PART I

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

SECTION A
TOTAL VALUE: 36%

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

Unit 1 - Major Land and Water Forms (1 - 10)
Unit 2 - Patterns in Weather and Climate (11 - 20)
Unit 3 - Ecosystems (21 - 25)
Unit 6 - Manufacturing and Service Activities (26 - 32)
Unit 10 - Global Economic Disparities (33 - 36)

1. Which zone of Earth is 1- 100 km thick and can be divided into two layers: the sial and the sima?

   (A) inner core
   (B) lithosphere
   (C) mantle
   (D) outer core

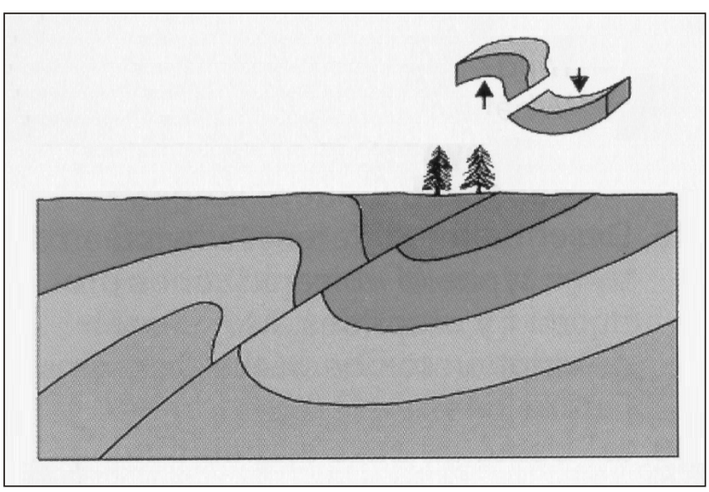
2. Which weathering process is at work when rock layers peel away from a sandstone gravestone?

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

3. Which refers to a level, rocky desert that has been smoothed by abrasion?

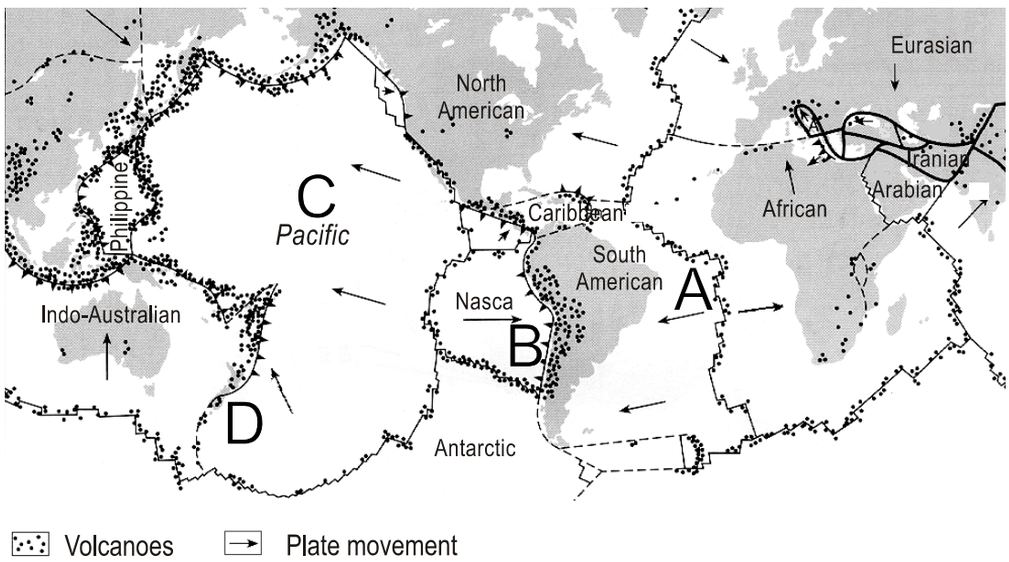
   (A) barchan
   (B) erg
   (C) hamada
   (D) loess

4. Which landform feature is illustrated in the drawing?



   (A) block mountain
   (B) normal fault
   (C) overthrust fault
   (D) reverse fault

5. At which letter location on the map are tensional forces at work?



Source: Nagle, Garrett and Kris Spencer. 1967. Geography Through Diagrams. Oxford: Oxford University Press.

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

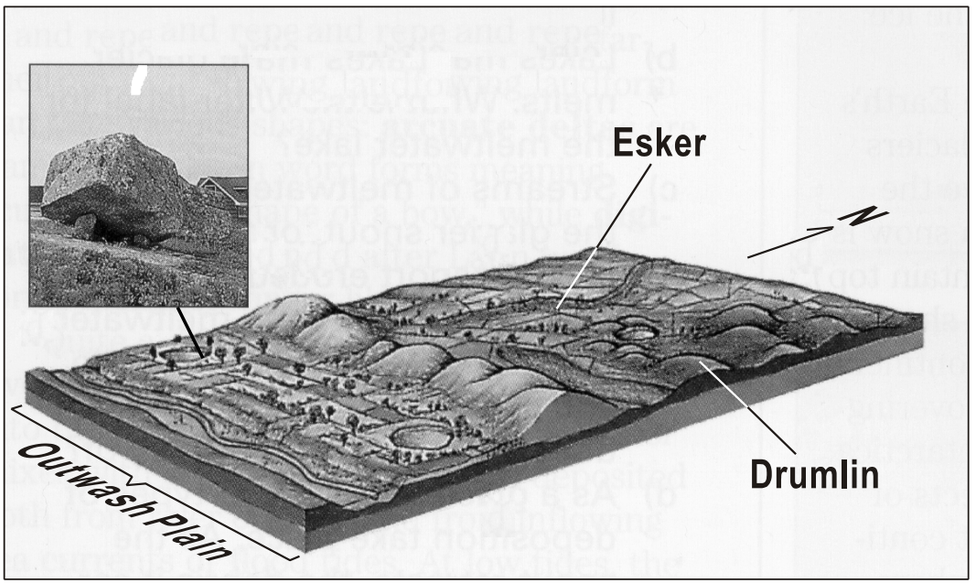
6. Which volcano results from successive eruptions of thin lava, covers a large area, and consists of a broad, gentle-slope shape?

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

7. In which stage of its life cycle is a river described as: *"The relief around the river is very flat. The water is muddy with a very low velocity. Flooding is very common during periods of high run-off."*?

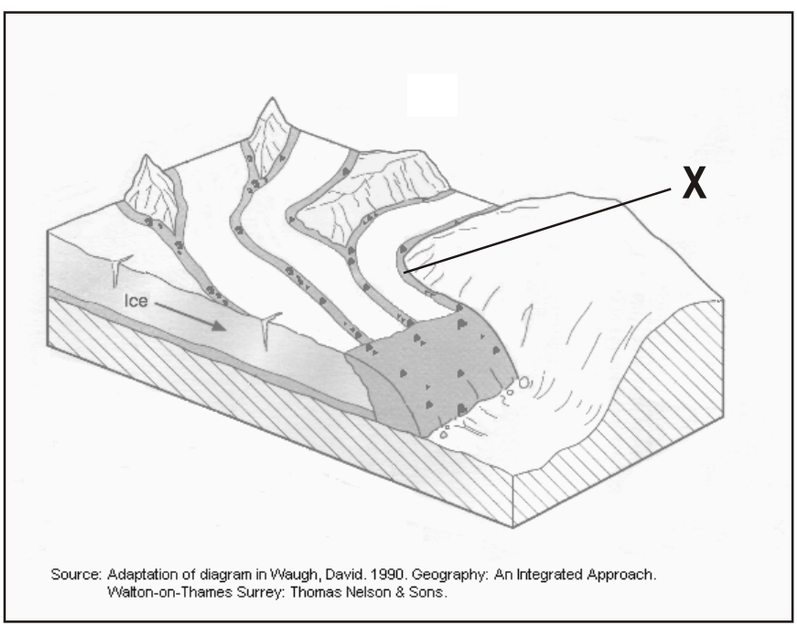
(A) late maturity
(B) maturity
(C) old age
(D) youth

8. In which direction did the glacier flow through the area in the drawing?



(A) east to west
(B) north to south
(C) south to north
(D) west to east

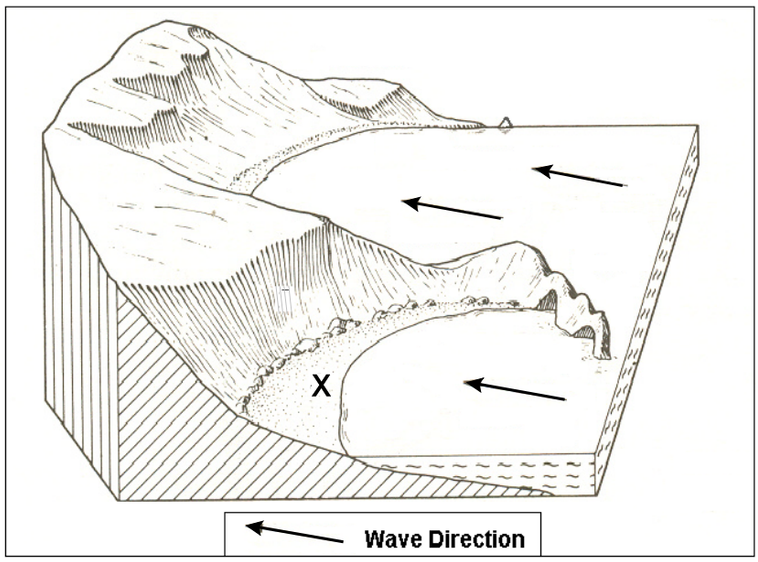
9. Which glacial feature is formed at X in the drawing?



Source: Adaptation of diagram in Waugh, David. 1990. Geography: An Integrated Approach. Walton-on-Thames Surrey: Thomas Nelson & Sons.

(A) cirque
(B) esker
(C) lateral moraine
(D) terminal moraine

10. Which coastal feature is found at position "X" in the diagram below?



Source: Bunnett, R.B. 1965. Physical Geography in Diagrams. London: Longman.

(A) bay bar
(B) bay beach
(C) sea cave
(D) spit

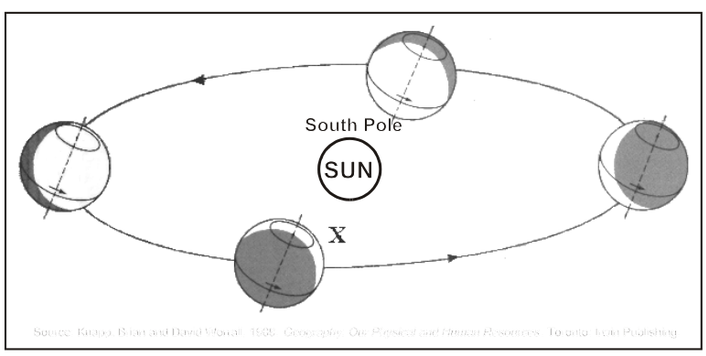
11. Which statement refers to climate?

(A) Heavy snowfall in December resulted in 125 vehicle accidents.
(B) Residents of Nova Scotia prepared for Hurricane Juan.
(C) Tourists visiting Brazil enjoyed daily temperatures of 25˚C during their two week stay.
(D) Winnipeg, Canada has a temperature range of 38˚C and average annual precipitation of 526mm.

12. Which term is defined as, *"having a day and night of equal length"*?

(A) eclipse
(B) equinox
(C) lunar
(D) solstice

13. Which season is occurring in the Northern Hemisphere when Earth is at position X in the drawing?



(A) fall
(B) spring
(C) summer
(D) winter

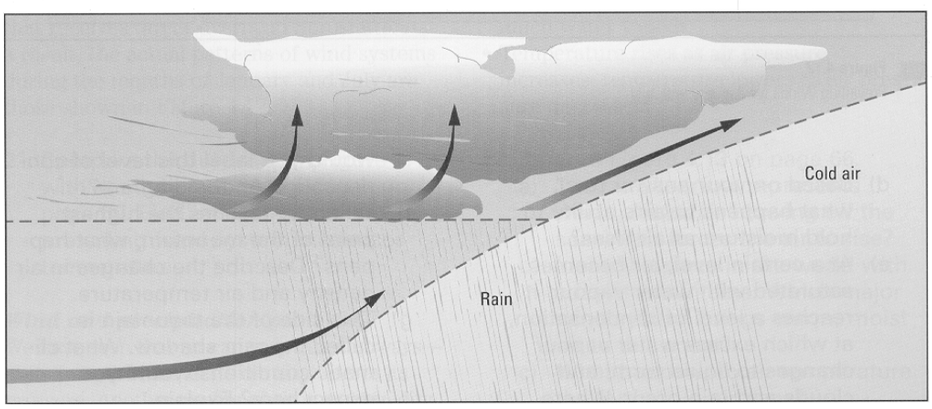
14. Which is defined as, "*a permanent or semi-permanent horizontal movement of unusually cold or warm surface water of the oceans, to a depth of about 100m*"?

(A) ocean current
(B) ocean tide
(C) tidal wave
(D) wave refraction

15. Which is best illustrated by: "*Winds tend to deflect to the right in the Northern Hemisphere while winds in the Southern Hemisphere are deflected to the left.*"?

(A) corriolis force
(B) earth's rotation
(C) ocean currents
(D) pressure zones

16. Which is used to refer to the type of rainfall shown in the diagram below?



(A) convection
(B) frontal
(C) orographic
(D) relief

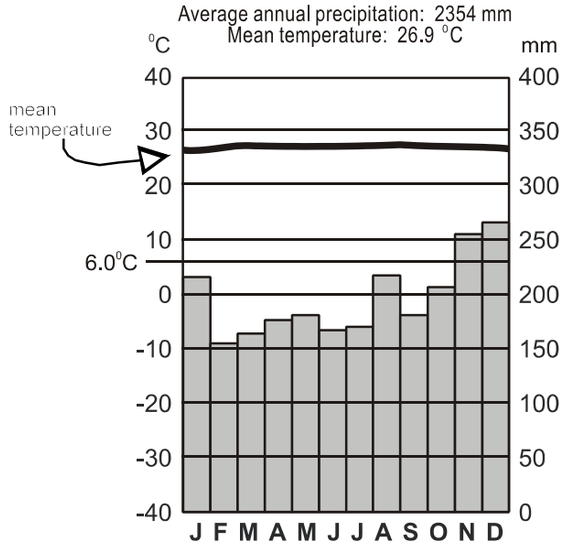
17. Which corresponds to a temperature increase?

(A) decrease in latitude
(B) decrease in longitude
(C) increase in latitude
(D) increase in longitude

18. What would be the main threat posed by climatic conditions in July if you were living in India?

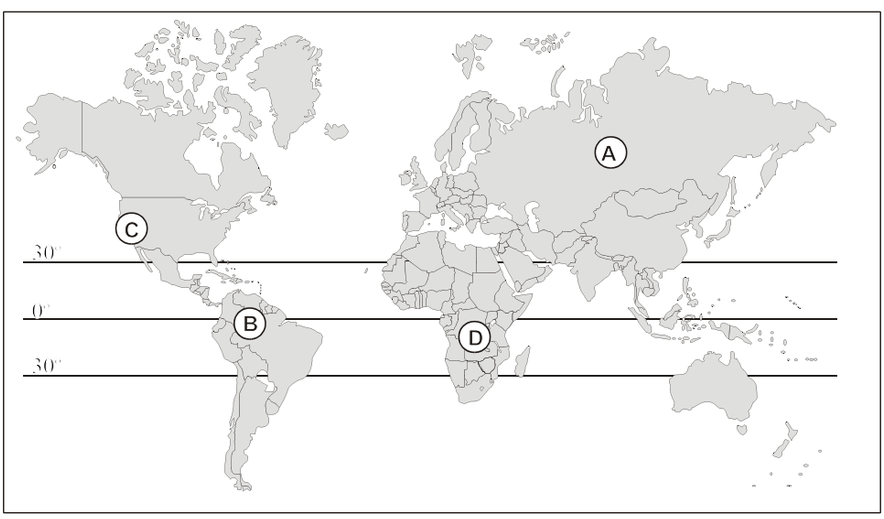
(A) drought
(B) dust storms
(C) floods
(D) forest fires

19. Which phrase best describes the climate presented in the graphic below?



(A) hot, dry summers and mild winters
(B) hot summers and cold winters with fairly evenly distributed rainfall
(C) hot, wet summers and cold dry winters
(D) year round heat and moisture

20. Where would the greatest annual temperature range be found on the map below?

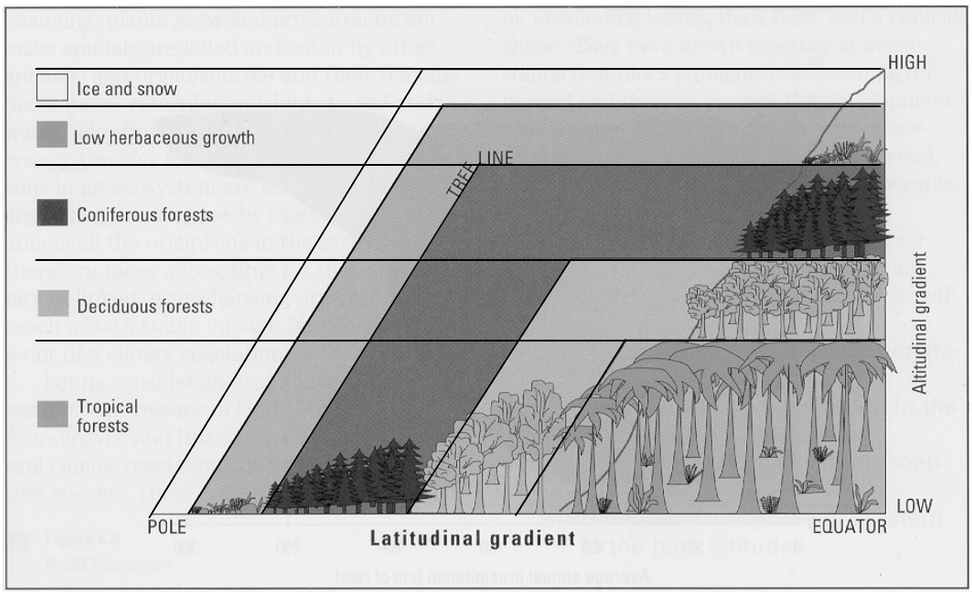


(A) A
(B) B
(C) C
(D) D

21. Which term refers to the relationship between sources of food and consumers of food in an ecosystem?

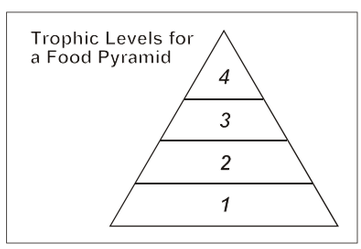
(A) energy level
(B) food pyramid
(C) food web
(D) trophic level

22. With reference to the diagram below, which statement is a true representation of how latitude and altitude affect ecosystems?



(A) Coniferous forests are found in low latitude, low altitude areas.
(B) Deciduous forests are found in low latitudes and low altitudes.
(C) Low herbaceous plants are found in low latitude, high altitude polar areas.
(D) Tropical forests are found in low latitude, low altitude areas.

23. At which trophic level would you find the largest number of organisms in the graphic?



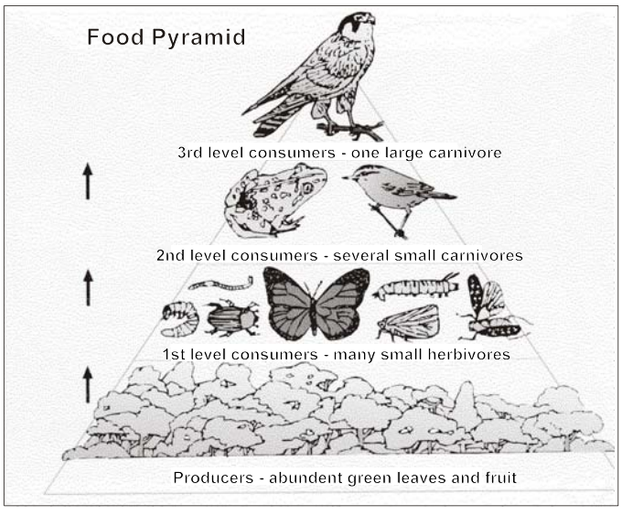
(A) 1
(B) 2
(C) 3
(D) 4

24. Which type of ecosystem experiences the conditions described below?

- Very little rainfall (< 250 mm per year)
- High temperature range from day to night
- Precipitation during very short periods of time
- Plants which tend to have thick skins or extended root systems

(A) deciduous forest
(B) desert
(C) polar
(D) tundra

25. With reference to the diagram below, what effect would a poisonous chemical destroying grass and plants have on the hawk population?



(A) decrease
(B) fluctuate in the first year
(C) increase
(D) remain stable after one year

26. According to the table below, which combination is most capital intensive?

	Units of Labour	Units of Capital
(A)	4	21
(B)	4	16
(C)	15	5
(D)	20	5

27. According to the table below, which country is most likely to contribute to acid rain?

	% Employed by Sector			
	Country	Primary	Secondary	Tertiary
(A)	1	25	57	18
(B)	2	7	27	66
(C)	3	6	25	69
(D)	4	7	23	70

28. Which type of industry locates near its general consumers as a way of cutting transportation costs?

(A) capital intensive
(B) heavy
(C) market-oriented
(D) resource-oriented

29. Which is an example of a heavy industry?

(A) hockey stick factory
(B) shipbuilding
(C) shoe factory
(D) stone carving

30. Which is an example of a public tertiary activity?

(A) banking industry
(B) investment counseling
(C) state educational services
(D) wholesale businesses

31. Which item is an input in a shoe manufacturing industry?

(A) advertising
(B) distribution
(C) leather
(D) quality control

32. Which refers to the situation: *"McCains built a french-fry processing plant in Canada's potato capital, P.E.I."*?

(A) agglomerating tendency
(B) heavy industry
(C) primary production
(D) quaternary industry

33. According to the table below, which country is the least developed?

	Country	Per Capita GNP	Adult Literacy (% total population)	Infant Deaths (per 1000 births)
(A)	1	8 500	94.2	11.1
(B)	2	4 500	80.4	19.6
(C)	3	14 600	98.6	4.2
(D)	4	2 100	81.3	28.2

34. According to the table below, which country has the highest level of economic development?

	% Employed by Sector			
	Country	Primary	Secondary	Tertiary/Quaternary
(A)	1	93.1	2.0	4.9
(B)	2	75.0	18.9	6.1
(C)	3	8.6	18.3	73.1
(D)	4	2.6	21.8	75.6

35. Which statement best describes the relationship between a country's development and standard of living?

(A) the less developed, the higher the standard of living
(B) the more developed, the higher the standard of living
(C) the more developed, the lower the standard of living
(D) there is very little connection

36. Which refers to the development and use of high-yielding crops in conjunction with improved agricultural technology?

(A) appropriate technology
(B) extensive agriculture
(C) green revolution
(D) land reform

SECTION B
Do only ONE of the Units in Section B

Either:	**Unit 4 - Resources on the Land (37 - 44)**	**Value: 8 %**
Or:	**Unit 5 - Resources in the Oceans (45 - 52)**	**Value: 8 %**

Unit 4 - Resources on the Land

37. Which is defined by: " *Available assets, or sources of wealth, that benefit and fulfill the needs of the community.*"?

(A) consumer goods
(B) minerals
(C) resources
(D) value-added products

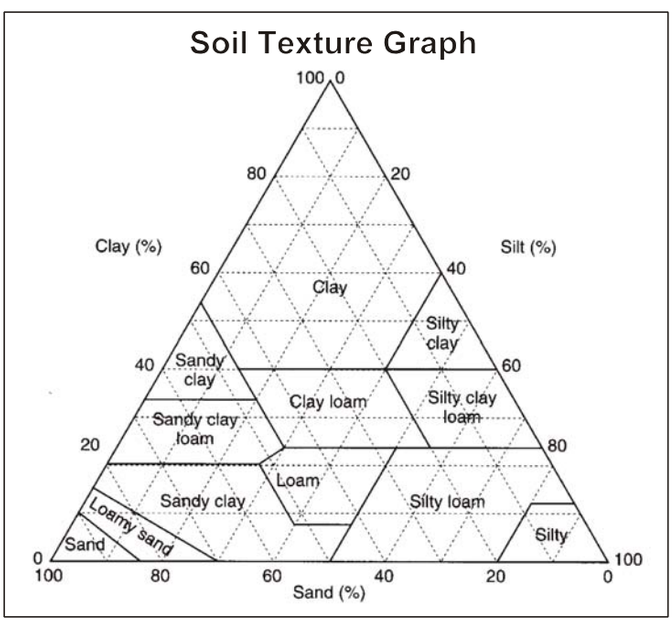
38. Which three conditions determine if a natural material is actually a resource?

(A) inputs, process, outputs
(B) inputs, technology, outputs
(C) need, profitability, technology
(D) need, technology, process

39. Which refers to the upward movement of soluble material through the soil by water?

(A) capillary action
(B) eluviation
(C) erosion
(D) leaching

40. Using the triangular graph of soil texture, which condition would make the least favourable soil for farming?



(A) 25% sand, 60% clay, 15% silt
(B) 30% sand, 10% clay, 60% silt
(C) 40% sand, 20% clay, 40% silt
(D) 50% sand, 10% clay, 40% silt

41. According to the table below, which set of farming components is correctly classified?

	Set	Input	Process	Output
(A)	1	ploughing	seeds	meat
(B)	2	fertilizer	ploughing	potato
(C)	3	weeding	harvesting	cheese
(D)	4	climate	soil	strawberry stand

42. According to the table below, which set of conditions may be best classified as an extensive farming operation?

	Use of Labor	Use of Capital	Crop Yield (per hectare)
(A)	high	high	high
(B)	low	low	low
(C)	high	low	high
(D)	high	high	low

43. Which involves ploughing and planting along horizontal lines on sloping land in order to prevent soil erosion?

(A) contour ploughing
(B) cover cropping
(C) strip cropping
(D) terracing

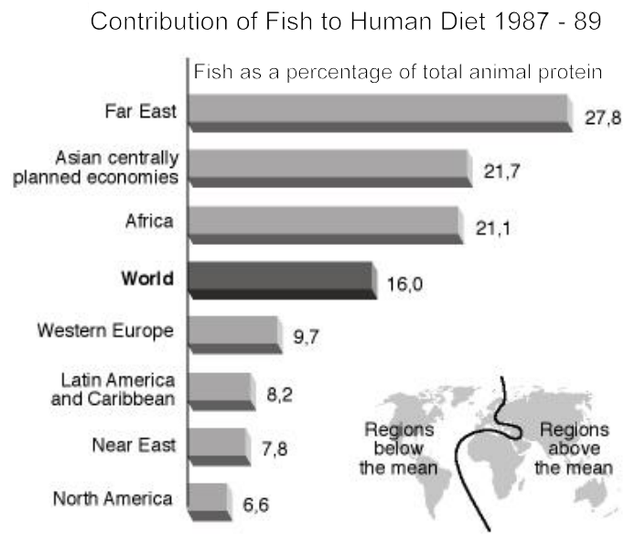
44. Which set of descriptions identifies harvesting of trees by clear cutting?

1. All timber in the area is harvested at the same time.
2. It is the most economical form of harvesting.
3. 20 to 100 meter wide areas are harvested.
4. It is the least dangerous form of tree harvesting.

(A) 1, 2, and 3
(B) 2, 3, and 4
(C) 3, 4, and 1
(D) 4, 1, and 2

Unit 5 - Resources in the Ocean

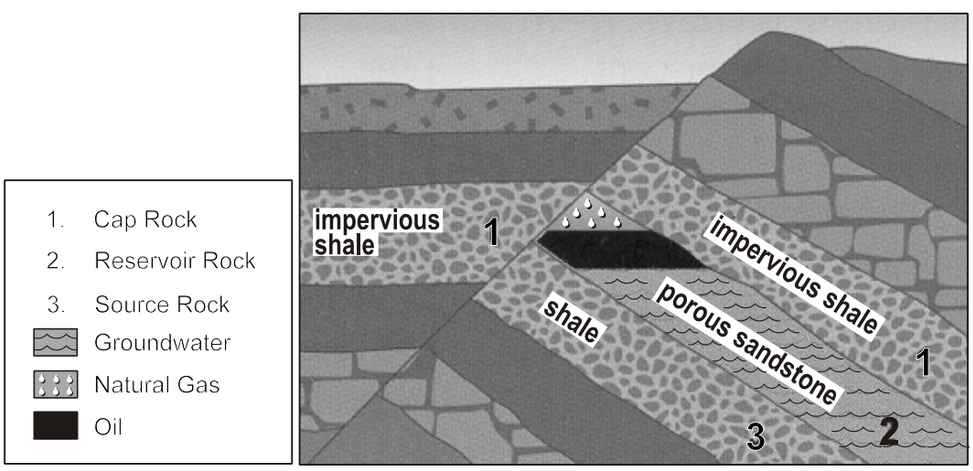
45. According to the graph, which region of the world consumed the greatest amount of fish as a percentage of animal protein consumption?



Source: Food and Agriculture Organization of the United Nations (FAO), *Marine fisheries and the law of the sea: a decade of change*, FAO Fisheries Circular n°853 (FAO, Roma, 1993).

(A) Africa
(B) Far East
(C) North America
(D) Western Europe

46. What type of oil and natural gas trap is shown in the drawing?



(A) fault
(B) fold
(C) salt dome
(D) stratigraphic

47. Which type of drilling platform is best suited for extracting oil and gas in water depths up to 20 m?

(A) jack-up
(B) semi-submersible
(C) semi-submersible dynamically positioned
(D) submersible

48. According to the table below, which region has experienced the slowest change in oil production from 1990 to 2000?

Offshore Oil Production by Non-OPEC Regions (1990,1995,2000)
(in millions of barrels per day)

REGION	PRODUCTION 1990	1995	2000
North Sea	3.767	5.855	7.52
North America*	2.792	3.364	4.94
South America	0.538	0.660	1.45
West Africa	0.873	1.098	1.57
East Africa	0.866	1.222	1.47
Australia	0.518	0.517	0.72
North Africa	0.730	0.697	0.64
South Asia	0.436	0.465	0.52
Southern Europe and Central Asia**	0.334	0.217	0.45
Total Offshore	**10.854**	**14.095**	**19.28**
Total Onshore	**31.006**	**28.304**	**29.40**
Total	**41.860**	**42.399**	**48.68**

* includes Mexico
** includes the Mediterranean, Black and Caspian Seas
Source: International Energy Agency, *Global Offshore Oil Prospects to 2000.*

(A) Australia
(B) East Africa
(C) North Sea
(D) South Asia

49. Which is used during the offshore drilling process to reduce friction, to carry out drill cuttings and to prevent blowouts?

(A) directional drilling
(B) drilling mud
(C) gravity based structure
(D) stratigraphic trap

50. Where are most major fishing grounds in the world found?

(A) continental shelves
(B) deep ocean areas
(C) high latitude areas
(D) tropical regions

51. Which type of fishing gear is funnel-shaped and attached to a boat by towing cables?

(A) gill net
(B) longline
(C) otter trawl
(D) purse seine

52. Which is a characteristic of Atlantic Canada's inshore fishery?

(A) activity often interrupted by bad weather
(B) inshore more capital intensive than offshore
(C) operations carried out year-round
(D) trawlers 35 to 45 m in length

SECTION C

Do only ONE of the units in Section C

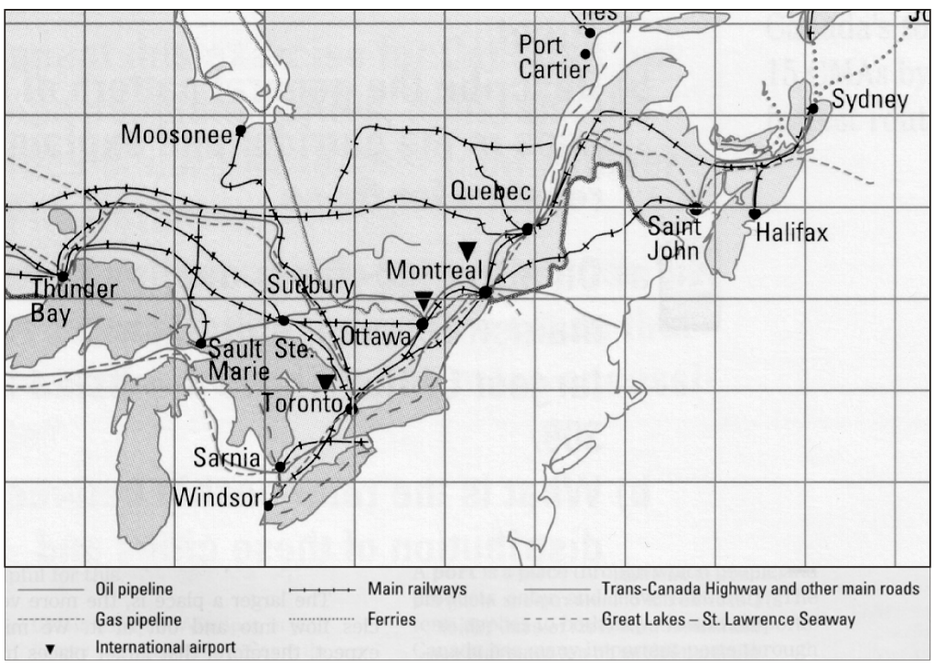
Either:	**Unit 7 - Linkages in Human Interaction (53 - 60)**	**Value: 8%**
Or:	**Unit 8 - Population (61 - 68)**	**Value: 8%**
Or:	**Unit 9 - Settlement and Urbanization (69 - 76)**	**Value: 8%**

Unit 7 - Linkages in Human Interaction

53. Which is defined by: *"A flow or movement of goods, people or information to or from a location, tying locations together."*?

(A) journey chain
(B) linkage
(C) network
(D) transportation node

54. According to the map below, which mode of transportation would be most cost-effective to ship wheat from Thunder Bay to Halifax?

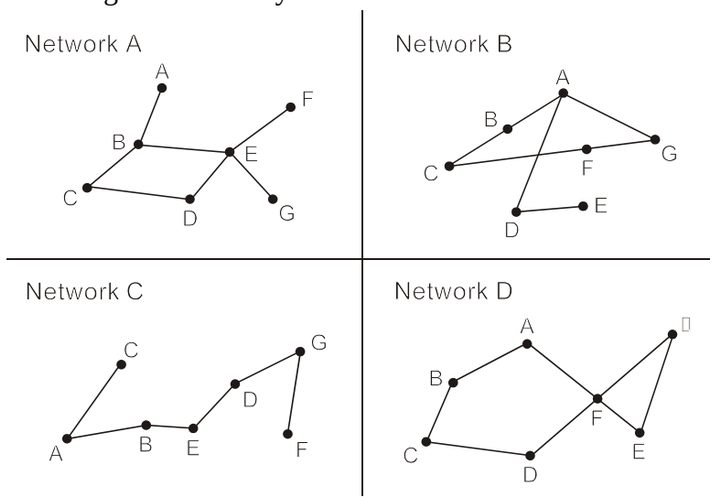


(A) air
(B) boat
(C) rail
(D) road

55. With reference to the table below, in which case will trade relations be strongest?

	Good	Country A	Country B	Ease of Transfer
(A)	fish	shortage	high demand	low
(B)	oil	surplus	low demand	high
(C)	steel	surplus	high demand	high
(D)	wheat	shortage	high demand	low

56. Which network has the highest efficiency?



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

57. Which transportation innovation was introduced to reduce loading and unloading, reduce theft and damage of cargo, and increase time efficiency?

(A) containerization
(B) intelligent transportation systems
(C) mass communication
(D) transportation hub

58. Which refers to a port where goods are received via boat and then shipped inland by road and rail?

(A) journey chain
(B) linkage
(C) transportation node
(D) transshipment point

59. Which two conditions give rise to development of linkages between places?

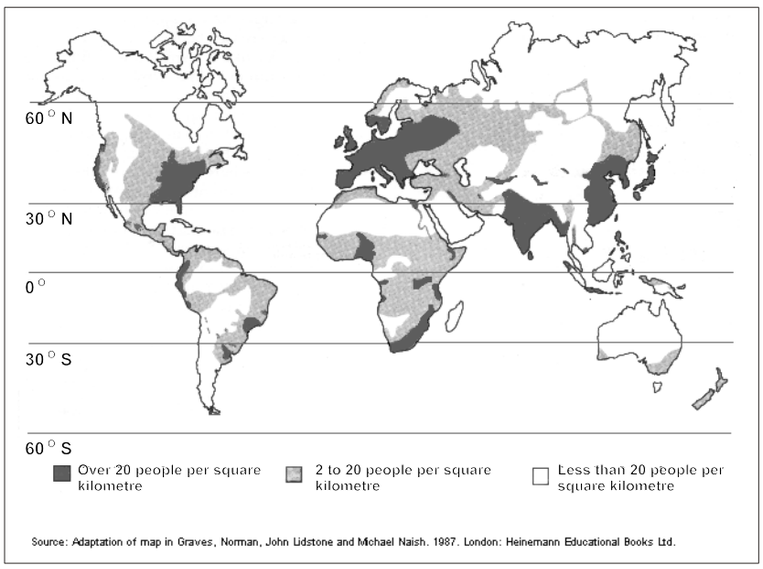
(A) connectivity and ease of transfer
(B) specialization and ease of transfer
(C) specialization and supply demand match
(D) supply demand match and ease of transfer

60. Which costs associated with a helicopter service company are line-haul costs?

(A) airport rental
(B) cost of helicopter
(C) helicopter fuel
(D) insurance

Unit 8 - Population

61. Which region has the highest population density?



(A) Australia
(B) Northern Asia
(C) Northern North America
(D) Western Europe

62. In the table below, which country shows a natural decrease in population?

	Population Change					
	Country	Population	Number of Births	Number of Deaths	Number of Immigrants	Number of Emigrants
(A)	1	31 600 000	1 980 000	400 000	250 000	40 000
(B)	2	10 980 000	115 600	125 000	40 000	80 000
(C)	3	789 000 000	39 780 000	19 800 000	3 280 000	1 450 000
(D)	4	59 890 000	3 986 000	1 956 000	216 000	526 000

63. Which is used to calculate population density?

(A) dwellings ÷ population
(B) immigration ÷ land use
(C) land area ÷ population
(D) population ÷ land area

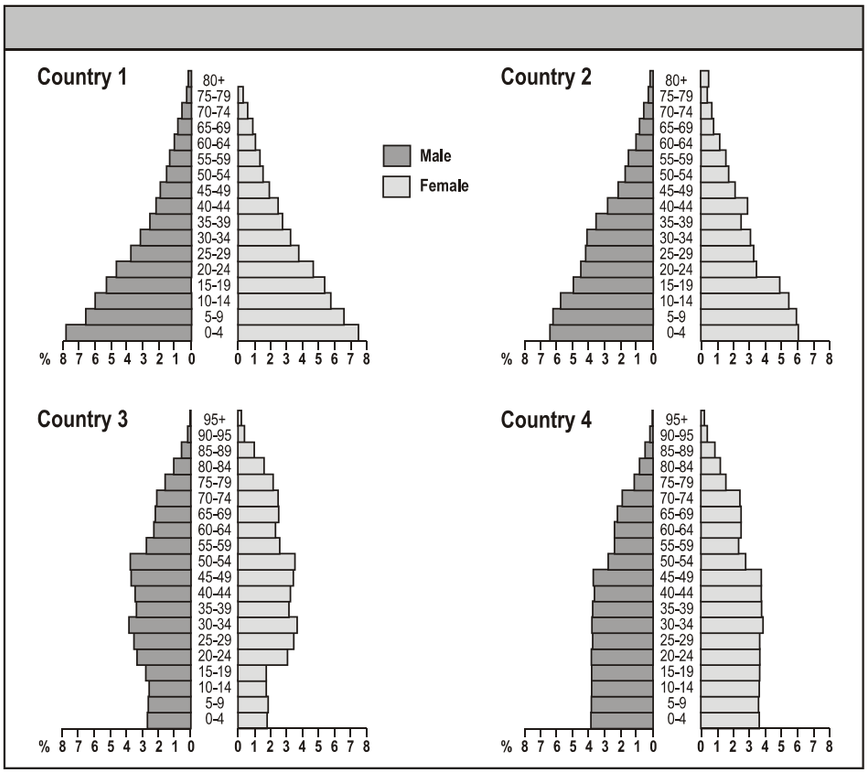
64. Which attribute of population is described as: *"The percentage increase in a population over a period of time."*?

(A) concentration
(B) density
(C) distribution
(D) growth rate

65. Which is described by: *"A graphic representation of statistical information depicting male, female and age of a particular country."*?

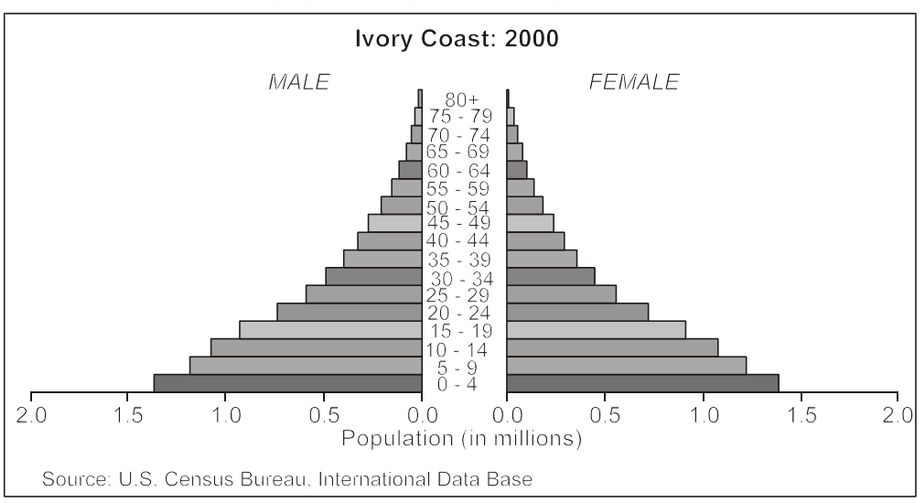
(A) climograph
(B) food web
(C) population pyramid
(D) scatter graph

66. In the graph below, which country will have the lowest dependency ratio?



(A) 1
(B) 2
(C) 3
(D) 4

67. Which best describes the population pyramid diagram below?



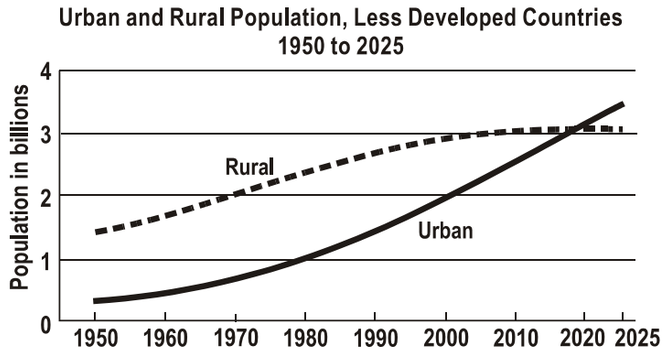
(A) decreasing population
(B) low death rate among the elderly
(C) population young and expanding
(D) zero growth because of equal birth and death rate

68. Under which class would the individual who has a personal net worth of $500 000 and willing to invest at least $250 000 in Canada for five years apply to immigrate to Canada?

(A) family
(B) independent
(C) migrant worker
(D) refugee

Unit 9 - Settlement and Urbanization

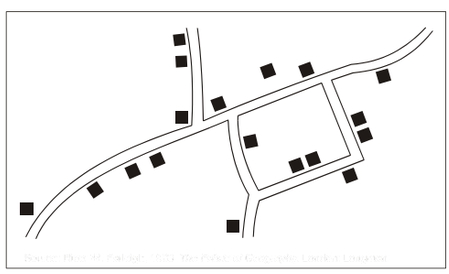
69. Using the graphic below, which statement best describes urban and rural population growth rates for the next ten years?



Source: United Nations, *World Urbanization Prospects: The 1999 Revision* (2000).

(A) rapid growth in rural, slow growth in urban
(B) rapid growth in rural, stable urban
(C) rapid growth in urban, slow growth in rural
(D) rapid growth in urban, stable rural

70. Which type of village is shown in the diagram below?



(A) compact
(B) composite
(C) linear
(D) loose knit

71. Which is the best example of a country with a rank-size arrangement?

Country A	3 581 713	Country C	1 840 601
	293 731		912 836
	191 713		601 315
	143 781		453 211
Country B	2 315 629	Country D	4 901 751
	1 888 105		611 509
	605 211		589 921
	460 511		572 603

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

72. Which type of settlement site develops where two navigable rivers meet?

(A) confluence
(B) head of navigation
(C) river island
(D) river meander

73. Which type of land use is shown in the drawing?

(A) commercial
(B) industrial
(C) public
(D) residential

74. Which set of characteristics describes a typical rural community in Canada?

(A) low population density, small building lots, low crime rate, high municipal taxes
(B) minor sports program, public and private transportation, legal and accounting services
(C) most jobs in primary sectors, medical clinics, few buildings on land, low crime rate, low municipal taxes
(D) post secondary schools, public and private transportation, most land occupied, industrial pollution

75. According to the indicators shown in the table below, which city is most likely to be located in the most developed country?

The Quality of Life in Large Cities

	City	Population (in millions)	Literacy Rate (% of population)	Murders (per 100 000)	Persons per Doctor
(A)	1	22	78	35.6	7 000
(B)	2	17	99	2.1	500
(C)	3	15	86	26.2	2 600
(D)	4	14	63	68.4	18 000

76. Which is described by the definition: *"A site on a piece of land jutting into, and almost surrounded by, the sea."*?

(A) acropolis site
(B) head-of-navigation site
(C) peninsula site
(D) river-island site

Part II

SECTION A
TOTAL VALUE: 32%

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

Unit 1 - Major Land and Water Forms
Unit 2 - Patterns in Weather and Climate
Unit 3 - Ecosystems

CASE STUDY 1 - Our Climate is Changing

Around the world, our climate is changing. Average global temperatures are rising. The 20th century was the warmest the world has seen in 1 000 years, and the 1980s and 1990s are the warmest decades on record.

Human activities are upsetting the balance of greenhouse gases, such as carbon dioxide, in our atmosphere. Our heavy use of fossil fuels for heating, transportation and electricity, releases carbon dioxide and other greenhouse gases. These gases are accumulating in our atmosphere and causing the Earth to "heat up."

Over the next 100 years, temperature increases of 3 - 4°C are projected for the Atlantic Provinces. Changes in precipitation patterns and an increase in extreme events are also anticipated. These climate changes are expected to be the largest and most rapid of the last 10 000 years and will have profound effects on our lives and the ecosystems that support us.

Sea Ice

In the short term, climate change may increase the number of icebergs, which could be hazardous to ships. In the long term, climate change is projected to reduce the thickness and extent of sea ice. This may lengthen the shipping season and reduce the need for icebreakers. However, less sea ice will also increase the exposure of beaches to winter storm waves, and increase both coastal erosion and storm damage to buildings and structures along the coast. In some areas of Newfoundland, surveyors have already observed considerable erosion along the coastline.

Changing Ecosystems

Warmer temperatures and changing precipitation patterns are expected to affect the distribution, health, and accessibility of wildlife and fish. Changes in river flow would result in earlier ice breakup, stronger spring runoff and reduced summer flow. This would negatively impact several species, including the threatened Harlequin duck of Labrador.

The polar ice cap is melting at an alarming rate due to global warming. According to NASA satellite images, the ice cap has been shrinking by 10 percent per decade over the past quarter century. Researchers at NASA are worried because not only does global warming cause the ice cap to melt, it causes the rate of melt to increase forming a vicious cycle. This warming trend has brought spectacular consequences. American and Canadian scientists reported in September that the Ward Hunt Ice Shelf has broken up due to climate change and could endanger shipping and drilling platforms in Canada's Beaufort Sea. This Ice Shelf had been in place in Canada's Nunavut territory for at least 3 000 years when researchers were asked, "Why the increase in global temperature?" The response was that, "Part of this is probably simply due to natural variability in the climate system, but the general consensus is that part of these changes are due to human impact."

Marine Species

Changing temperatures are expected to influence the numbers and distribution of some fish species. For example, cod are strongly influenced by water temperature. Between 1900 and 1920, warmer temperatures allowed cod to migrate northwards, and then when the water

temperature dropped after 1930, they retreated southwards. Cod size is also affected by temperature, with larger cod found in warmer waters. Significant warming of fresh water bodies could also affect the numbers and distribution of trout and salmon.

Rising Sea Level and Vanishing Coasts

Rising sea levels will affect sensitive low-lying coastal areas. Salt marshes and lagoons that are currently freshwater could be flooded by sea water, affecting the habitat of fish and wildlife. Barrier beaches may recede, and there may be increased erosion along some of the coastline. Erosion such as that threatening the lighthouse of Pointe Verde, Newfoundland will become more prevalent in the future.

Freshwater Issues

Hydroelectricity is an important source of power in Newfoundland and Labrador. Long-term changes in annual precipitation would affect overall generation capability, although electric power systems with dams and reservoirs are likely to be able to adjust their operating practices to accommodate these changes. However, hydroelectric systems without reservoirs would be more vulnerable to changes in precipitation levels.

Lowered water levels or decreased river flows in some areas could lead to poor water quality. Increases in temperatures, prolonged summer seasons, and heavier rainfall could also increase the risk of waterborne parasites, contaminating drinking water.

Storm Surges and Coastal Flooding

Storm surges form when low pressure weather systems and strong onshore winds combine to raise the water level a metre or more above normal. As sea level is expected to rise dramatically over the next century, storm surges will be able to flood areas never before flooded. Flooding is already a problem in Newfoundland and Labrador, where flood damages over the last 15 years have exceeded $40 million. It is becoming obvious that stormy weather is on the rise in the Atlantic basin which covers the northeastern Seaboard of Canada and the United States. Over the past decade, the number of tropical cyclones – that is, hurricanes, tropical storms and tropical depressions – has increased dramatically, with 1995-2001 being the most active seven-year period on record. Meteorologists at Environment Canada's Canadian Hurricane Centre in Dartmouth, Nova Scotia, say the trend could spell trouble for coastal regions of Atlantic Canada. Although tropical cyclones often bypass these areas at sea or strike with less intensity because their energy has dissipated over the cooler waters, they frequently cause storm surges, high waves, damaging winds and heavy rainfalls. Measurable sea-level increases in recent years and the gradual sinking of the land-a geological phenomenon known as crustal subsidence-could make the risk of flooding from such storms even greater in the future.

Human Impacts of Hurricanes

Category (Wind Speed (km/h))	Estimated Financial Damage (billions of dollars)	Total Lives Lost
5 (249 +)	26.5	58
4 (210 - 249)	7.0	60
3 (178 - 209)	3.2	30
2 (154 - 177)	5.0	40
1-2 (119 - 153)	1.5	63

What can you do?

Everyday activities by individuals account for 28% of Canada's greenhouse gas emissions-that's almost six tonnes per person per year! If we're part of the problem, we can be part of the solution, too.

Value

2% 77. Outline two ways human activities are affected by climate change. Use specific evidence from the case study to support your answer.

Value

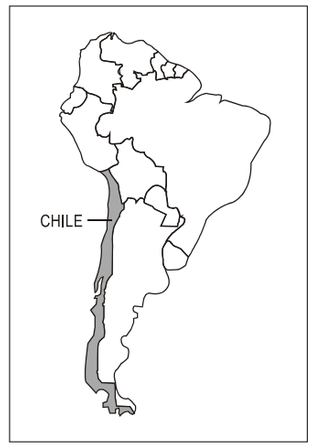
4% 78. According to the "*Human Impacts of Hurricanes*" chart, there is no relationship between the **Category of Wind Speed** and **Total Lives Lost**. Explain two factors that could account for this lack of a relationship.

Value

6% 79. You are a cabinet minister whose job is to develop a program addressing issues related to climate change and its impact on Newfoundland and Labrador. Based on what you have learned this year related to environmental risks and information from the Case Study, provide three suggestions to help the province deal with the potential impacts of climate changes.

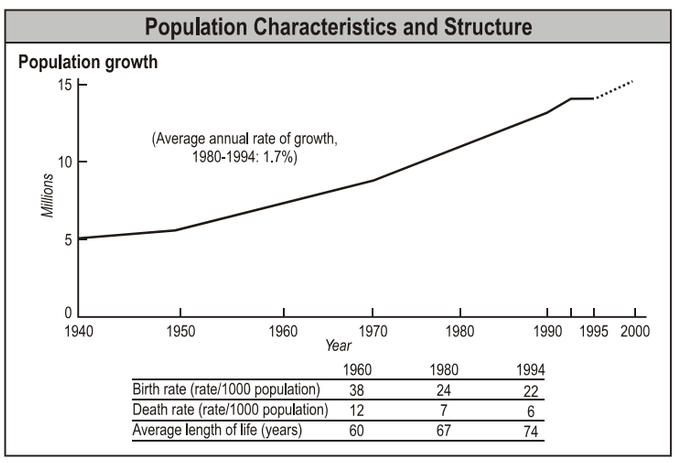
Unit 6 - Manufacturing and Service Activities
Unit 10: Economic Disparities

CASE STUDY 2 - Assessing Development: Case Study of Chile

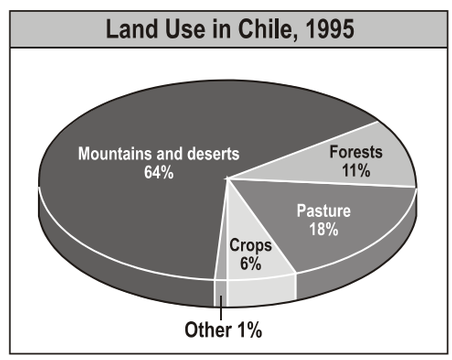


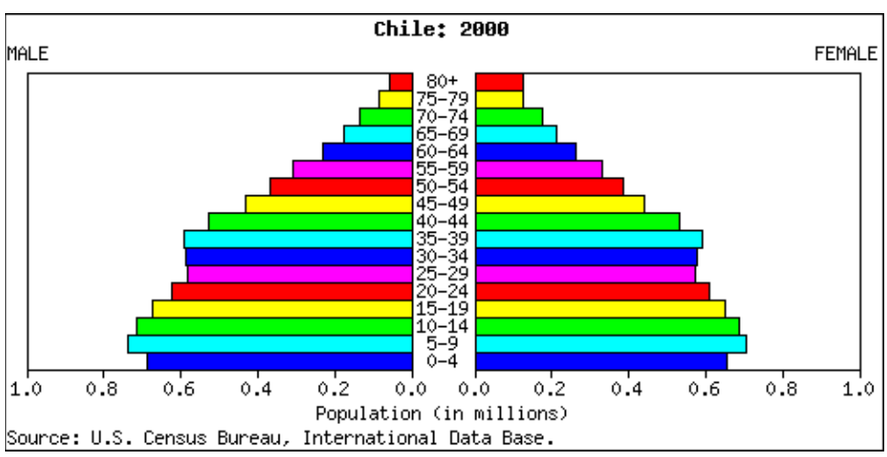
Chile is an unusual shape. It is a long, narrow country, stretching 7 000 km along the southwest coast of South America. Its length, and the rugged Andes Mountains, pose challenges for internal communications and links with other countries. Chile extends from hot deserts in the north to cool, wet forests in the south. Central Chile has a Mediterranean climate, and is the core of the country, with the capital, Santiago (1994 population 5.7 million). The country covers almost 757 000 km^2, but 64% is classed as unproductive mountain and desert.

Development Indicators for Chile



	1960	1980	1994
Birth rate (rate/1000 population)	38	24	22
Death rate (rate/1000 population)	12	7	6
Average length of life (years)	60	67	74





Population Characteristics / Quality of Life Indicators					
	Birth Rate (per 1000)	Death Rate (per 1000)	Life Expectancy (in years)	Infant Mortality (per 1000)	Literacy Rate (% of total pop.)
Chile	22	6	74.00	10.0	95.0
Canada	13	7	79.07	5.3	97.0
Nigeria	43	13	54.34	75.0	57.1

Employment Structure (% of total workforce)	
Agriculture	15
Mining	2
Commerce & Trade	18
Transportation	6.5
Construction	7
Industry	16
Other	35.5
Total	**100%**
Unemployment rate 1994	6%

Wine Making in Chile

There are few places in the world where nature has favoured a territory as much as in the Chilean Central Valley, where nearly 300 days of rich sun a year shine on the vineyards. The soft ocean breezes, the impressive Andes Mountains, perfectly balanced soil components and clean mountain rivers, create an ideal climate for cultivating grapes for some of the finest wines in the world.

These geographical barriers also act as a natural defense against the feared Phylloxera louse, from which Chile has always been spared. Thus in the central valley, 2 000 hectares of land are divided among ten vineyards with unique micro-climates. In this way, control of the wine making process can be guaranteed under any circumstances, from the harvest all the way to the presentation of the wine in world markets.

How Wine is Made

1. **Picking the Ripe Grapes**. It is of great importance that the grapes arrive freshly picked. The process starts immediately; the grapes are visually checked, weighed, and then processed.

2. **Destemming.** A machine removes the stems because they are bitter. Once destemmed, they are pumped to one of three vessels depending on the grape variety and style of wine to be made.

3. **Pressing.** All the grapes pass through the press to extract the grape juice or wine from the grape.

4. **Fermentation.** The process of fermentation digests and breaks down the sugars which then form into alcohol.

5. **Racking.** Racking is the process in which the yeast that has settled to the bottom of the barrel is removed.

6. **Filtering.** Small and large particles are removed.

7. **Bottling.** Filling the bottles, corking, and labeling are the last steps in making the wine.

Value

2% 80. Explain, using evidence from the case study, whether Chile's wine-making industry is a light or heavy industry.

Value

4% 81. Explain the difference between a market-oriented industry and a resource-oriented industry. Using evidence from the case study, explain into which category Chile's wine industry would fall.

Value

6% 82. With reference to why industries locate where they do and information from the case study, explain the influence that site conditions have had on the location of Chile's wine industry.

Value

2% 83. What physical features of Chile have had a negative impact upon development of its infrastructure?

Value

6% 84. *"Indicators are a useful way of measuring development. However, a country may not have reached the same level of development on all indicators. So, it may not be easy to place that country in one development class."*

Evaluate this statement with respect to Chile, using three specific examples from the case study to support your answer.

SECTION B

Do only ONE of the Units in Section B
Candidates are reminded that they must choose the same Unit as Part I.

Either:	**Unit 4 - Resources on the Land**	**Value: 8%**
Or:	**Unit 5 - Resources in the Ocean**	**Value: 8%**

CASE STUDY 3 - Resource Profiles

Unit 4- Resources on the Land

The State of the World's Forests

The world's forest area was estimated to be 34.5 million km^2 in 1995. This area corresponds to a quarter of Earth's land area. Between 1980 and 1995, 1.8 million km^2 of forest was harvested.

The earth has lost almost half of the forest that covered it 8 000 years ago. Most of this 30 million km^2 of forest has disappeared in the past three decades due to expanding populations, mining operations, hydro-electric power development, and agricultural expansion.

While Canada has also experienced a decline in its size of forests, this reduction is due primarily to its harvesting techniques. Canada's allowable cut is attained for the most part by clear cutting areas that have never been commercially logged before. Clear cutting, also known as 'even-aged forest stand management,' has been the main method of harvesting in Canada since the introduction of heavy machinery. Partial (selective) cutting methods are being promoted and investigated as alternatives where clearcutting may have unacceptable impacts on wildlife habitat or water resources.

In Canada, 337 communities are considered to be heavily dependent on the forest. In each of these communities, employment income derived from forest products industries accounts for at least half of the community's income. These communities are generally small, reliant on few industries, and more vulnerable to changes in their industries and local environment. Forest-dependent communities may be more unstable than larger urban areas, and this instability affects the social structure and the welfare of their residents. Generally, larger forest-dependent communities tend to perform better economically than their smaller counterparts.

Unit 5- Resources in the Ocean

The State of the Fishery

Cod experienced the most drastic stock decline of any groundfish species in the 1990s. One reason Newfoundland in particular suffered from this decline and the ensuing moratoria on cod fishing was because of over fishing on the lucrative Grand Banks. In 1989, cod made up 50% (262 000 tonnes) of Newfoundland's fish landings, a harvest that was worth $120 million or 45% of the value of the province's total landings. By 1996, several years after the implementation of a full moratorium on cod fishing, landings had fallen to a mere 1 000 tonnes valued at just $1 million.

As elsewhere in Atlantic Canada, Newfoundland's shellfish harvest increased as its groundfish harvest fell. Indeed, this response was particularly marked in Newfoundland. While this province accounted for just 19% (43 000 tonnes) of Atlantic Canada's shellfish landings in 1989, by 1996 39% (109 000 tonnes) of the region's shellfish harvest was landed in Newfoundland. This increase, combined with rising shellfish prices, meant that the value of Newfoundland's total fish landings actually increased from $266 million in 1989 to $289 million in 1996.

The social implications of these job losses - emigration, for instance - are magnified in Newfoundland's small fishing outports. Residents of these towns fish not only as a source of income, but also as a way of life. Population in three such towns, St. Anthony, Portugal Cove South and Burgeo, declined on average 29% between 1991 and 1996. In Newfoundland as a whole, population fell from 568 000 people to 552 000 people (3%) over the same period. No other province experienced a net decline in population this time.

Complete: Either Unit 4 **Or** Unit 5

CASE STUDY 3 - Unit 4 Resources on the Land

Value
2% 85. From the Case Study, give two examples of major threats to forest resources.

Value
6% 86. The new highway in Labrador has increased access to Labrador's vast forest resources. As the forestry manager for this area, describe the three methods of harvesting timber. With reference to substainability and information from the case study, explain which method of timber harvesting you would choose to harvest the forest.

Complete: Either Unit 4 **Or** Unit 5

CASE STUDY 3 - Unit 5 Resources in the Ocean

Value
2% 87. Newfoundland's cod moratorium had a major effect on the people of this province. List two of the economic impacts of Newfoundland's cod moratorium.

Value
6% 88. You are a journalist with a local newspaper and are about to attended a meeting of fisher people and plant workers dealing with the impacts of the moratorium. Beyond the loss of jobs, explain what could be three of the main issues discussed.

SECTION C

Do only ONE of the Units in Section C
Candidates are reminded that they must choose the same Unit as Part 1.

Either:	**Unit 7 - Linkages in Human Interaction**	**Value: 8%**
Or:	**Unit 8 - Population**	**Value: 8%**
Or:	**Unit 9 - Settlement and Urbanization**	**Value: 8%**

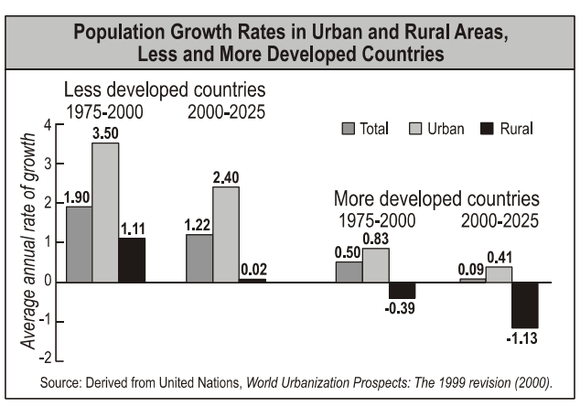
CASE STUDY 4 - The Wheels That Make Dhaka Go Round

The estimated population of Bangladesh (2001) was 131 269 860, making Bangladesh one of the ten most populous countries in the world. The overall density, 890 persons per sq km in 2001, is much higher than that of other countries except for microstates such as Singapore. Most of the people of Bangladesh are relatively young, nearly 60 percent being under the age of 25 and only 3 percent being 65 or older. Life expectancy at birth is 61 years.

Rural Migration in Bangladesh

Situated on an alluvial floodplain, where 75% of the nation live at less than 10 metres above sea level, Bangladesh is subject to frequent and disastrous flooding during the monsoon season. Lack of available farmland has encouraged an exodus from the countryside to the cities. Every year, 5% of the rural population - almost 5 million people, leave for a better life. Reasons for this movement also include population pressure, landlessness, poverty, natural disasters, law and order situations, and lack of social and cultural opportunities. Dhaka, the capital city, is the destination for many migrants where job opportunities and higher wages are the dominant common attractions.

Urban Population Growth for Selected Cities



Slum Conditions

As populations shift from rural areas to urban areas, so does poverty. As a result, the fastest growing sections of the urban areas are the slums. Migrants seeking shelter in slums are so poor that they do not generally have any other homes. The fact that these cities cannot absorb the growing numbers of migrants has contributed to the creation of the slums.

The overall environmental conditions in slum areas are deplorable. Due to the lack of basic infrastructure facilities, the slum dwellers are living in sub-human conditions. They are usually suffering from diseases due to unsafe water and the unhygienic disposal of sewage. Providing basic infrastructure facilities to slum dwellers will not only improve the environmental situations in the slums and outer areas, but will also contribute to the reduction of poverty.

Crowds, congestion, noise pollution and traffic jams are the first impressions of Dhaka. Wherever you go there are people. Wherever you go, there are crowds. As if this is not enough, there are cars, buses, bicycles, rickshaws (as shown in the diagram to the right), autos and other vehicles competing with people for a place on the roads. Mini vans which are meant for six, carry ten passengers. Auto rickshaws meant for two carry four.

Getting Around the City

Urban transport has a very strong bearing on poverty and is one of the factors with the highest impact on the economy of families in low income groups. New rural immigrants typically end up in the outskirts where they have to find housing. To them, transportation is essential in order to be able to benefit from the city's supply of employment, schools and other services. But since they travel long distances, cost is important. A recent study of developing countries found that an average low-income family will spend 30-40% of its earnings on transportation which, among other things, again shows that urban transportation is far from a luxury but one of the very basic needs of poor families. For the poor, almost all trips are work trips with few school trips and almost no social trips. Again, this is in marked contrast to an industrialized country where almost 60% of trips are for social, shopping and similar purposes.

As a country, Bangladesh has elements of all transportation networks. The chart below compares its networks with those of Japan.

Country	Population ('000's)	Area (km^2)	# of Airports	Waterways (km.)	Km. of Rail	Km. Paved Roads	Km. Dirt Roads
Bangladesh	138 448	144 000	18	8 046*	2 706	19 112	182 070
Japan	127 214	377 835	172	1 770	23 168	863 003	289 204

*Dependent on season of the year.

There are obvious differences related to development in the two countries. Further to these differences are the modes of transportation in the city of Dhaka. Dhaka is the cycle-rickshaw centre of the world. The streets teem with over 300 000 rickshaws, their bells ringing as they weave between buses, auto rickshaws and cars. It is believed that at any one time , more money goes around in rickshaw hands than in any other sector of the economy. In fact one taka[1] in every three spent on transport goes into the rickshaw business, which is twice as much as Bangladesh Biman, the national airline.

Behind every rickshaw on the streets of Dhaka there are five families who survive. There are 600 000 men who cycle the heavy loads of people and goods around the streets, and more than 70% of them are migrants. Most, on arrival, join one of hundreds of garages usually located in the slums. Some of the garages, often owned by a single person, accommodate as many as 200 rickshaws and the better ones offer meals, living space and banking facilities. Conditions are far from ideal though with a shortage of space, water and adequate sewage.

Studies that have been done to help improve the poor conditions in Dhakar have suggested that decentralization of Dhaka city be ensured by setting up satellite towns within commuting distances. Encouraging the growth of secondary cities and small towns would also help to reduce the migration flow. Other suggestions have included that urban productivity should be stimulated through technological development, urban poverty reduction programs should be put in place and income inequality should be reduced. Efforts should also be taken to introduce efficient, cheap and environmentally friendly transportation system in cities. So where does that put the rickshaw in the future of Dhaka? Today these are the wheels that make Dhaka go round.

[1]Taka is the currency of Bangladesh and there are 55 taka in an American dollar.

CASE STUDY 4 - Unit 7

Value
2% 89. The case study refers to the transportation networks in Bangladesh and compares them to those in Japan in the chart provided. List two differences in the linkages in developed and lesser-developed nations.

Value
6% 90. The country of Bangladesh must develop secondary cities and an improved transportation network as a way of lessening the problems of its mega-cities. With reference to trends in transportation technology and information from the case study, identify and explain three improvements that should take place to allow the present transportation network to be more effective.

Unit 8 - Population

Value
2% 91. The decision to migrate is influenced by push and pull factors. Identify an example of each from the Case Study.

Value
6% 92. Assume that the government of Bangladesh is proposing a policy that limits migration within their country as a way of addressing population issues of Dhaka. With reference to migration and information from the case study, take a stand on this proposed policy supporting your opinion with at least two arguments.

Unit 9 - Settlement and Urbanization

Value
2% 93. Based on the graph titled “Urban Population Increase for Selected Cities” (page 1 of the Case Study) what conclusion can you draw with respect to rate of urbanization in cities of less developed countries compared to cities of more developed countries?

Value
6% 94. The case study touches on conditions in the city of Dhaka. With reference to quality of life indicators and information in the case study, identify what three indicators could be used to describe living conditions in Dhaka.