries and the amount of property damage that may occur in future earthquakes.

2 marks for each solution

- early warning systems such that people may prepare or evacuate
- plans in place to make sure victims receive adequate food and water
- greater influx of money during relief effort such that life returns to normal as quickly as possible
- obtaining adequate equipment so roads can be cleared and remote villages reached
- proper medical facilities in place
- improved communication such that victims are aware of relief efforts, etc.
- establishment of building codes
- development of evacuation plans

Units 1-5

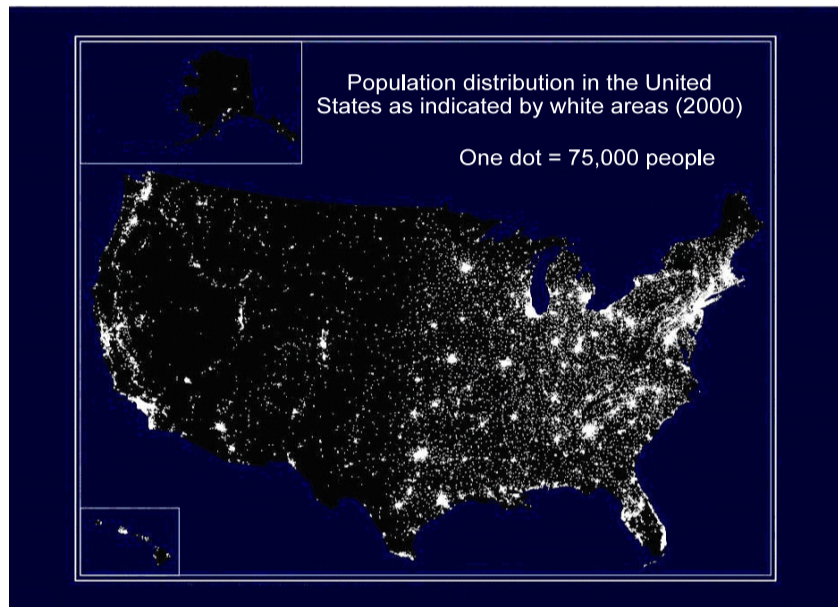
CASE STUDY 2: The Power of Place

General Motors (GM) announced in January 1985 that it was designing an entirely new car called the Saturn, and it would need a factory somewhere in the United States to build it. The announcement touched off a fierce competition among states and localities to become home for the plant. General Motors used geographic factors of site and situation to narrow the choice of locations and to make the final selection.

General Motors felt that the most critical factor was the cost of delivering assembled vehicles from the factory to the consumer. The company calculated the optimal location for the plant to be within a 1.2 million square kilometre area with a radius of roughly 500 kilometres centered on south central Ohio. Locations outside the circle were calculated to add between \$400 and \$500 per vehicle in freight charges, in part because truck drivers would be required to stop overnight more often, as well as drive longer distances.

Figure 1

General Motors began to examine other factors that would influence their final decision. The search was limited to a 400 hectare site less than 50 kilometres from a metropolitan area of at least 250,000 people, which also contained a major university and airport. The site also had to be near two major long distance interstate highways and a rail line. Eleven major metropolitan areas met this criteria.



Topographic maps were crucial to the selection committee in narrowing down the choices. These maps displayed elements of the human landscape, such as roads, rail lines, dams and buildings, as well as physical features such as lakes, rivers, and forests. These maps also displayed contour lines which helped the committee determine if sites were hilly or flat.

If the sites under consideration passed the topographic screening process, additional information was selected including the suitability of soil for construction, neighboring landscape activities and the number of owners on the potential selection site. Also of concern were local tax rates and the cost and availability of utilities such as water, sewer, natural gas and electricity.

After seven months of study, GM announced its factory site: Spring Hill, Tennessee, then a village of 100 inhabitants, 50 kilometres south of Nashville. The first Saturn rolled off the assembly line in 1990.

Just-in-time Delivery

Many automobile manufacturers in the United States have adopted a Japanese production method known as “just-in-time delivery”.

Just-in-time is an inventory control system based on the idea that instead of maintaining large inventories of parts within a car manufacturing facility, each workstation on an assembly line keeps only a few hours supply of parts on hand at any given time. Very small amounts of parts are ordered by workers as they are used. Once an installer finishes with one container of parts, a new one drops into place, and the worker pulls his inventory ticket and processes the new order. The order is then sent to nearby parts suppliers located chiefly on the highways Routes 65 and 75 (Figure 2) where parts are packaged and delivered to the factory for installation within about eight hours. No paperwork, no middle managers, and most importantly, no space-consuming idle inventory.

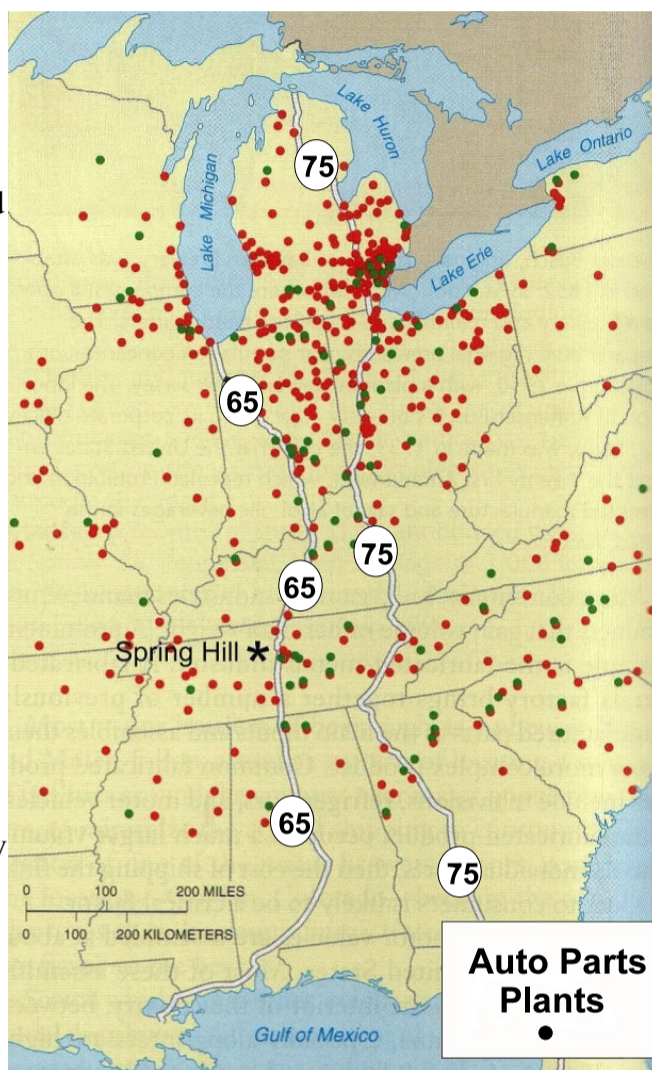
Just-in-time manufacturing is reshaping the factory floor and is, on a much larger scale, also changing the geography of parts supply networks. The old mass production process more easily accommodated parts shipped from around the world - an engine from Germany, a transmission from Japan, bumpers from Korea - as an integrated individual car was produced. But just-in-time puts a premium on proximity and quality control. Parts suppliers in the Midwest have settled along two major highways, near the assembly plants they serve.

Distance and Accessibility - Transportation Networks

Why did Japanese automakers set up production in the Midwest? The answer is distance and accessibility. The major automakers of Japan have virtually eliminated the greatest portion of their shipping costs by setting up shop in the midst of their market. The centrality of the Midwest, not only to a large consumer base but also to existing parts manufacturers and suppliers, was a key element in the transmigration of this industry.

The placement of these new factories was linked to transportation networks already existing in the U.S. infrastructure. When choosing factory sites, the Japanese considered the proximity of existing parts manufacturers to new factory sites and to defined highway systems. This increased the efficiency of parts ordering while, simultaneously, the just-in-time production method decreased the need for large inventory storage.

Figure 2



Value

4%

66. Automobile manufacturers use site and situation factors in deciding the location of their factories. Explain the concepts of site and situation and provide one example of each from the case study.

1 mark for each definition (site and situation)

1 mark for each example

- Site: physical aspects of the location
- land hilly or flat
- adequate land available for expansion
- suitability of soil for construction
- neighboring landscape activities
- cost and availability of water, sewer, natural gas, electricity, etc.

- Situation: location of the factory (site) in relation to other services in the surrounding area
- proximity to major state highways and railways
- proximity to large metropolitan area with university and airport
- local tax rates
- proximity to parts suppliers and manufacturers
- large consumer base in immediate area

Value

4%

67. Using evidence from the case study, explain whether GM's Saturn factory is either market or resource-oriented. Provide two pieces of evidence to support your choice.

1 mark for choice of market or resource-oriented

1.5 marks for each of 2 pieces of evidence

- GM's Saturn factory is "market-oriented"
- GM wanted to locate in an area of high population to provide a large consumer base within a small area. This would cut down on the transportation cost of the finished product.
- make use of existing transportation routes and infrastructure
- proximity to existing parts manufactures and suppliers

Value

6%

68. *Anytime factories locate in an area, there is concern about pollution and the environment. Industry has grown in the Spring Hill area in recent years creating environmental concerns. Identify three environmental risks threatening the Spring Hill area and propose a solution for each.*

1 mark for identification of each of 3 risks

1 mark for each of 3 solutions

- increased problems with garbage and sewage disposal
- problems with water supply
- increased air pollution from parts manufacturers
- increased air pollution from large increase in population and overall economic activity
- destruction of green zones/wetlands, etc. as industries expand
- traffic congestion and noise pollution
- destruction of forested areas by clear cutting for expansion
- solution will depend on the risk identified

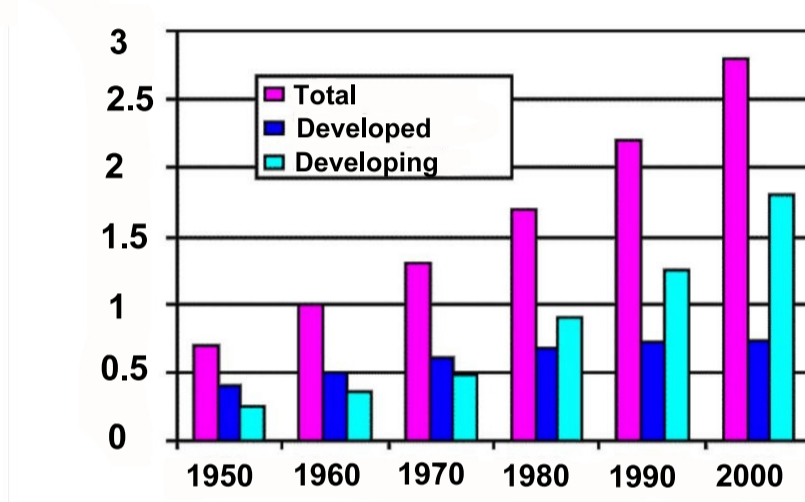
Do only ONE of the Units in Section D. Note: Both units use Case Study 3 below.

Either: Unit 6 - Population Distribution and Growth (#s 69 and 70)
Or: Unit 7 - Settlement and Urbanization (#s 71 and 72)

CASE STUDY 3: Population Change and Urbanization

Throughout most of human history the world's population has lived a rural lifestyle, but its population is quickly moving to cities. For example, in 1950, less than 30% of people lived in urban areas. This figure grew to 47% by the year 2000 and is expected to exceed 60% by 2025. Presently, developed countries have a higher percentage of urban residents than developing countries; nevertheless, it is expected that most of the future urban growth will take place in poorer countries. The rate of urbanization in both types of countries is significantly impacting the land.

Figure 1: Urbanization Growth Rate: Developed and Developing Countries



Why So Much Urbanization?

Urban areas are rapidly growing throughout the world because of natural increases in populations. However, migration is also a key demographic factor. While much of the rural to urban movement takes place within the borders of countries, migration between countries is increasing because of various push and pull factors. Generally, international migration consists of refugees and labourers that move in search of jobs and a better lifestyle. It is estimated that greater than 2% of the world's population have moved from their country of origin in search of these goals.

Table 1: Population Change for Selected Countries, 1971-2007

Country	Population 1971	Population 1991	Population 2007
Ecuador	5 890 000	10 700 000	13 760 000
El Salvador	3 390 000	5 300 000	6 950 000
Mexico	48 933 000	88 600 000	108 700 000
Sudan	15 186 000	25 200 000	39 380 000
Uganda	9 500 000	18 000 000	23 300 000

(Estimated to nearest thousand)

In agricultural economies, people are often “pushed” from their land because of the law of diminishing returns. Simply put, this means that because of advanced technology only a certain number of individuals are needed to make some rural farms profitable. Moreover, the prices paid to these farmers for their outputs compared to the prices they must pay for inputs cause many of them to live below the poverty line.

In addition to the push factors which drive many from rural lands, strong pull factors exist which

attract these individuals to urban areas. The strongest factor is “agglomerating economies.” In summary, geographers use this term to refer to the savings one can get by serving the needs of a large and growing market place in a concentrated urban area. As a result, distance is reduced between producer and consumer, thereby favouring many potential labourers.

Population Growth and Urbanization

An interesting aspect of urbanization started in North America following the Second World War. Suburban living symbolized the American dream of returning to nature in search of a better quality of life. In Europe, as well, urbanization continued. It is estimated, for example, that between 1969 and 1999 the urbanized land areas of France increased five times. Opponents of such rapid growth are concerned with increased traffic, pollution of air and water, flooding and loss of agricultural land, parks and open space. They also believe the strain placed on transportation and water and sewer infrastructures are issues which need to be addressed.

The pattern of urban growth in many developing countries, as illustrated in Figure 1, is also requiring the usage of more land. In many of the countries of East Asia, for example, improved communication and transportation linkages make outlying areas more accessible to the migrant workforce. As a result, some of these areas are transformed from agriculture to manufacturing economies. Conversely while some areas are beginning to prosper, in other large cities throughout the world such as Mexico City, nearly 40% of the city-dwellers face issues related to poverty and destruction of the environment.

“As roads stretch cities to new limits, paving over farms and forests, polluting air and water, and wasting motor fuel, {urbanization} is beginning to seriously endanger the planet. What we need now is for some prominent national capitals to demonstrate what a shift toward more compact, energy efficient, and people - friendly urban design can do.”

Molly O’ Meara Sheehan, Author, “What Will It Take to Halt Sprawl?”

“... we now need to build urban areas yet again that are at least equivalent in size to the cities we have already built, we need to do it better, and we need to do it in a very short time.”

S. Angel, Dynamics of Global Expansion

Do only ONE of the Units in Section D.

Either: Unit 6 - Population Distribution and Growth (#s 69 and 70)
Or: Unit 7 - Settlement and Urbanization (#s 71 and 72)

Unit 6 - Population Distribution and Growth

Value

4% 69. Using examples from the case study, describe two push and/or pull factors that may influence a person's decision to migrate from rural to urban areas.

2 marks for each of 2 factors

- refugees and laborers in search of jobs and a better life style
- people pushed from agricultural land because technology is taking away their jobs
- many rural farmers are very poor because the price paid for outputs compared to that paid for inputs leads to reduced profit. "law of diminishing returns"
- "agglomerating economies": the benefit a company gets by serving a large and growing market place in a concentrated urban area

Value

6% 70. Table 1 illustrates the trends of population change for selected developing countries. Based on the information from the case study and your geographic knowledge, should these countries control their population growth rates? Using three reasons, explain why or why not.

2 marks for each of 3 reasons

- large populations increase traffic, pollution of air and water and flooding
- loss of agricultural land
- reduced space for parks and open spaces
- countries are poor and often have problems feeding and housing present populations. Increased growth will make this even more difficult.
- overcrowding and the problems it brings with it
- increased strain placed on transportation, water and sewer infrastructures
- increased crime rates, disease, etc.
- increased pressure on health care system
- higher unemployment rates in already depressed economies
- increased poverty
- environmental destruction
- more economic diversity
- more skilled workforce; more workers
- cultural and religious values, etc.

Unit 7 - Settlement and Urbanization

Value

4% 71. Using two examples from the case study, explain how situation influenced the continuing trend of urbanization.

2 marks for each of 2 examples fully explained

- “agglomerating economies”: the benefit a company gets by serving a large and growing market place in a concentrated urban area
- as transportation and communication linkages make outlying areas more accessible to the migrant workforce, rural areas are transformed from agricultural to manufacturing economies
- as cities spread outward to rural areas increased numbers of agricultural workers move into the city in search of a better way of life

Value

6% 72. Using problems identified in the case study, suggest three strategies that could be used to improve the quality of life in cities.

1 mark for each of 3 problems

1 mark for each of 3 strategies

Problems identified in the Case Study

- increased traffic
- air and water pollution
- flooding
- loss of agricultural land, parks and open spaces
- poverty
- environmental destruction
- strain on transportation, water and sewer infrastructure, etc.
- strategy depends on problems identified