

Geography 12

January 2001 Provincial Examination

ANSWER KEY / SCORING GUIDE

- Topics:**
1. The Nature of Geography
 2. Systems of the Earth
 3. Resources of the Earth

Part A: Multiple Choice

Q	K	S	C	T	PLO	Q	K	S	C	T	PLO
1.	B	1	K	2	2A1	21.	D	1	U	2	2C1a, 2C2, 1B1
2.	A	1	U	1	1B4, 2B5	22.	B	1	U	2	2C1d
3.	A	1	U	1	1C1, 2A3	23.	B	1	U	2	2C1b
4.	B	1	U	1	1C1, 2A3	24.	C	1	U	2	2C1b
5.	A	1	U	2	2A3	25.	D	1	U	2	2D1
6.	A	1	K	2	2A2	26.	B	1	U	1	1B1
7.	C	1	U	2	2B1	27.	D	1	U	2	2D3c
8.	B	1	U	2	2A4, 2A2	28.	A	1	U	2	2D3c
9.	C	1	K	2	2B2	29.	A	1	K	3	3B2, 1B4
10.	B	1	U	2	2B3, 1C2	30.	C	1	K	2	2D3b
11.	D	1	U	2	2B3, 1C2	31.	D	1	K	2	2D3b
12.	C	1	U	2	2B2, 1C2	32.	D	1	U	2	2D3b
13.	A	1	U	2	2B4, 3A2	33.	C	1	U	2	2D3e
14.	B	1	U	3	3A1	34.	C	1	K	2	1B2, 2D3d
15.	A	1	K	3	3A4a	35.	B	1	U	1	1C1
16.	C	1	K	1	1A2	36.	A	1	U	1	1C1
17.	D	1	U	1	2C1, 1C2	37.	C	1	U	1	1C1
18.	A	1	U	2	1A1, 2C2	38.	B	1	U	2	2B3
19.	B	1	U	2	2C1A, 2C1e	39.	A	1	U	1	1C1, 1C2
20.	C	1	U	2	2C1e	40.	B	1	U	2	2D3d

Multiple Choice = 40 marks

Part B: Written Response

Q	B	C	S	T	PLO
1.	1	H	6	1	1B4, 3C1
2.	2	U	4	2	2D3c, 2D1
3.	3	H	6	3	3A1, 3A4
4.	4	U	4	2	2B3, 1B4
5.	5	H	6	1	1A1
6.	6	H	6	3	3C1, 3C3
7.	7	U	4	3	3A4a, 3B1
8.	8	U	4	3	3A3, 3B1
9.	9	H	10	3	3C4, 2C2, 2C3

Written Response = 50 marks

Multiple Choice = 40 (40 questions)

Written Response = 50 (9 questions)

EXAMINATION TOTAL = 90 marks

LEGEND:

Q = Question Number

C = Cognitive Level

T = Topic

K = Keyed Response

S = Score

PLO = Prescribed Learning Outcome

B = Score Box Number

PART B: WRITTEN RESPONSE

Value: 50 marks

Suggested Time: 80 minutes

INSTRUCTIONS: Answer each question in the space provided. You may not need all of the space provided. Answers should be written in **ink**. **Comprehensive answers are required for full marks.**

**REFERENCE
DATA BOOKLET**

Use **Photograph 2** and the **topographic map** to answer question 1.

1. Recently, concerns have been expressed about the ability of the Lake Louise region, one of North America’s most popular tourist spots, to withstand the pressures of human activity. Explain how increased human activity threatens the park. Discuss management strategies that would help protect the region. Answer in **paragraph** form. **(6 marks)**

Response:

The impact of human activity on the Lake Louise Region

- more people means more effluent in the river
- more garbage and litter to dispose of in nearby dumps
- increased traffic on the Trans Canada Highway (more pollution)
- more acid precipitation from increased traffic
- more run-off from the transportation systems along the river
- increased use of salts on the roads to keep them safe in winter
- need for protection of wildlife from the roadways which interfere with migration patterns (fencing and tunnels)
- pressures to expand the commercial and residential developments will threaten the sensitive landscapes along the river (loss of plant and animal habitat)
- limited space to expand
- more runs and service facilities will be needed for skiers and snow boarders (will reduce habitat)
- increased pressure and damage on the trail system and hillsides from hikers and mountain bikers
- more people angling on the rivers and streams, reducing stocks
- human / animal confrontation (bears)
- avalanche / landslides / mass wasting due to human actions
- deforestation due to urban / recreation expansion
- possible overuse / shortage of fresh water due to future expansion
- forest fires
- visual / aesthetic pollution

Management Strategies	<ul style="list-style-type: none">• controlled growth of the town and its businesses• vertical not horizontal development in the town site (if only to limit sprawl)• wildlife corridors and overpasses for the migration of animals• restrictions on the use of the facilities in the park• limitations on the numbers of hikers / bikers on the trails• strict building and development code• sophisticated waste treatment facilities• improved design of road and highway drainage• strict guidelines governing the guiding operators in the park• education of tour operators and tourists• quota / user fees, more policing and management• increase the number of park rangers• laws and enforcement• limit car traffic — use buses / carpool etc.• guided tours to control park use• tolls / increased tolls
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Select one of the following to answer question 2.
Indicate your selection with a ✓.

Frost shattering

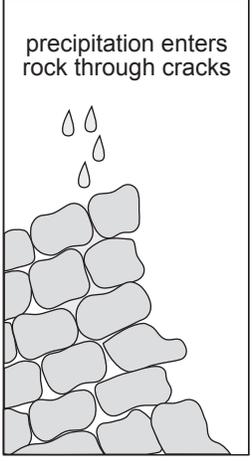
Longshore drift

2. With the aid of a clearly labelled diagram or diagrams, **explain** either the process of frost shattering or longshore drift. (4 marks)

Response:

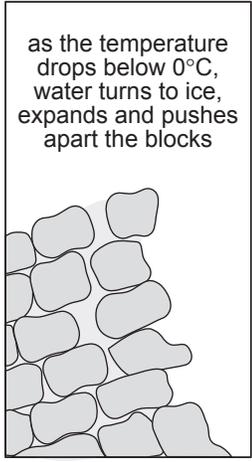
FROST SHATTERING

precipitation enters rock through cracks



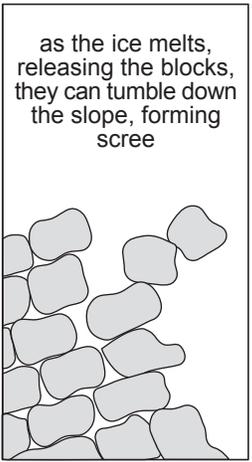
A diagram showing a rock face with several cracks. Three water droplets are falling from the top into the cracks.

as the temperature drops below 0°C, water turns to ice, expands and pushes apart the blocks



A diagram showing the same rock face. The cracks are now filled with ice, and the rock blocks are being pushed apart by the expanding ice.

as the ice melts, releasing the blocks, they can tumble down the slope, forming scree



A diagram showing the same rock face. The ice has melted, and several rock blocks have tumbled down the slope, forming a scree pile.

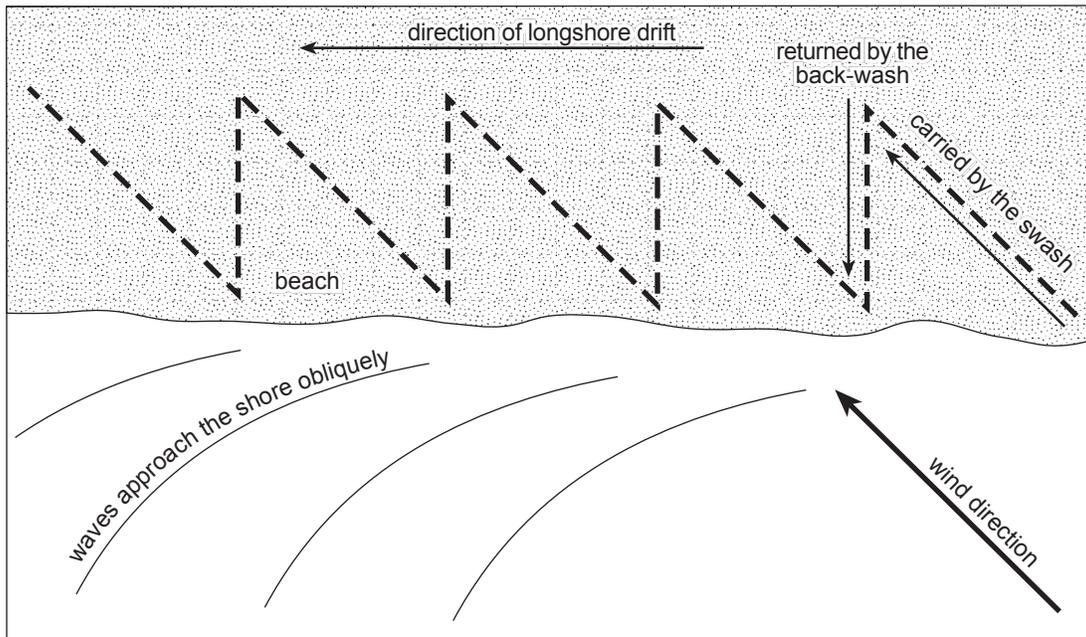
The splitting apart of rocks by freezing and expansion of water in fractures and joints (water increases in volume by approximately 9% when frozen). Answers may include a diurnal process. Common in high altitude and high latitude regions where the temperatures frequently rise and fall about the freezing point; a repetitive process.

Note to Markers:

This question to be marked holistically. The explanation may be shown in the diagram. Also acceptable are drawings that include urban landscapes — roads, sidewalks, examples of bottles filled with frozen water that expanded and cracked.

Response:

LONGSHORE DRIFT

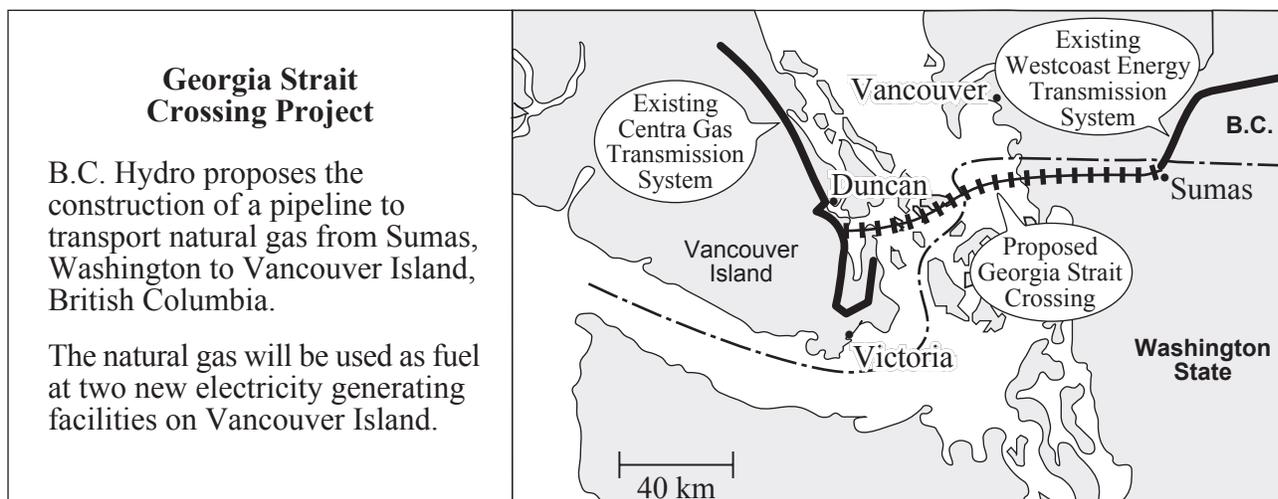


An ocean current moves down a coastline within the shallow breaking zone next to the shoreline. When the wind blows at an oblique angle to the shore, waves break obliquely onto the coast. The swash carries sand grains up the beach at an angle while the backwash carries the sand particles down the beach. Longshore drift occurs in a zig-zag motion.

Note to Markers:

This question to be marked holistically. The explanation may be shown in the diagram.

Use the following information to answer question 3.



3. **Identify** and **explain** three advantages and three disadvantages of the proposed Georgia Strait Crossing Project. (6 marks)

Response:

<p>Advantages</p>	<ul style="list-style-type: none"> • reduces reliance on foreign fuel (natural gas is a resource of both B.C. and Alberta; pipelines currently exist to transport this product intra and extra provincially; Canadian dollars do not leave the country to purchase offshore fossil fuels) • improves trade relationships (transmission of gas from one sector to another entails complex credits and debits; bottom line costing should ensure efficiencies; harmonization of expenditures and cooperation will become paramount; interdependencies result) • generates tax revenue (at all points along the exploration, production, transmission, distribution and retailing, taxes will be applied, creating general revenues for the government) • creates permanent jobs (longer term jobs, until the resources run out, will be created in fields ranging from the manual to technological to scientific to managerial; these jobs will be tax paying and consumptive of other goods and services, creating even more employment) • creates jobs in natural gas industry (as demand increases so will exploration and service industries) • stimulates the economy (creates new jobs where they did not exist before) • increases economic diversity (Vancouver Island has harvested the products of forest and sea, but a new and sustained energy source could allow for new industry such as aluminum smelting or other energy intensive industry)
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Advantages	<ul style="list-style-type: none">• energy for industry (existing industries could compete more successfully with mainland industry which enjoys a more secure supply and new ones such as greenhouse agriculture could start or expand)• creates high-end technical jobs (instrumentation engineers and undersea welding are just a few of the jobs that could be created or expanded with such an enterprise)• cleanest burning fossil fuel (while hydro-electricity is a cut above burning natural gas, in terms of a clean burn, gas is miles ahead of other fossil fuel alternatives such as oil or coal)• the delivery of natural gas is safer than some other fossil fuels (oil transport, coal transport)• avoid environmental damage to B.C. by routing through Washington State• may sell electricity generated to the U.S.A.• may lead to spin-off industries• Americans may get revenue from Canada for gas• clean, cheap, efficient method of transport as trucks / tankers emit NO₂
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Disadvantages

- short term jobs (much of the job creation associated with the project is short term— construction, pipe-laying, terminal building)
- harm or death of marine life (pipeline will require seabed dislocation; aquatic habitat will be disrupted)
- potential of gas leaks or explosions (land or marine environment / habitat could be damaged; attendant pollution)
- burning gas produces CO₂ and SO₂ (with all the belated concern over increasing air pollution, global warming and acid rain, such a proposal is a retrograde step)
- the region is prone to earthquakes (the crossing point is in a tectonically active area; the potential for pipeline rupture is high; a halt in supply would have widespread effects for both the domestic and industrial markets)
- loss of fishing potential (during the construction phase and perhaps afterwards, the migratory pattern of fish could be altered)
- right of way damage (trees will need to be cleared during construction; the possibility of flooding and soil erosion increased; forest habitat will be destroyed on the terrestrial portion of the line)
- the need for storage sites (needs to be factored into the equation; to assure uninterrupted supply, land either surface or subsurface will be needed to store reserves of the gas; this has its attendant problems)
- high cost of the right of way (land will need to be purchased or leased, some on foreign soil, which will be expensive and probably remain in effect long after the serviceable life of the pipeline has been reached)
- it is extremely expensive to build a pipeline (the cost of construction may never be recaptured; the service life of the pipeline and the non-renewable nature of the resource need to be weighed against any benefits)
- energy needs continue to rely on a non-renewable resource (there is little incentive, other than rising costs, to reduce consumption or accelerate research and use of alternative energy supply; currently B.C. has surplus hydro-electricity capacity so why introduce a fossil fuel; thermal format?)
- a large number of governmental bodies are involved (the pipeline will be international; municipal, provincial, state and federal agencies will need to agree on its construction, maintenance and supervise safety concerns)
- interference with shipping
- dangerous to build and maintain
- continued increase to price of natural gas may lead people to reject it, rendering the pipeline useless
- cost to buy from U.S.A.
- ugly
- may have difficulty with native land claims

4. a) **Identify** the natural vegetation associated with the region represented by the photograph. **(1 mark)**

Response:

Natural vegetation	<ul style="list-style-type: none"> • desert • cactus (saguaro) • xerophytes • reg desert • succulents 	<ul style="list-style-type: none"> • sagebrush • creosote bushes • grasses • mesquite
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- b) Vegetation in this biome has adapted to the physical conditions in several ways.

Explain the reason for each of the following adaptations. **(2 marks)**

Response:

Extensive root structure	<ul style="list-style-type: none"> • shallow roots to absorb nutrients and moisture before it evaporates after rainstorms • deep tap roots to reach groundwater • roots act as an anchor in strong winds
Thick trunk, lack of leaves	<ul style="list-style-type: none"> • store water. • conserve moisture. • reduce transpiration. • and thorns to protect plant from animals.

c) **State** one major threat to this biome.

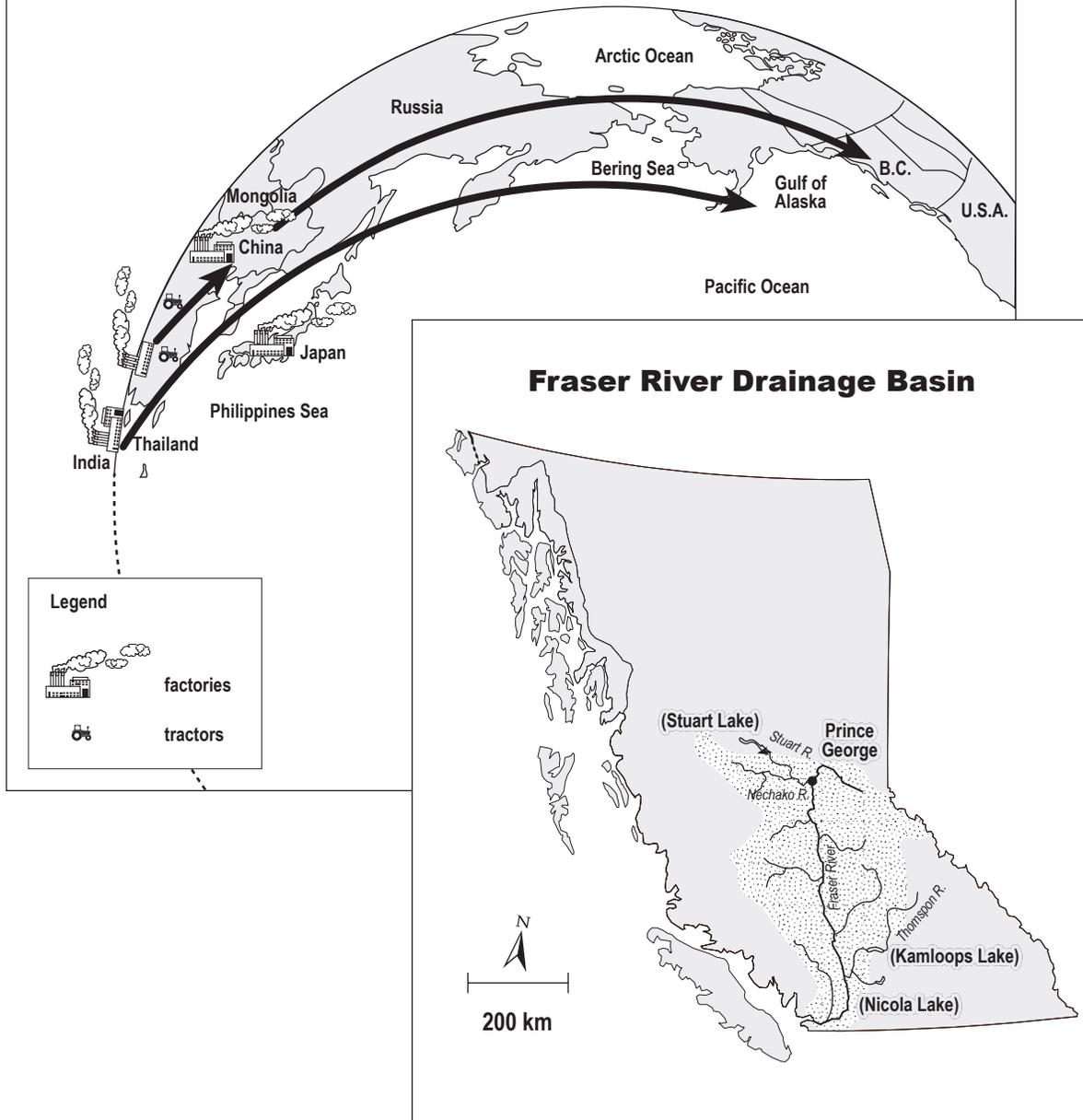
(1 mark)

Response:

Threats	<ul style="list-style-type: none">• tourism• soil erosion• overgrazing• flash floods• invader, non-native species• urban encroachment• wild fire, brush fire, bush fire• desert expansion / desertification• illegal harvesting of the natural vegetation• damage from off-road vehicles and dirt bikes• recreational development (resorts / golf course)• drought (lack of water)• climate change (global warming, ozone)• agricultural activities (groundwater used in other areas for irrigation)• human activity (oil extraction)
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Use the following information to answer question 5.

Airborne Pollutants from Asia Found in Fraser River Drainage Basin



5. a) **Explain** why pollutants from Asia can be found in the Fraser River drainage basin.

(2 marks)

Response:

Explanation	<ul style="list-style-type: none">• hot tropical air, laden with airborne toxic chemicals such as DDT and toxaphene (both banned in Canada but still used in developing countries for agriculture and malaria mosquito control) rises convectionally into the atmosphere• these particulates, as well as rising dust particles, act as the nuclei around which the cooling water vapour condenses• clouds / frontal systems are carried across the vast stretches of the Pacific Ocean by the prevailing Westerlies and the jet stream• these toxic clouds reach the west coast of North America where the relief forces the moist air to rise, to condense and to precipitate as they encounter the Coastal and Interior Mountain ranges
Note to Markers: Student must mention wind and precipitation to receive marks. Do not accept ocean currents as a response. Student can get 0 marks in section a) but still receive 4 out of 6 marks for the whole question.	

- b) **Describe** two different impacts these pollutants may have on the Fraser River drainage basin. **(2 marks)**

Response:

Impact upon the ecology of the Fraser River	<ul style="list-style-type: none">• falling to the earth as rain, snow and ice these toxic chemicals leach into ground and surface water systems and soils• acid precipitation falls as snow during the winter; biotic systems are “shocked” during the spring and summer — the sudden increase in toxicity levels of lakes and rivers is due to the melting of snow• the process of biomagnification ensues as these pollutants concentrate in the sediment of lakes and in the tissue of fish• DDT, toxaphene and PCBs pose serious health concerns — several of which are directly linked to cancers and birth defects — because they concentrate in human and animal tissues• increase in acid living organisms as an invader species• acid lakes weaken immune systems of aquatic species• disrupts the breeding and reproduction cycles of aquatic species• job creation through research and lake testing• increased soil erosion as vegetation dies on slopes• long-lasting chemicals• drinking water• health — respiratory problems• economic — fishing / farming affected
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c) **Suggest** two reasons why solutions to the problem are so difficult to achieve. (2 marks)

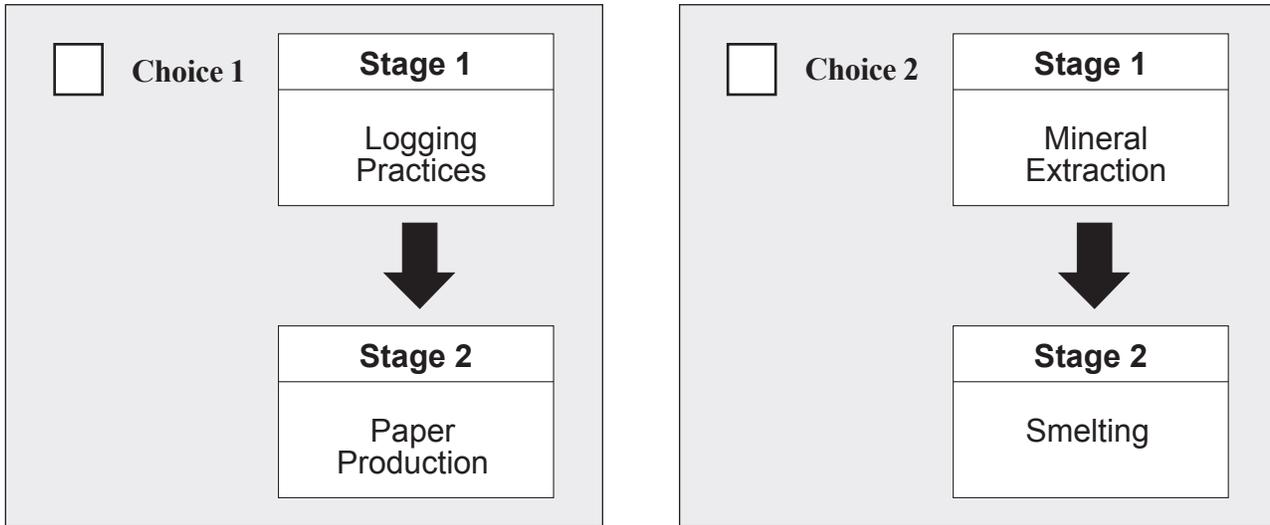
Response:

Why solutions are difficult to achieve	<ul style="list-style-type: none">• pollution knows no boundary — atmospheric pollutants carried by global winds are impossible to control and difficult to trace• international cooperation between the governments of Asia and North America is difficult to achieve (emission standards, banning of toxic substances)• no incentive for a shift to a more expensive but less polluting form of energy or less harmful agricultural practices• the high cost and proprietary nature of technology transfer from developed countries• less developed countries are buying the developed world's cast-offs, which are not energy efficient / reliance on fossil fuels• Asian countries are entering an industrial phase which will lead to higher consumption of fossil fuels• prosperity leads to higher energy consumption (improved living standards lead to increased demand)• building of infra-structure such as roads and industrial base which increases burning of fossil fuels• power and influence of multinational corporations• unchecked populations need to eat; therefore, population control is needed but is often culturally difficult to implement• education• lack of awareness or concern for harm• economy more significant• no incentive to stop• we buy the products
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Select one of the following economic activities to answer question 6.

Indicate your selection with a .

Economic Activities in British Columbia



6. **Outline** three environmental problems associated with each stage of the economic activity you have selected. **(6 marks)**

Response:

<p>Logging Practices</p>	<ul style="list-style-type: none"> • loss of gene pool • loss of biodiversity of species of flora and fauna • wildlife habitat is lost • an increase in soil erosion and landslides • potential changes to local and global climate patterns • wind speed, wind throw and evaporation are increased • deterioration and possible collapse of entire watersheds • traditional land use destroyed • stream habitat lost through siltation • inland and coastal fisheries damaged or destroyed • the loss of potential medical cures from plants and trees • an increase in the greenhouse gases • smoke from slash and burn decreases visibility • the loss of soil fertility because of increased leaching • interruption of the hydrological cycle resulting from the decrease of water vapour through transpiration • clearcutting • soil compaction from equipment • leaking fuels and exhaust from logging equipment • nutrient cycle destroyed (transpiration) • damage due to road building • aesthetic beauty destroyed • decreased infiltration
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<p>Paper Production</p>	<ul style="list-style-type: none"> • Requires large amounts of fresh water. • Suspended soils and organic waste raise the biochemical oxygen demand. • Toxins and dioxins such as bleaching agents and wood preservative destroy shellfish / fish habitat. • Odour, while not hazardous, reduces environmental quality in areas adjacent to pulp mill. • Chemical pulping adds mercury to water; contaminates aquatic organisms (shellfish, fish) and causes health problems for communities. • Thermal pollution from paper production. • SO₂ leading to acid rain. • CO₂ leading to global warming. • Requires large amounts of energy to produce paper and the production of energy has environmental consequences. • Fallout of particulate matter.
<p>Mineral Extraction</p>	<ul style="list-style-type: none"> • Creates dust and noise which may be a health hazard and nuisance to local residents. • The mine may conflict with nearby land uses (tourism, national parks, housing). • The destruction of plant and animal habitat. • Landscape destruction. • Transportation of materials (noise, air pollution). • Discharging toxic wastes into rivers and groundwater. • Can create unusable land, subsidence ponds and sinkholes. • Discharge into oceans (along with lakes, rivers). • Acid mine (rock) drainage. • Disposal of overburden/tailings (dumps).
<p>Smelting</p>	<ul style="list-style-type: none"> • Release of CO₂ during smelting process results in global warming. • Release of NO₂ or SO₂ will result in acid rain. • Particulate matter (solids) from the furnaces could enter the atmosphere and fall as dust. • Smoke from the smelter could destroy vegetation and contaminate the soil. • Waste disposal. • Atmospheric pollutants and smoke can cause respiratory problems. • Smelting requires a large amount of energy.

Use the following headline to answer question 7.



7. a) **Suggest** two reasons why fresh water will become more valuable than oil. **(2 marks)**

Response:

<p>Water will be more valuable than oil because</p>	<ul style="list-style-type: none">• water is a necessary substance required to sustain all life within the biosphere. It is needed to sustain both human life and vegetation—without it, life cannot exist. Oil is a dwindling, non-renewable resource which is slowly and gradually being replaced by alternative energy sources. There are, however, no known alternatives to fresh water (Desalination is still, at this time, an extremely costly proposition and is something that is utilized primarily by developed nations.)• as water becomes more of a saleable commodity, countries rich in fresh water resources are being looked at as the OPEC nations of the future.• countries spend a phenomenal amount of money, time, and other resources on water projects (wells, reservoirs, dams, water diversion schemes).• as climatic changes continue and certain areas become more arid, water will need to be diverted to agricultural zones in order to meet global food demands.• the increasing costs of water is forcing those in the agricultural industry to develop irrigation techniques that use less water and conserve this precious resource.• growing global population demands more food; therefore, there is more agricultural production in the less well watered regions of the world (even more irrigation required).• it is expected that future regional / global conflicts may arise from the uneven distribution, diversion and contamination of fresh water resources.
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<p>Water will be more valuable than oil because</p>	<ul style="list-style-type: none"> • it is a necessity for all life. • there is uneven distribution. • it is removable. • it is a clean alternative energy source. • of groundwater overdraft. • it has a variety of uses.
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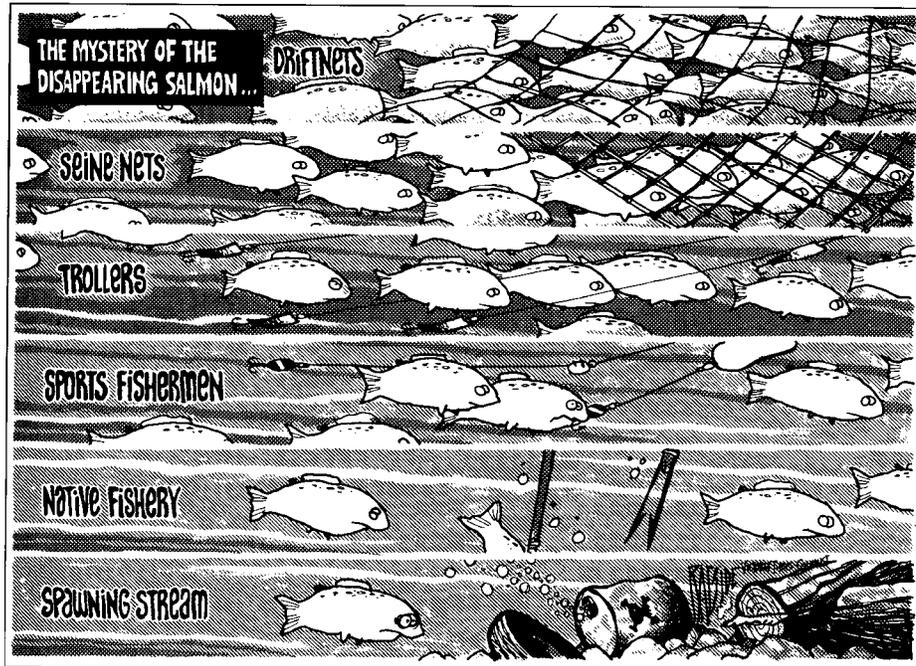
b) **Outline** two ways to conserve fresh water resources.

(2 marks)

Response:

<p>Freshwater Conservation</p>	<ul style="list-style-type: none"> • use low flow flush toilets • plant drought-resistant crops • plant rock gardens rather than flower beds (xeriscaping) • use PowerSmart shower heads • institute and enforce sprinkler regulations • use meters to reduce consumption by charging user for the actual cost of water, increasing the cost of water, preventing waste • collect rainwater for watering gardens • recycle water used in industrial cooling • establish co-industries (heat greenhouses with the water used to cool machines) • improve irrigation techniques (drip irrigation, early morning watering, collect water in a dug out as it drains away for reuse) • education re: conservation — awareness of the serious nature of the problem • treatment facilities to reduce pollution entering water • improved logging practices to preserve watersheds
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Use the following cartoon to answer question 8.



8. a) What is the intent of the cartoonist's message?

(1 mark)

Response:

<p>The cartoonist's point is</p>	<ul style="list-style-type: none">• that there are a number of causes for the declining salmon stocks; overharvesting and destruction of the aquatic habitat.• to bring attention to declining fish stocks; to increase public awareness.• the salmon escape being caught and arrive at the spawning beds only to find the area polluted and unsuitable—the fish could spawn, but the offspring stand little chance of survival.• that different interest groups result in decreased salmon stocks.
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b) **Identify** and **explain** three different ways to protect salmon stocks.

(3 marks)

Response:

<p>Salmon stocks could be protected by</p>	<ul style="list-style-type: none">• using tertiary sewage treatment (do not dispose of sewage in streams).• restricting forestry along spawning rivers.• banning dam construction on spawning rivers.• creating fish ladders.• converting areas with spawning rivers to parks.• limiting the catch for all groups (sports, natives and commercial fishers) / reducing annual allowable catch.• negotiating a conservation treaty with the United States (and other international stakeholders).• imposing large fines for foreign fishers in Canadian waters.• developing fish hatcheries.• salmon enhancement programmes.• increasing cost for fishing licences.• placing a moratorium on fishing (not fishing for extended periods or taking years off of fishing to increase stocks).• the use of aquaculture (could decrease pressure on wild stocks; but could also endanger wild stocks if mismanaged).• placing size restrictions on catches (put smaller immature fish back).• penalties.• enforcement.• boycotts.• regulations.• catch and release.
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9. Using the data provided and your understanding of geography:

- **describe** the physical and natural characteristics which make the Hawaiian Islands a unique ecosystem.
- **explain** how the ecosystem is being threatened by agriculture and tourism.
- **suggest** reasons why the management of this ecosystem is so difficult.

Answer in **multi-paragraph** form.

(10 marks)

Response:

<p>Physical characteristics of Hawaii’s unique ecosystem</p> <p>Note to Markers: (Student is not required to reference human activity to get full marks.)</p>	<p>Near the Tropic of Cancer</p> <ul style="list-style-type: none"> • warm weather all year (tropical maritime climate) • over eight hours of sunlight most days • crops can be grown all year • mid-Pacific location means short flight time from North America and Asia (tourism) • location ideal for ocean trade • suitable climate for tourism • solar power potential <p>Islands surrounded by warm ocean water</p> <ul style="list-style-type: none"> • commercial fishing (tuna) • aquaculture potential • warm, shallow waters • ideal for water based activity (recreation / tourism) <p>High rainfall on the NE side of the islands, lower rainfall on the SW side</p> <ul style="list-style-type: none"> • freshwater source • nourishes tropical forests • biodiversity of both plant and animal species (ecotourism) <p>Dormant and active volcanoes from hot spot activity</p> <ul style="list-style-type: none"> • geothermal power • minerals • new land (fertile soil) • soil suitable for agriculture <p>Varied landscape (volcanoes, tropical rainforest, sandy beaches, coral reefs)</p> <ul style="list-style-type: none"> • attractive scenery for tourism (sightseeing) • hills ideal for hiking and rock climbing • valleys and shoreline suitable for urban development • higher elevations receive snowfall (freshwater source, skiing) • steep valleys and high rainfall provide hydro-electric potential
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<p>Agriculture and tourism threats to the ecosystem</p>	<p>Removal of natural vegetation due to</p> <ul style="list-style-type: none"> • urbanization (road development) • agriculture (plantations) • tourist resorts (hotels, golf courses) <p>Draining of wetlands due to</p> <ul style="list-style-type: none"> • urbanization • tourist resorts <p>Alteration of natural beaches by</p> <ul style="list-style-type: none"> • resorts • coastal alteration for marinas • harbour / shipping facilities <p>Soil erosion</p> <ul style="list-style-type: none"> • due to removal of rainforests for plantations and ranches • gullying occurs on slopes where animals graze <p>Loss of biodiversity (species)</p> <ul style="list-style-type: none"> • introduction of foreign species (pineapple, banana, sugar cane) • removal of natural vegetation for plantation crops • birds and animals spread seeds of alien species of flora • original island species developed without natural defences against predators, so when invader species are introduced, the islands's unique species are defenseless <p>Pollution problems</p> <ul style="list-style-type: none"> • chemicals from agricultural activities • sewage treatment facilities required on each island • air pollution from petroleum use <p>Volume of visitors</p> <p>Removal of souvenirs (coral reef)</p> <p>Film industry</p>
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Why management of this ecosystem is difficult to achieve

- fragmentation — the local governments of each island must agree to solutions and their implementation
- financial commitment is required to protect natural habitats
- tourism is Hawaii's major economic activity; they need to continue development in order to compete with other resort destinations
- many islanders are reluctant to introduce any restrictions that may have an adverse effect on a fragile, narrowly based economy
- strict laws / legislation could hurt the economy
- plantations are privately owned, making enforcement difficult
- conflicting points of view between the various interest groups
- many don't see the value in protecting the environment (it is difficult to convince people the value of unique species like insects and small plants)
- no ownership (tourist "attitude")
- population density
- military presence / influence
- sprawl

END OF KEY