

PART I

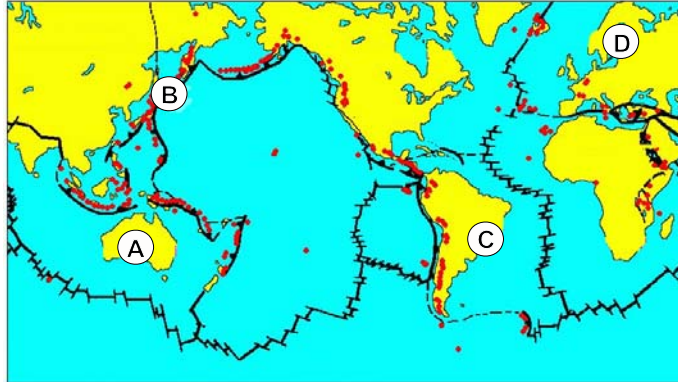
Instructions: Shade the letter of the correct answer on the machine scorable answer sheet provided.

SECTION A

TOTAL VALUE: 42%

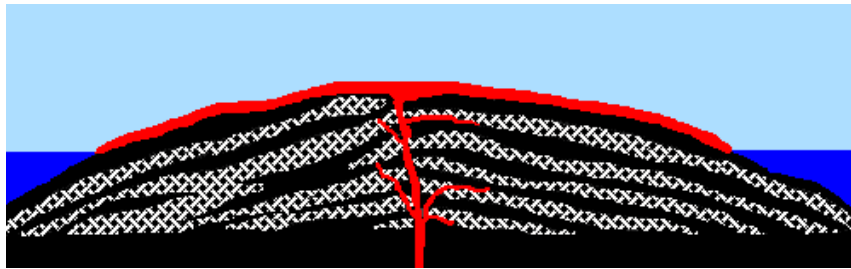
Instructions: Do ALL of the Questions in Part I, Section A.

1. Which is an area of active volcanic activity in the graphic below?



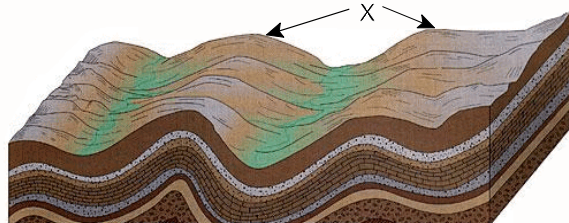
- (A) A
- (B) B
- (C) C
- (D) D

2. Which type of volcano is illustrated below?



- (A) ash and cinder
- (B) composite
- (C) lava
- (D) shield

3. Which is identified by X in the graphic below?



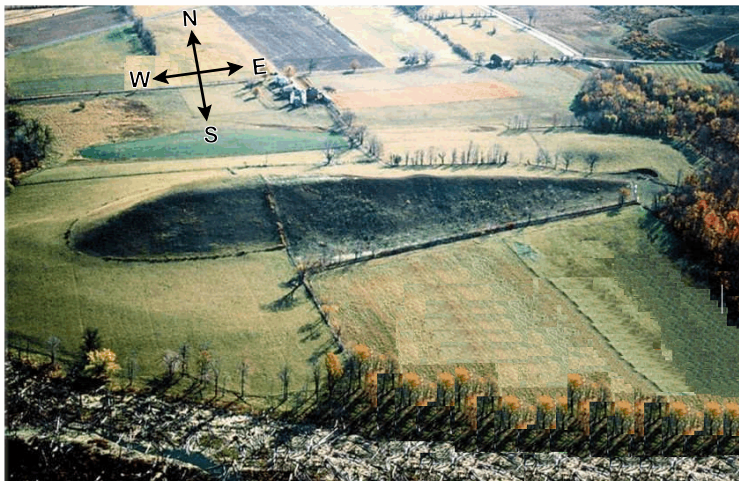
- (A) anticline
- (B) normal fault
- (C) reverse fault
- (D) syncline

4. Which process involves carbonic acid reacting with a silicate to form a new, soft clay mineral?

- (A) exfoliation
- (B) frost fracture
- (C) hydrolysis
- (D) oxidation

5. Which factors would increase the rate of chemical weathering?
- (A) high precipitation and cold temperatures
 - (B) high precipitation and warm temperatures
 - (C) low precipitation and cold temperatures
 - (D) low precipitation and warm temperatures
6. Which stage of river development has a V-shaped valley with a relatively small volume of water?
- (A) late maturity
 - (B) maturity
 - (C) old age
 - (D) youth
7. What glacial feature consists of a large boulder of rock differing in character from the pre-existing rock on which it rests?
- (A) drumlin
 - (B) erratic
 - (C) outwash plain
 - (D) terminal moraine

8. In which direction did the continental glacier advance in the photograph below?



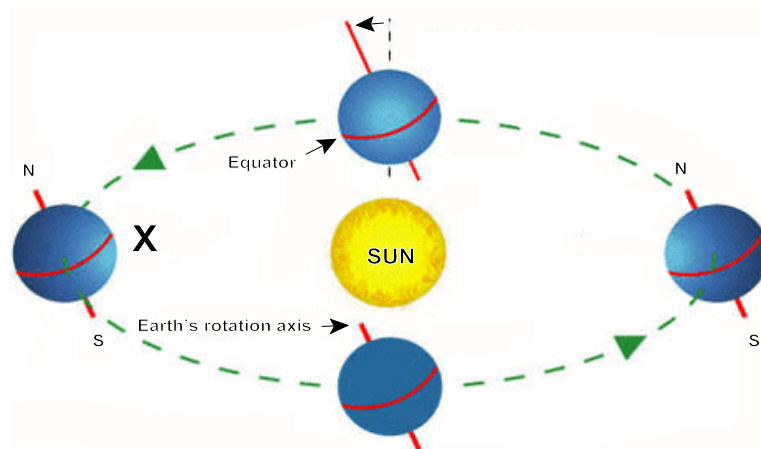
- (A) north to south
 - (B) east to west
 - (C) south to north
 - (D) west to east
9. Which is identified by X in the graphic below?



- (A) delta
- (B) sea arch
- (C) sea stack
- (D) spit

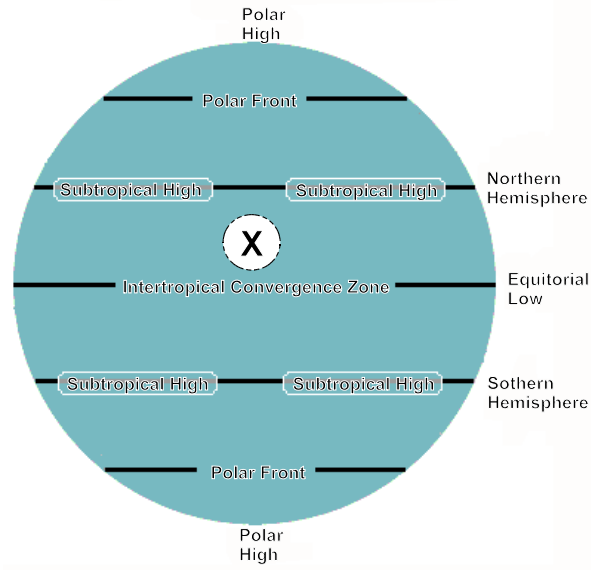
10. How does cloud cover influence the range of temperatures from day to night?
- (A) temperature is unaffected by clouds
 - (B) temperature range decreases
 - (C) temperature range increases
 - (D) temperatures remain constant

11. What is identified by **X** in the Northern Hemisphere?



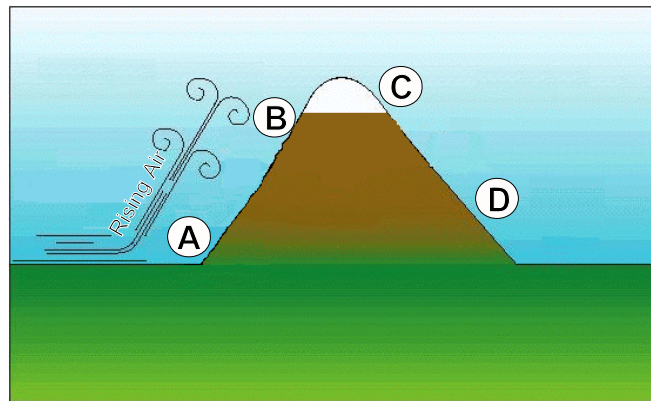
- (A) fall equinox
 - (B) spring equinox
 - (C) summer solstice
 - (D) winter solstice
12. What factors account for variations in sunlight hours as the seasons change?
- (A) coriolis effect and air pressure
 - (B) prevailing winds and ocean currents
 - (C) rotation and curvature of Earth
 - (D) tilt and revolution
13. Which explains why temperatures decrease as we move from the equator to the poles?
- (A) curvature of Earth
 - (B) movement of air from high to low pressure belts
 - (C) revolution of Earth around the sun
 - (D) rotation of Earth on its axis
14. What type of precipitation results when warm, moist air collides with cool, dry air?
- (A) convective
 - (B) frontal
 - (C) orographic
 - (D) relief
15. What is the relationship between climate and elevation?
- (A) elevation has no influence on temperature and precipitation
 - (B) the higher the elevation, the higher the temperature
 - (C) the higher the elevation, the higher the precipitation
 - (D) the higher the elevation, the lower the temperature

16. What prevailing wind system is indicated by **X** in the graphic below?



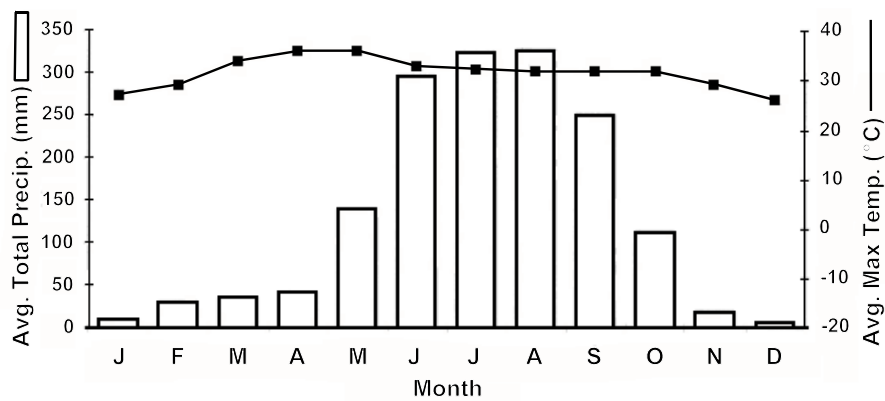
- (A) Northeast Trade Winds
- (B) Polar Easterlies
- (C) Southeast Trade Winds
- (D) Prevailing Westerlies

17. Which point will receive the highest amount of precipitation in the diagram below?



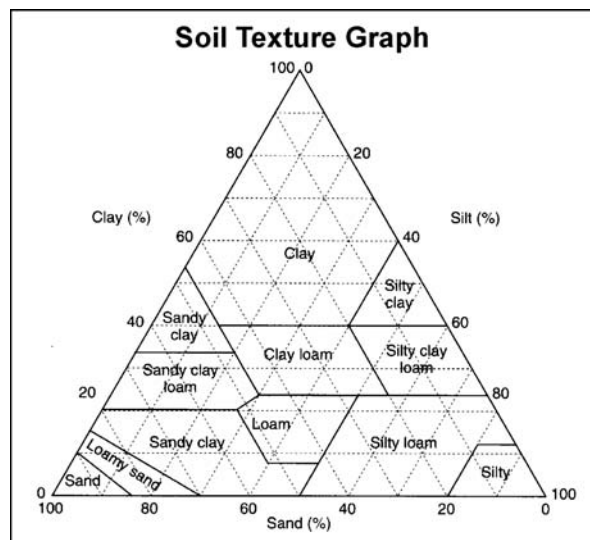
- (A) A
- (B) B
- (C) C
- (D) D

18. Which climatic zone is illustrated in the climograph below?



- (A) boreal forest
- (B) temperate
- (C) tropical wet
- (D) tropical wet and dry

19. Which is a community of plants and animals within a particular physical environment?
- (A) ecosystem
 (B) food chain
 (C) food web
 (D) pyramid
20. What regions are associated with thick forests of coniferous trees, long snowy winters, and summers with moderate temperatures?
- (A) boreal forests
 (B) temperate forest
 (C) tropical rainforest
 (D) tundra
21. What soil texture is associated with 30% sand; 30% clay; and 40% silt?



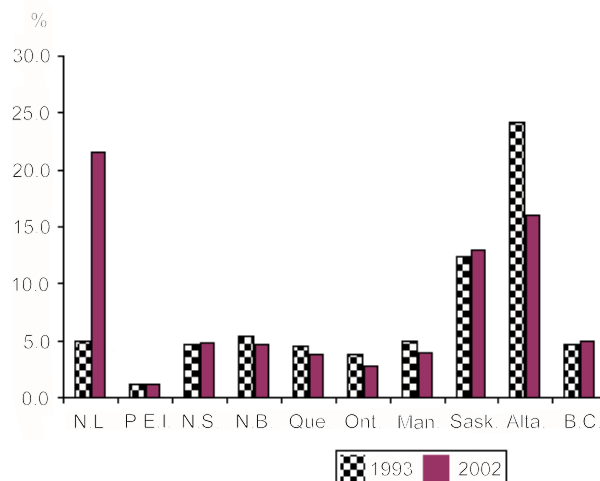
- (A) clay loam
 (B) sandy clay
 (C) sandy loam
 (D) silty clay
22. According to the chart below, which continent has the highest percentage degraded drylands?

Continent	Total Agriculturally Used Drylands	Degraded Drylands
Australia	701.21	375.92
Europe	145.58	84.28
North America	578.18	328.62
South America	420.67	305.81

- (A) Australia
 (B) Europe
 (C) North America
 (D) South America
23. Which would be an output in a farming operation?
- (A) carrots
 (B) maintenance
 (C) tractor
 (D) weeding

24. Which is a natural input in a farming operation?
- (A) equipment
(B) labour
(C) technology
(D) water
25. Which is a human input into a farming operation?
- (A) capital
(B) climate
(C) soil
(D) water
26. Which physical factor must be considered when making a decision to recover offshore oil and gas?
- (A) capital
(B) climate
(C) shift rotation
(D) skilled labour
27. Into what category would highly skilled labour fall when making a decision to recover offshore oil and gas?
- (A) environmental
(B) human
(C) physical
(D) robotic
28. Based on the graph below, which province had the highest economic growth due to oil production from 1993 to 2002?

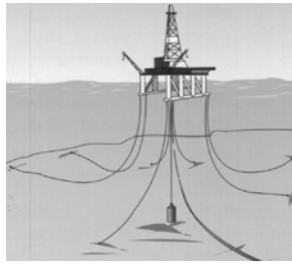
GDP of oil production from 1993 to 2002 for Canadian provinces



- (A) Alberta
(B) Newfoundland and Labrador
(C) Ontario
(D) Saskatchewan

29. Which drilling system is ideal for deep water and extreme climatic conditions?

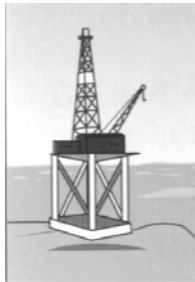
(A)



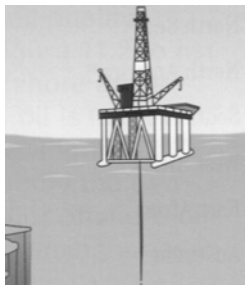
(B)



(C)



(D)



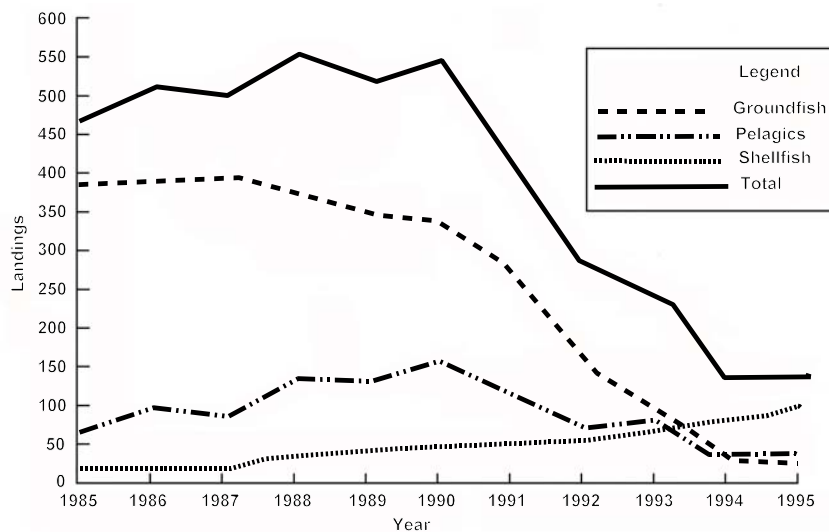
30. Which type of agriculture involves slash and burn methods and is normally associated with extensive farming?

- (A) agribusiness
- (B) mixed farming
- (C) nomadic herding
- (D) shifting cultivation

31. Which has the most negative impact on the marine ecosystem?

- (A) gill nets
- (B) otter trawls
- (C) purse seines
- (D) trolling

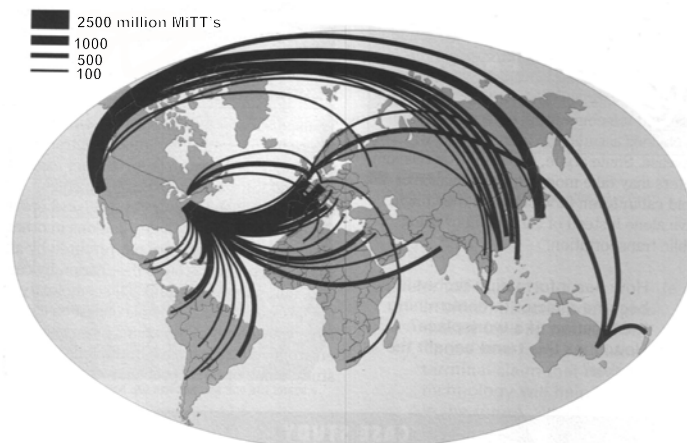
32. Based on the graph below, what is true of fish landings in Newfoundland and Labrador from 1985 to 1995?



- (A) groundfish landings have decreased
 (B) pelagic fish landings have increased
 (C) shellfish landings have decreased
 (D) total fish landings have increased
33. Which is a natural input in a car assembly plant?
- (A) capital
 (B) energy
 (C) labour
 (D) machinery
34. Which is a manufacturing operation that requires high levels of financial investment for purchasing, installing and maintaining equipment?
- (A) capital intensive
 (B) labour intensive
 (C) light industry
 (D) primary industry
35. Which is produced by a light industry?
- (A) bicycle
 (B) fishing trawler
 (C) railway car
 (D) small plane
36. Which is the best example of a market-oriented product?
- (A) nickel
 (B) pulp and paper
 (C) soft drink
 (D) wine
37. What sector of the economy is related to goods and services?
- (A) primary
 (B) quaternary
 (C) secondary
 (D) tertiary

38. Which economic sector generally consists of medical, educational and protective services?
- (A) distributive
 (B) financial
 (C) government
 (D) personal

39. Where is the greatest concentration of mass communication in the graphic below?



MiTT's: Measured in Minutes of Telecommunication Traffic

- (A) Australia
 (B) Central Africa
 (C) Europe
 (D) South America
40. Which factors best explain why large amounts of fish caught in Newfoundland and Labrador waters are now being processed in China.?
- (A) appropriate technology, cheap labour and low transportation costs
 (B) cheap labour, high transportation costs and expensive land prices
 (C) expensive land prices, poor technology and cheap energy
 (D) high transportation costs, cheap land prices and high energy costs

41. Which economic indicator is defined below?

The total value of the production of goods and services in a nation over a year, together with any money earned from investment abroad, less the income earned within the nation by non-nationals, divided by the nation's population.

- (A) Gross National Product
 (B) Gross National Product per capita
 (C) percentage employed by sector
 (D) percentage employed in manufacturing
42. Which is most developed according in the table provided?

	GNP per capita (US\$)	Death Rate (per 1000)	Birth Rate (per 1000)	% Employed in service industry
(A)	7 700	22	53	4.9
(B)	8 200	24	49	50.9
(C)	22 300	14	15	70.4
(D)	26 900	9	17	75.6

SECTION B**TOTAL VALUE: 8%****Do only ONE of the Units in Section B.**

Either: Unit 6 - Population Distribution and Growth
Or: Unit 7 - Settlement and Urbanization

UNIT 6 - Population Distribution and Growth

43. Which refers to the number of people living on a specific area of land?

- (A) density
- (B) distribution
- (C) growth
- (D) ratio

44. What is the percentage of change in a population over a given period of time?

- (A) absolute growth
- (B) actual change
- (C) growth rate
- (D) natural increase

45. Which has the highest rate of natural change according to the table provided?

	Number of Births	Number of Deaths
(A)	13 500	21 000
(B)	61 600	44 000
(C)	112 200	142 800
(D)	808 600	923 800

46. What formula is shown below?

$$\frac{\% \text{ under 15} + \% \text{ over 64}}{\% \text{ of working age (15-64)}} \times 100$$

- (A) actual growth rate
- (B) dependency ratio
- (C) population density
- (D) population distribution

47. Which would contribute most to “graying” of a population?

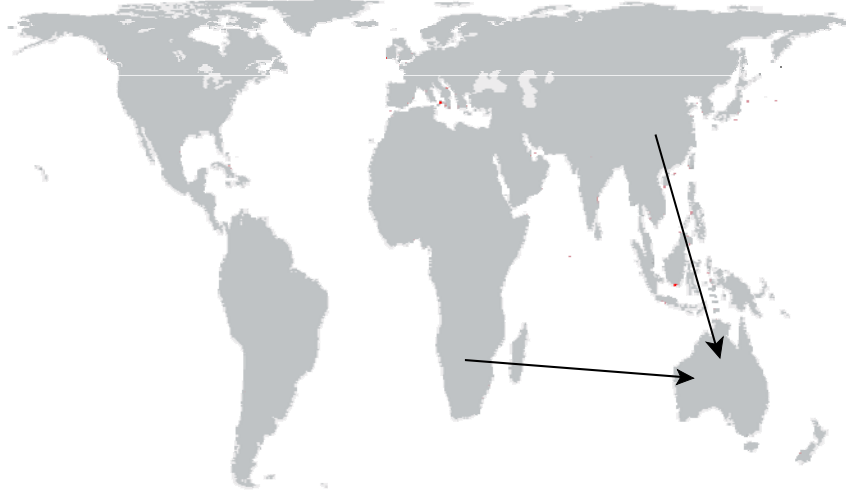
- (A) improved healthcare
- (B) infant mortality
- (C) overpopulation
- (D) transportation linkages

48. What is defined as the movement of people into or out of a country?

- (A) immigration
- (B) emigration
- (C) migration
- (D) out migration

49. Which is a push factor?
- (A) civil war at point of origin
 - (B) distance between origin and destination
 - (C) job opportunities at point of origin
 - (D) language at destination

50. What are the major source areas of immigrants to Australia?



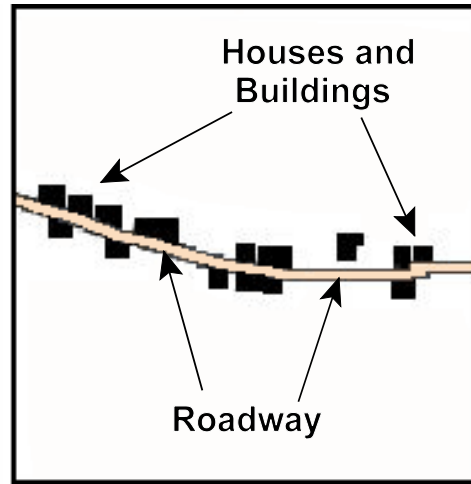
- (A) Africa and Asia
- (B) Asia and South America
- (C) Europe and Africa
- (D) North America and Europe

Unit 7 - Settlement and Urbanization

Note: If you are completing this unit, please ensure you shade bubbles for 51-58

51. Which characteristics describe a rural area?
- (A) high municipal taxes, primary sector jobs and post secondary schools
 - (B) low population density, high municipal taxes and public transportation
 - (C) primary sector jobs, low population density and limited services available
 - (D) public transportation, limited services available and post secondary schools
52. Which type of settlement is defined as a place where buildings are grouped closely together, with a clearly defined nucleus?
- (A) acropolis
 - (B) compact
 - (C) linear
 - (D) loose-knit

53. What type of settlement is illustrated below?



- (A) composite
 - (B) confluence
 - (C) linear
 - (D) loose-knit
54. Which type of settlement is located at the junction between an overland, and a river transportation route?
- (A) head-of-navigation
 - (B) peninsula
 - (C) river-meander
 - (D) sheltered harbour
55. Which defines situation?
- (A) distinct features or qualities of a general geographical area
 - (B) distinct features or qualities of a specific location
 - (C) setting or position of a location as it relates to other places
 - (D) setting or position of a location as it relates to the capital city
56. Which refers to the movement of rural populations into towns and cities?
- (A) emigration
 - (B) immigration
 - (C) overpopulation
 - (D) urbanization
57. Which is an example of industrial land-use?
- (A) large shopping malls
 - (B) real estate companies
 - (C) town-houses
 - (D) warehouse facilities
58. Which urban quality of life indicator would be virtually impossible to change?
- (A) climate
 - (B) crime
 - (C) transportation
 - (D) water and sewage

PART II

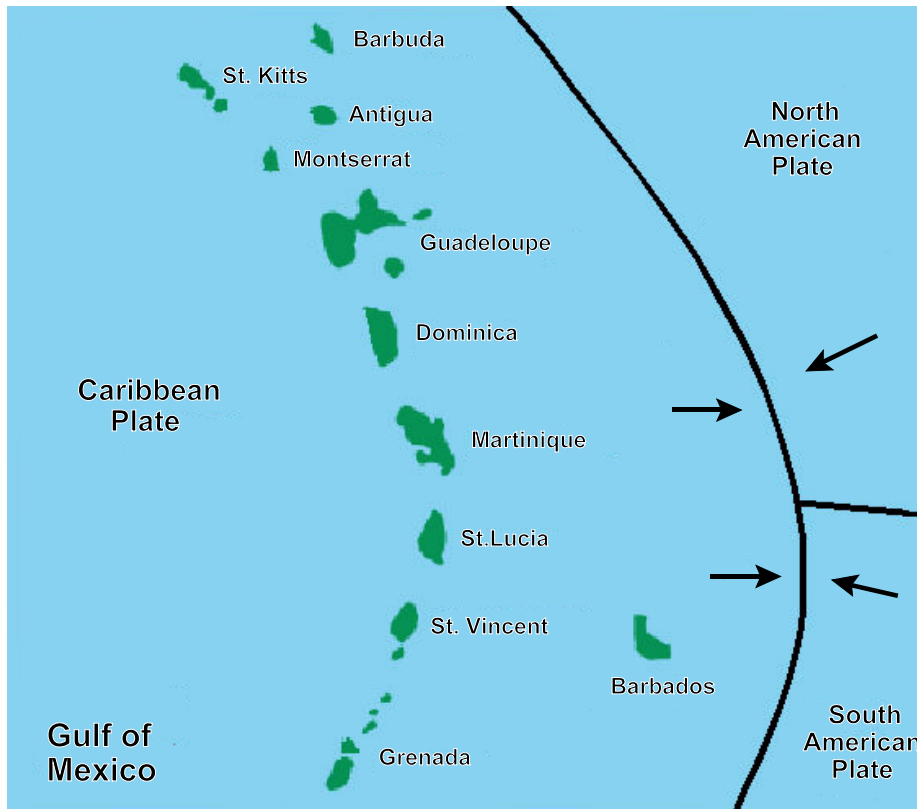
SECTION A

TOTAL VALUE: 8%

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

Value

4% 59. Explain how colliding tectonic plates influenced the formation of the chain of islands in the diagram below.



SECTION B

TOTAL VALUE: 4%

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. Describe one factor that affects birth rates and one factor that affects death rates.

UNIT 7 - Settlement and Urbanization

Value

4% 62. Describe two site factors that influence the location of a settlement.

Part II

Section C

TOTAL VALUE: 28%

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

Units 1-5

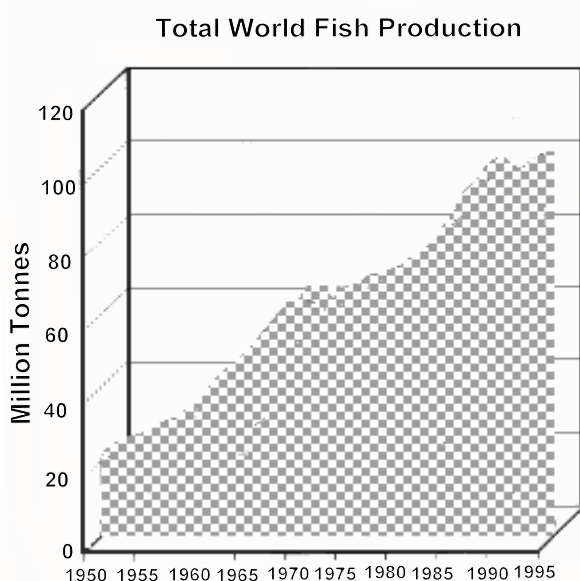
CASE STUDY 1: World Fisheries: Have we Reached a Crisis?

The oceans support a wide variety of plants and animals, which co-exist in relative harmony, each fulfilling the specific niche and role they have in the ecosystem. However, all is not well in this complex ecosystem. Over-fishing has altered the ecological balance in some areas; as commercially valuable species have been exhausted they have been replaced by other, less commercially desirable, species. Deforestation, industrial pollution, agricultural runoff, domestic sewage, and urban development have degraded fish habitat and reduced productivity. Much of the most important and productive coastal habitat, consisting of estuaries, mangrove, wetlands, and coral reefs, has already been damaged or destroyed by development.

Most Canadians are aware of the collapse of Atlantic groundfish stocks like the northern cod and of the problems that beset British Columbia's salmon fishery. Canada's experience with its fisheries is not unique, but is rather part of a global phenomenon in which relentless fishing pressure and environmental degradation are pushing fish stocks to the brink of destruction.

At one time, the oceans and the fish that swam in them seemed so vast that they could hardly be affected, much less harmed, by human activities. The nineteenth-century biologist Thomas Huxley wrote, "I believe that the cod fishery...and probably all the great sea fisheries are inexhaustible." Huxley, like many others, was wrong. Most of the world's most important fish stocks have now been fished to the limit of sustainability and beyond. A number have collapsed altogether. In 1995, the Food and Agriculture Organization (FAO), stated that 69% of the world's conventional species were either fully exploited, over exploited, depleted, or rebuilding from a depleted state. The FAO concluded that the operation of the world's fisheries, as they existed, could not be sustained and that significant ecological and economic damage had already occurred.

Figure 1



The dramatic increase in world fisheries production is illustrated in Figure 1. In just four decades, between 1950 and 1989, total world fisheries production (including fresh water and aquaculture) increased by 500%, from 20 million tonnes to just over 100 million tonnes. By comparison, the total world marine catch in 1900 was only 3 million tonnes. Global capture fisheries peaked in 1989 but the decline since then has been offset by increased aquaculture production. The aquaculture sector has shown great promise world wide, and particularly in Canada. For instance, since the closure of the commercial Atlantic Salmon fishery in Newfoundland and Labrador, customer demand has been met by very successful "salmon farms" throughout Atlantic Canada.

Several decades of over fishing in most of the world's major fisheries has pushed many commercially important fish populations into steep declines. For example, Canada's northern cod declined to a point of collapse by 1992. Catches are falling, despite the fact that expanding fleets are fishing harder, spending more time, effort and money than ever before in trying to maintain them. Some commercially important stocks are in such a critical state that all fishing has been shut down, or sharply curtailed. Hundreds of millions of people traditionally dependent on fishing for food and livelihoods face resource depletion, competition from industrial and distant water fleets, and loss of access to traditional marine food supplies.

Destructive Production and Fishing Gear

The increased fishing pressure and the competition amongst fishing nations and their fleets severely stresses fish stocks and the marine environment. The widespread use of unselective fishing gear and indiscriminate fishing practices result in one-quarter of all the fish brought on board fishing vessels being discarded, usually dead or dying. Commercial fishing vessels throw back, on average, about 27 million tons of unwanted fish annually. That amounts to about half of all the fish caught from the oceans each year that are actually consumed by humans. Along with these, millions of other marine animals are being incidentally captured and killed in fishing operations.

Some fishing gear is particularly deadly for certain fish in some situations. Drift nets indiscriminately kill millions of marine creatures, while targeting just one or two commercially valuable species. Marine mammals are frequently killed in great numbers in trawls, set nets and purse seine nets. In addition, there is severe damage caused by fishing operations that use destructive gear and fishing practices, like bottom trawling, that physically disturbs marine habitats such as the ocean floor, sea grass beds or coral reefs.

Offshore Oil and Gas: A New Threat

Historically, offshore trawlers fished in the area of 3LT, east of Newfoundland, where drilling is currently taking place for Hibernia and Terra Nova. But it is also an area where smaller boats (65-footers) have fished for generations. It is home to American Plaice (flounder) which spawn throughout the area. Up until 1992, American Plaice was a key fish stock that provided year-round work for hundreds of fish harvesters and thousands of plant workers along the south coast of the province. Other important species fished in the area include yellowtail, crab, cod, scallops, swordfish, and tuna. In fact, the crab resource in this area has proven to be quite healthy and lucrative.

“Can the two industries operate side by side?” This was the question directed to Earl McCurdy, president of the Fish, Food and Allied Workers (FFAW) at a presentation given on April 23, 2001. Mr. McCurdy continued by stating that “the short answer should be yes, but a lot more effort must be made with respect to communications and discussions between the two industries. In addition, the oil and gas industry has a responsibility to ensure its activities have minimal impacts on fish stocks and habitat.” If a major oil or gas spill were to occur the damage could be catastrophic destroying the whole ecosystem. Birds, a rebuilding cod stock, a lucrative crab fishery, and many other potentially renewable resources would be destroyed. This would quickly result in a loss of thousands of fishery related jobs. “Ultimately, we must remember that the fishery, if protected, will provide for generations to come and will be around long after the last barrel of oil is drilled from the Grand Banks.” (McCurdy, 2001)

Over fishing: Short-term Gain for Long-term Pain?

Today, there isn't a fishing region in the world that does not suffer from fisheries management decisions designed to satisfy short-term economic or political objectives rather than protecting the marine environment and conserving fish populations. Commercial fishing in many countries has been very poorly managed. Even in a few countries where relatively advanced fisheries management systems have been in place for many years, they have, almost without exception, failed to control the conditions and stem the abuses that lead to over fishing and destructive environmental impacts. Indeed, in many countries, governments have played an important part in fueling the expansion of excessive fishing capacity and over-exploitation by providing lucrative subsidies and taxpayer funded handouts.

Quite simply, nature's limits have been breached by too many fishing vessels catching too many fish, very often in wasteful and destructive ways, and it cannot be allowed to continue if the oceans and the human communities around the world that depend on them are to survive. The full utilization of available fish stocks and profit maximization for industry have been the key goals of short-sighted fisheries development, while protection for the environment has taken a back seat. This has proven to be the formula for disaster in fishery after fishery, the world over, with the disastrous consequences for marine ecosystems and humanity already plainly visible around the world.

Value

4% 63. Using the case study, identify and explain two reasons for the dramatic decline in cod stocks.

Value

4% 64. Using the case study and your geographical knowledge, describe two negative impacts that industry and/or oil development has had on the ocean ecosystem.

Value

6% 65. Based on problems identified in the case study, propose and defend three possible strategies that could lead to a sustainable fishery.

Units 1-5

CASE STUDY 2: A STUDY OF VOLCANIC DEVASTATION

The Pacific Ring of Fire (Figure 1) is a zone of frequent and volcanic eruptions encircling the base of the Pacific Ocean in a 40 000 km horseshoe basin. In this region approximately 90% of the world's earthquakes and volcanic eruptions take place near the homes of over 2 billion people. Mount Vesuvius, which is arguably the most famous volcano in the world, is located outside the Ring of Fire. Besides its most devastating eruption in 79 A.D., it has since erupted over 200 times.



Like mountains, volcanoes are created by the floating of continental plates on the Earth's mantle. Over time the African plate converged with and pushed beneath the Eurasian plate. This caused a submerged deep ocean volcano adjacent to the Bay of Naples (Figure 2). Mount Vesuvius emerged due to the buildup of deposits from its many eruptions. Such convergence is associated with the formation of composite volcanoes (Figure 3). The picturesque mammoth of Mount Vesuvius, standing 1280 metres tall near Naples, Italy, is composed of layers of lava flow, and volcanic ash and cinders.

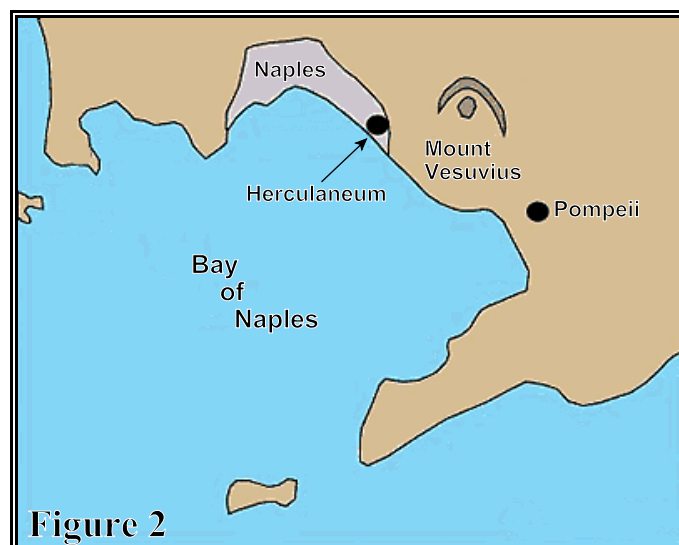
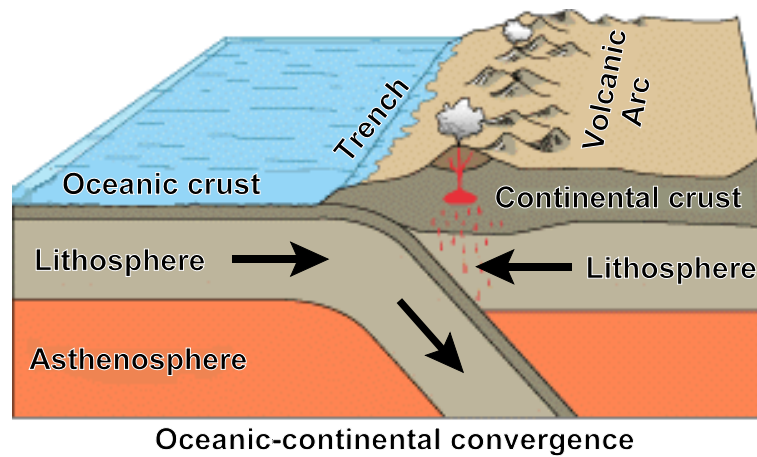


Figure 3



Deadly Eruption

Mount Vesuvius last erupted in 1971, but its most memorable eruption took place at 1:00 p.m. on August 24th in 79 A.D.. That eruption destroyed the city of Pompeii and claimed approximately 16 000 lives. Roman scholars witnessed and described the catastrophe in writing. Like many other volcanic eruptions it offered foreshadowing events. Months before the eruption the ground around Mount Vesuvius swelled and there were numerous small earthquakes. Unfortunately the citizens of Pompeii did not heed nor understand the significance of these events. Shortly thereafter, a pyroclastic eruption took place and for a day fragments of rock and lava fell. Moreover, a three-layered mushroom cloud of ash and lava fragments ejected into the air, engulfed citizens and flattened the city.

Why study Volcanoes: Scientific Evidence vs. Political Pressure

The fascination with Mount Vesuvius not only stems from its catastrophic eruption of 79. A.D., but also that it was the first ever documented eruption. Scientists have since used it as a basis for volcanic study. One lesson learned from Mount Vesuvius is that the time leading up to a volcanic eruption is very important.

The science of volcanology has progressed over the last 25 years, but it is still not an exact science in predicting if a volcano will erupt or what its severity will be. This often creates uncertainty for those living near the volcano. The initial prediction of an eruption by volcanologist often leads to mass evacuations of wide areas surrounding a volcano. However, if the eruption does not take place immediately, political consequences can be high. Local citizens can become restless, not see the volcano as being dangerous and create pressure to lift the evacuation order. In recent years in Mexico, Ecuador, Japan and the Philippines, evacuations have lasted for months with no major eruptions. The consequences, however, of lifting an evacuation order can be deadly. Aside from human casualties and physical damage an eruption can immediately cause, volcanoes such as Mount Pinatubo have taught us that areas impacted by an eruption can be made inhospitable for many years. What then should scientist do when faced with this dilemma?

Pinatubo Affects Economic Development

The eruption of Mount Pinatubo severely hampered the economic development of the surrounding region. Extensive damage to buildings and infrastructure cost millions of dollars to repair, and further costs were incurred in constructing dikes and dams to control the post-eruption lahars*.

In total, 364 communities and 2.1 million people were affected by the eruption, with livelihoods and houses being damaged or destroyed. More than 8000 houses were completely destroyed, and a further 73 000 were damaged. In addition to the severe damage sustained by these communities, roads and communications were damaged or destroyed by pyroclastic flows and lahars throughout the areas surrounding the volcanoes. The estimated cost of repairing the damage to infrastructure was 91 million Canadian dollars .

Many reforestation projects were destroyed in the eruption, with a total area of 150 square kilometres (37 000 acres) valued at 125 million pesos destroyed. Agriculture was heavily disrupted, with 800 square kilometres (200 000 acres) of rice-growing farmland destroyed, and almost 800 000 head of livestock and poultry killed. The cost to agriculture from the eruption was estimated to be 4.5 million Canadian dollars.

Damage to healthcare facilities, and the spread of illnesses in relocation facilities, led to soaring death rates in the months following the eruption. Education for thousands of children was seriously disrupted by the destruction of schools in the eruption. The gross regional domestic product of the Pinatubo area accounted for about 10% of the total Philippine gross domestic product. The GDP of this region had been growing at 5% annually before the eruption, but fell by more than 3% from 1990 to 1991.

**Lahar - a landslide of wet volcanic debris on the side of a volcano*

Value

4% 66. With the aid of Figures 1 and 3, explain how compressional forces at plate boundaries can lead to volcanic activity.

Value

4% 67. Explain two ways people respond to living in regions prone to volcanic activity.

Value

6%

68. Describe two negative economic effects that result from a volcanic eruption and propose a solution for each.

SECTION D**TOTAL VALUE: 10%****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: World Population: Trends and Challenges

The world population growth rate has decreased from its peak of 2 percent per year in the late 1960s to 1.2 percent today. The United Nations projects the world's population will reach 7 billion persons by 2012, 8 billion by 2027, and 9 billion by 2050.

While the overall population of the world will increase throughout the next four decades, considerable diversity is expected in the population growth of various countries. The population of many countries, especially those of Africa and Asia, will significantly increase; yet, fertility levels in some developed countries are so low that it will lead to a significant population decline. Population geographers will continue to closely watch this trend along with the trends of urbanization and population ageing.

Table 1

Top six countries in terms of population increase and decrease from 2000 to 2050			
A. Population Increase		B. Population Decrease	
Country	Population change, 2000-2050 (millions)	Country	Population change, 2000-2050 (millions)
India	572	Russian Federation	-35
Pakistan	162	Ukraine	-23
Nigeria	141	Japan	-15
Dem. Republic of the Congo	127	Italy	-7
China	118	Poland	-7
Bangladesh	114	Romania	-5

Urbanization

In 1950, 30 per cent of the world's population lived in urban areas. Today, urbanized areas account for approximately 50% per cent of the world's population, and this figure is expected to reach 61% by 2030. In developed countries this process of urbanization is already very advanced, and it is expected to reach 82% by 2030. In less developed countries, however, the number of urban dwellers is only expected to reach 50% by 2017.

Table 2

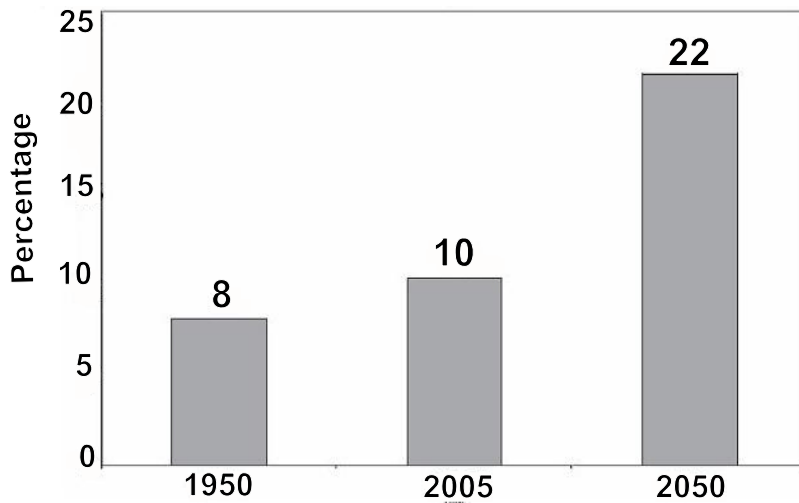
Population of Cities with 10 million inhabitants or more, 1950, 1975, 2005 and 2015 (millions)							
1950		1975		2005		2015	
City	Pop.	City	Pop.	City	Pop.	City	Pop.
New York	12.3	Tokyo	26.6	Tokyo	35.3	Tokyo	36.2
Tokyo	11.3	New York	15.9	Mexico City	19.2	Mumbai	22.6
		Shanghai	11.4	New York	18.5	Delhi	20.9
		Mexico City	10.7	Mumbai	18.3	Mexico City	20.6
				Sao Paulo	18.3	Sao Paulo	20.0
				Delhi	15.3	New York	19.7
				Calcutta	14.3	Dhaka	17.9
				Buenos Aries	13.3	Jakarta	17.5
				Jakarta	13.2	Lagos	17.0
				Shanghai	12.7	Calcutta	16.8
				Dhaka	12.6	Karachi	16.2
				Los Angeles	12.1	Buenos Aries	14.6
				Karachi	11.8	Cairo	13.1
				Rio de Janeiro	11.5	Los Angeles	12.9
				Osaka-Kobe	11.3	Shanghai	12.7
				Cairo	11.1	Manila	12.6
				Lagos	11.1	Rio de Janeiro	12.4
				Beijing	10.8	Osaka-Kobe	11.4
				Manila	10.7	Istanbul	11.3
				Moscow	10.7	Beijing	11.1
						Moscow	10.9
						Paris	10.0

Today's cities are sites of social advancement, wealth creation and instruments of globalization; but with urbanization comes many problems. Pollution, for example, is aggravated by traffic and by the increasing use of heating and air conditioning. Likewise, poverty creates problems by contributing to urban sprawl and decay. In many cases, city infrastructure has not been extended or improved since it was originally built. Railways, bridges, sewers, water mains and major roads have not been able to keep up with expansion and create enormous economic and social costs. Such problems create many challenges.

Population Ageing

Another challenging population trend in the world is that of population ageing. Throughout the twentieth century, the proportion of older persons (60 years or over) has risen substantially and will continue to rise well into the twenty-first century (Figure 1).

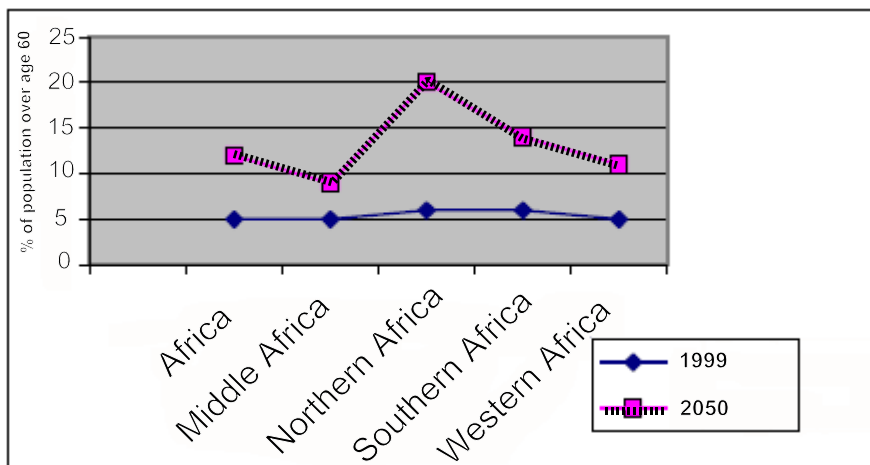
Figure 1



Proportion of world population aged 60 years or over: 1950 - 2050

It is estimated that by the year 2020, of the more than 1 billion people aged 60 years and older, more than 700 million will be from developing nations. Of significant interest to population geographers is the rate at which population ageing is taking place in developing countries. For example, in some developing countries an increase of between 200% and 300% may occur in the elderly population in a period of only 35 years.

Figure 2



Percentage of people over age 60 in 1999 and 2050 in developing African countries

Africa is presently the continent with the youngest population and is on the course of transition to the ageing process. With regards to the social and economic problems associated with this world wide phenomenon, for Africa it is problem that has to take a backseat to more pressing demographic issues such as: rapid population growth, high infant and child mortality, and excessive urban 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. According to Table 1 in the case study, the top six countries with increasing populations are developing. In comparison, the top six countries with declining populations are developed. Use two reasons to explain this trend.

Value
6% 70. Developed countries have problems with aging populations. Use three reasons to explain why developing countries do not currently experience this problem.

Unit 7 - Settlement and Urbanization

Value
4% 71. Describe two reasons why urbanization is occurring at a faster rate in developing countries than in developed countries.

Value
6% 72. “Today’s cities are sites of social advancement, wealth creation and instruments of globalization but with urbanization comes many problems.” State three problems that occur due to rapid urbanization and propose a solution for each.
