

Past-paper walk-through

Effects of Diffusion ■ 3.8

eXercise

Questions in this set

- 2025 Set 1 Q3
- 2024 Set 1 Q2
- 2024 Set 2 Q1
- 2023 Set 1 Q2

Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- **//** separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = “or words to that effect” – the wording need not match.

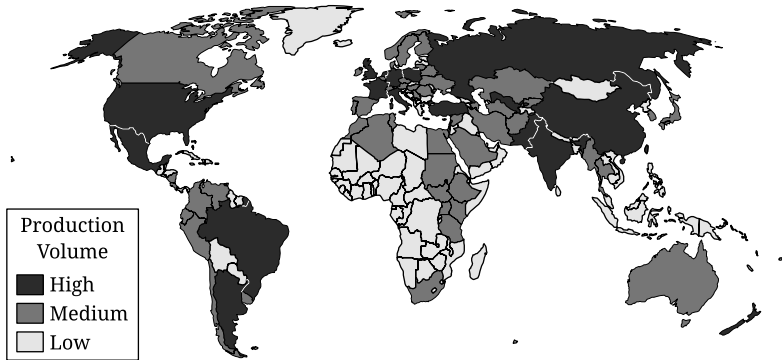
Question 3

2025 Set 1 ■ Q3

The global production of cow's milk and pork results in distinctive spatial patterns of contemporary agriculture and land use.

- (a)** Identify an example of a culture trait.
- (b)** Describe the spatial pattern of cow's milk production in Africa, shown in Map 1.
- (c)** Based on Map 1 and Map 2, compare the spatial patterns of cow's milk production and pork production in Asia. (Response must include both maps in the comparison.)
- (d)** Describe one environmental effect of agricultural land use such as commercial animal farms.
- (e)** Explain how the globalization of agriculture may affect local culture traits.
- (f)** Explain why regions of agricultural production may become interdependent.
- (g)** Explain how domesticated animals such as pigs spatially diffused to create the spatial pattern shown on Map 2.

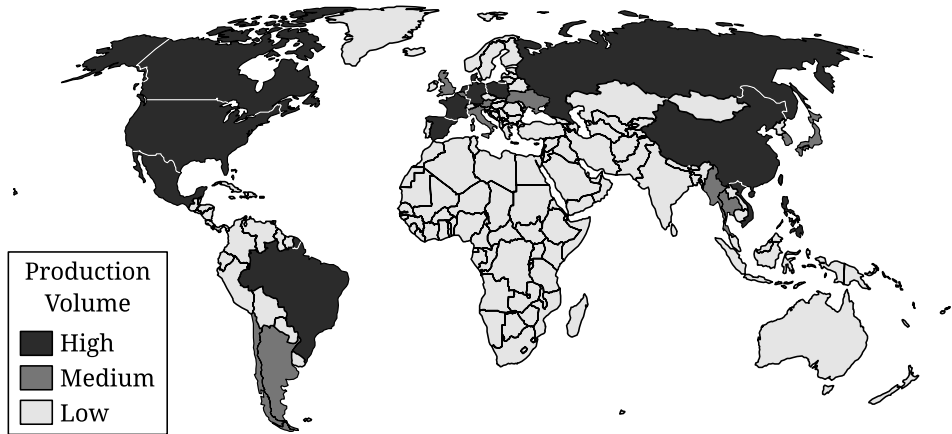
Question 3



Source: Food and Agriculture Organization

Map 2: Pork Production, 2018

Question 3



Solution 3

(a)

Mark scheme

- - Culture traits include such things as food preferences, art, architecture, language, religion, music, clothing, media, technology, and/or land use.

Solution 3

(b)

Mark scheme

- - Medium and/or high amounts of cow's milk production are concentrated or clustered in the north, east, and/or south.
- - Low amounts of cow's milk production are concentrated or clustered in west, central, and/or southwest Africa.

Solution 3

(c) Mark scheme

- - Map 1 shows that cow's milk is produced in most Asian countries at high or medium volumes, whereas Map 2 shows that pork is produced at high or medium volumes in East Asia and/or parts of Southeast Asia, or in low volumes in South and/or Southwest Asia.
- - Cow's milk is produced in most Asian countries, whereas pork is not produced in regions with large Islamic populations, such as the Middle East (Southwest Asia), Central Asia, South Asia, and/or parts of Southeast Asia.
- - Cow's milk production and pork production are low in insular Southeast Asia (e.g., Indonesia, Malaysia, East Timor, Papua New Guinea).

Solution 3

(d) Mark scheme

- - Environmental effects of agriculture land use include pollution (e.g., air, water, waste), land cover change (e.g., soil erosion), nutrient depletion, desertification, and/or soil salinization.
- - The reduction of water supplies for agricultural purposes, such as depleting reservoirs, lowering the local water table, and/or draining aquifers.
- - The reduction of biodiversity from changes in land cover (e.g., deforestation, grassification, feed-crop monoculture).
- - The spread of disease between domestic and wild animal populations or between animal populations and humans.

Solution 3

- - Climate change and/or global warming because such farms produce greenhouse gases (e.g., carbon dioxide, methane, water vapor).
- - Agricultural land use can promote the survival or the growth of environmentally beneficial species (e.g., pollinators, working animals, heirloom varieties).

Solution 3

(e) Mark scheme

- - Globalization of agriculture and/or the global system of agriculture may lead to changes in food preferences.
- - Globalization may lead to people preferring to eat foods imported from other countries that were not previously available to them (e.g., tropical fruits in temperate climates).
- - Globalization may lead to the availability of less expensive imported foods that are substituted for more expensive local foods (e.g., imported wheat replacing locally grown corn).

Solution 3

- - Consumers may resist the globalization of the food supply and in response buy domestically produced food, local food, and/or purchase food from community-supported agriculture.
 - - Globalization of agriculture may lead to a reduction in the number of small family farms, which can affect local cultural traits (e.g., settlement patterns by prompting rural-to-urban migration, social roles by having fewer people working in agriculture).
 - - Globalization may lead to changes in agricultural land use or agricultural production methods through the implementation of new technologies, architecture, and/or equipment (e.g., data analytics, drones, vertical farming, autonomous tractors), affecting local culture traits (e.g., crops, farming practices).
- F Explain why regions of agricultural production may become interdependent.

Solution 3

(f) Mark scheme

- - Some regions and/or countries have become highly dependent on one or more export commodities, which causes different regions to depend on one another for specific agricultural commodities.
- - Regions of agricultural production are connected through global food distribution networks that are affected by political relationships, infrastructure, and/or patterns of world trade.
- - Global patterns of food-processing facilities and markets, economies of scale, distribution systems, and government policies all contribute to greater interdependence among agricultural production regions.

Solution 3

- - Countries may develop comparative advantages, complementarity, specialty crops, and/or consumer markets that establish trade relationships and increase interdependence between two or more countries.
- - Countries in a region may form trade relationships that result in increased trade in farm products (e.g., EU, ASEAN, MERCOSUR).

Solution 3

(g) Mark scheme

- - Domesticated animals such as pigs diffused from their hearths of domestication through relocation diffusion (e.g., settlers bringing animals to new areas).
- - Domesticated animals such as pigs diffused from their hearths of domestication through the Columbian Exchange.
- - International trade, imperialism, and/or colonization introduced domesticated animals such as pigs that were transported to other regions of the world.
- - Domesticated animals such as pigs spread through migration or expansion diffusion, altering food preferences and/or increasing demand for diverse animal products domestically and/or internationally.

Solution 3

- - Domesticated animals such as pigs spread to areas where consumption of these animals was culturally acceptable and/or did not spread to areas where consumption of such animals was culturally unacceptable.

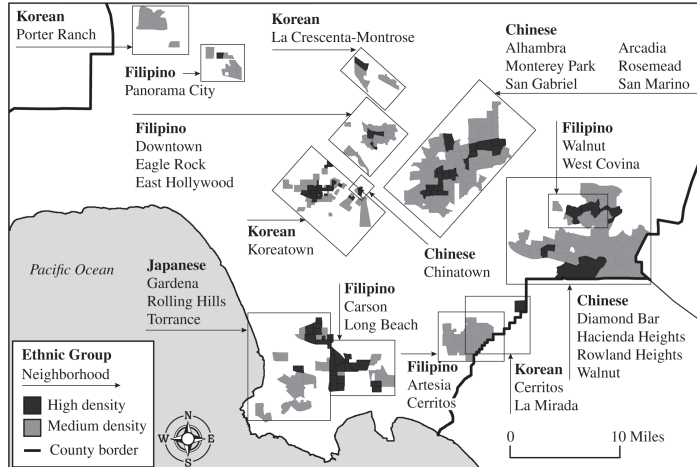
Question 2

2024 Set 1 ■ Q2

The map shows predominantly Asian ethnic neighborhoods in Los Angeles County, California. The names of the neighborhoods and the densities of the ethnic groups are identified on the map.

(a) Identify ONE neighborhood labeled on the map where two or more Asian ethnic groups reside.

Question 2



Question 2



Question 2

2024 Set 1 ■ Q2

The map shows predominantly Asian ethnic neighborhoods in Los Angeles County, California. The names of the neighborhoods and the densities of the ethnic groups are identified on the map.

(b) Describe the spatial pattern of Chinese ethnic neighborhoods labeled on the map.

Question 2

2024 Set 1 ■ Q2

The map shows predominantly Asian ethnic neighborhoods in Los Angeles County, California. The names of the neighborhoods and the densities of the ethnic groups are identified on the map.

(c) Explain ONE way immigrants may choose to assimilate into their new place of residence.

Question 2

2024 Set 1 ■ Q2

The map shows predominantly Asian ethnic neighborhoods in Los Angeles County, California. The names of the neighborhoods and the densities of the ethnic groups are identified on the map.

(d) Explain ONE way immigrants may preserve their ethnic traditions in their new place of residence.

Question 2

2024 Set 1 ■ Q2

The map shows predominantly Asian ethnic neighborhoods in Los Angeles County, California. The names of the neighborhoods and the densities of the ethnic groups are identified on the map.

(e) Describe ONE way that ethnic neighborhoods may contribute to a sense of place in large metropolitan areas such as Los Angeles.

Question 2

2024 Set 1 ■ Q2

The map shows predominantly Asian ethnic neighborhoods in Los Angeles County, California. The names of the neighborhoods and the densities of the ethnic groups are identified on the map.

(f) Explain how the process of redistricting may be used to decrease an ethnic community's political power.

Question 2

2024 Set 1 ■ Q2

The map shows predominantly Asian ethnic neighborhoods in Los Angeles County, California. The names of the neighborhoods and the densities of the ethnic groups are identified on the map.

(g) Explain how the process of redistricting may be used to increase an ethnic community's political power. and fill in the appropriate circle at the top of each page to indicate the question number. Metacities and Top-Tier World Cities, 2020 Source: United Nations Selected Cities Urban Area Population, Population, Population Growth, 2000 to 2020 City GDP per Capita, Country GDP per Capita, Cairo 13.6 million 20.9 million 54% 4,8653,609 Dhaka 10.3 million 21.0 million 104% 7,9202,001 New York City 17.9 million 18.8 million 5% 86,61563,529 Paris 9.7 million 11.0 million 13% 71,34639,180 Note: Values are estimates based on publicly available data.

Solution 2

(a)

Mark scheme

- - Walnut, Cerritos, Chinatown, or Koreatown

Solution 2

(b)

Mark scheme

- - The neighborhoods are clustered inland and/or away from the coast.
- - The neighborhoods are clustered in the eastern or northeastern portion.
- - The neighborhoods are in areas east of the Los Angeles central business district (CBD).
- - The neighborhoods are aligned along an east-west axis.

Solution 2

(c) Mark scheme

- - Immigrants may adopt culture traits (e.g., language, food, clothing, religion, music, sport) of the majority population group.
- - Immigrants may change, hide, and/or abandon aspects of their own culture (e.g., language, food, clothing, religion, music, sport).
- - Immigrants may achieve entry into social and economic networks (e.g., schools, workplaces, business associations, attaining citizenship).
- - Immigrants may settle in non-ethnic neighborhoods rather than in ethnic neighborhoods and/or ethnic enclaves.

Solution 2

(d) Mark scheme

- - By engaging in placemaking using aspects of their traditional culture (e.g., architecture, toponyms, signage) to establish a sense of place.
- - By continuing to celebrate and/or practice their ethnic traditions (e.g., traditional holidays, ethnic or traditional food, native languages, traditional clothing).
- - By creating or engaging with local institutions that promote their culture (e.g., schools, arts centers, religious groups, language learning centers, business associations, markets, organizations).

Solution 2

- - By seeking legal or other formal recognition and/or adoption of their traditions by the majority population (e.g., language taught in schools, bilingual social services, recognition of holidays).
- - By encouraging social relationships and/or connecting with those who share the same ethnic traditions in different places (e.g., ethnic neighborhoods, enclaves, on social media, country of origin).

Solution 2

(e) Mark scheme

- - Ethnic neighborhoods exhibit names (e.g., toponyms), signs, sounds (e.g., language, music), symbols (e.g., religious, cultural, political), art, architecture, and/or foods typical of that ethnicity.
- - Ethnic neighborhoods create a distinct cultural landscape that is different from surrounding areas.
- - Ethnic neighborhoods often contain distinctive cultural institutions (e.g., places of worship), traditions, celebrations, retail shopping, and/or restaurants.
- - People may form perceptions, mental maps, or emotional attachments to ethnic neighborhoods based on the distinct culture traits or cultural events in that area.

Solution 2

(f) Mark scheme

- - Redistricting or gerrymandering may negatively affect ethnic groups if the districts are redrawn to minimize the number of ethnic group voters in that area.
- - Redistricting or gerrymandering may be used to reduce the representation and/or the political power of that community by dividing (e.g., cracking) an ethnic area into two or more voting districts.
- - Redistricting or gerrymandering may be used to limit the representation and/or political power of those ethnic groups and/or allow a greater number of surrounding districts the chance to be won by the party in power by combining (e.g., packing, stacking) two or more ethnic areas into one voting district.

Solution 2

- - Redistricting or gerrymandering could result in a candidate from the ethnic community being geographically eliminated from running in that district, reducing the community's representation.
- - Redistricting or gerrymandering may intentionally decrease voting access or participation because of the changing boundaries of the districts.

Solution 2

(g) Mark scheme

- - Redistricting or gerrymandering may be used to empower ethnic groups if the districts are redrawn to maximize the number of ethnic group voters in that area.
- - Redistricting or gerrymandering may be used to increase the ethnic group's representation and/or political power by dividing (e.g., cracking) a non-ethnic group majority area into two or more voting districts.
- - Redistricting or gerrymandering may be used to limit representation and/or political power of the non-ethnic majority by combining (e.g., packing, stacking) two or more majority group areas into one district.

Solution 2

- - Redistricting or gerrymandering may be used to increase ethnic communities' political power by creating and/or recognizing majority-minority districts.
- - Redistricting or gerrymandering may be used to better represent ethnic communities' interests and/or increase voter participation by aligning district boundaries with ethnic areas.

Question 1

2024 Set 2 ■ Q1

The interaction of people contributes to the spread of cultural practices that change over time and vary between places. Interactions among cultures can lead to new forms of cultural expression.

(a) Describe ONE type of diffusion by which culture traits spread.

Question 1

2024 Set 2 ■ Q1

The interaction of people contributes to the spread of cultural practices that change over time and vary between places. Interactions among cultures can lead to new forms of cultural expression.

(b) Describe the process of creolization of language.

Question 1

2024 Set 2 ■ Q1

The interaction of people contributes to the spread of cultural practices that change over time and vary between places. Interactions among cultures can lead to new forms of cultural expression.

(c) Describe how the globalization of foods has influenced cultural patterns of food consumption.

Question 1

2024 Set 2 ■ Q1

The interaction of people contributes to the spread of cultural practices that change over time and vary between places. Interactions among cultures can lead to new forms of cultural expression.

(d) Explain ONE way that agricultural land use practices may have negative environmental effects.

Question 1

2024 Set 2 ■ Q1

The interaction of people contributes to the spread of cultural practices that change over time and vary between places. Interactions among cultures can lead to new forms of cultural expression.

(e) Explain how a new style of music may be created as a result of cultural diffusion from different regions.

Question 1

2024 Set 2 ■ Q1

The interaction of people contributes to the spread of cultural practices that change over time and vary between places. Interactions among cultures can lead to new forms of cultural expression.

(f) Explain how toponyms may result from the diffusion of religion across the cultural landscape.

Question 1

2024 Set 2 ■ Q1

The interaction of people contributes to the spread of cultural practices that change over time and vary between places. Interactions among cultures can lead to new forms of cultural expression.

(g) Explain the degree to which the use of indigenous languages has been influenced by colonialism. (Response must indicate the degree [low, moderate, high] and provide an explanation.) and fill in the appropriate circle at the top of each page to indicate the question number. Washington, D.C., and Surrounding Jurisdictions Source: ESRI Data Partners

Solution 1

(a) Mark scheme

- - Expansion diffusion, as ideas or practices spread through a population into different areas.
- - Relocation diffusion, as ideas or practices spread from one location to a new or distant location, or to a location across a geographic barrier.
- - Hierarchical diffusion, as ideas or practices spread from one important or significant city, community, and/or person to another.
- - Contagious diffusion, as ideas or practices spread from person to person or along a transportation line.
- - Stimulus diffusion, as ideas or practices are borrowed from one culture and altered by another culture.

Solution 1

(b) Mark scheme

- - Interactions between or among culture traits and/or larger global forces lead to new forms of cultural expression and/or new languages.
- - Two or more languages converge or mix to create a new language or new form of communication.
- - People speaking two or more languages experience syncretism and/or combine their languages to form a new language.
- - The development of a new language or dialect occurs due to the contact between groups that speak different and/or mutually unintelligible languages.

Solution 1

- - The blending of two or more languages in which the new language includes selected features of either original language.

Solution 1

(c) Mark scheme

- - Globalization has resulted in the global spread of various plants and/or animals.
- - Globalization has resulted in the spread of ingredients, cuisines, foods, and/or food cultures to people around the world.
- - Globalization has resulted in policies (e.g., safety regulations, labeling requirements) that may affect consumer preferences (e.g., organic, Kosher, Halal).
- - Globalization has popularized foods from different regions (e.g., sushi, tacos, kebabs).
- - Globalization alters the quantity, type, and/or cost of foods.

Solution 1

- - Globalization has expanded food options, changed diets, and/or changed levels of nutrition.
- - Globalization has reduced the consumption of local foods as people opt for globally distributed foods (e.g., fast food, processed, frozen).
- - Globalization provides access to crops that were formerly only available in certain climates and/or year-long access to foods that were formerly only seasonally available.

Solution 1

(d) Mark scheme

- - Agricultural practices may result in increased pollution (e.g., soil, air, water) through chemical inputs (e.g., fertilizers, pesticides), resource use, and/or mechanized farming.
- - Agricultural practices may contribute to water runoff that can pollute or degrade the quality of local or downstream water supplies (e.g., streams, rivers, lakes, oceans, groundwater, aquifers, wetlands).
- - Agricultural pollution may contribute to global environmental problems (e.g., the greenhouse effect, climate change, ozone layer damage).

Solution 1

- - Agricultural practices (e.g., plowing, terracing, deforestation, draining wetlands, grazing animals) may degrade and/or eliminate plant or animal habitats, change ecosystems, and/or reduce biodiversity.
- - Agricultural practices (e.g., irrigation, dryland farming) may contribute to soil salinization, desertification, and/or soil erosion.

Solution 1

(e)

Mark scheme

- - A new style of music may be created through a process of cultural interaction (e.g., syncretism, creolization, communication technologies).
- - When two or more musical styles come into contact, their elements may be combined to create a new musical style, tradition, instrument, dance, and/or genre.

Solution 1

(f)

Mark scheme

- - The diffusion of religion may result in places (e.g., neighborhoods, cities, sub national units, regions, countries) or natural features (e.g., rivers, mountains) being named after important religious figures, sacred sites, places of worship, events (e.g., holidays), and/or symbols.
- - The process of colonization and/or sequent occupance leaves evidence of past religions through placenames or the names of natural features.

Solution 1

(g) Mark scheme

- To earn the point, state a DEGREE (high, moderate, or low) to which indigenous language use was influenced by colonialism AND support it with a valid justification.
- For a HIGH degree (strongly reduced):
 - - Colonizers restricted indigenous language use by imposing their own languages to govern (e.g., by law), assimilate (e.g., religion), and/or communicate (e.g., a lingua franca taught in schools).
 - - Colonization reduced the number of indigenous-language speakers through disease and/or conflict.

Solution 1

- - Colonialism replaced indigenous languages with colonizers' languages in toponyms, maps, charts, and/or other representations.
- For a MODERATE or LOW degree (limited influence):
- - In some areas colonialism encouraged indigenous language use (e.g., Nahuatl in Central America) by employing indigenous people for administrative or religious purposes.
- - In some areas (e.g., parts of Africa and Oceania) indigenous languages remain widely used because of local resistance or flourishing cultural centers.
- - In some areas (e.g., Paraguay, Oaxaca, Guatemala) colonizers' languages were not widely adopted, leaving indigenous languages largely unaffected.

Question 2

2023 Set 1 ■ Q2

One stimulus.

PER CAPITA PRODUCTION OF STAPLE FOOD CROPS IN HEARTH-OF-DOMESTICATION COUNTRIES

Country	Corn/maize (lb per capita)	Potato (lb per capita)	Rice (lb per capita)	Yam (lb per capita)	Cassava/manioc (lb per capita)
Brazil	1,056	39	108	3	183
China	412	145	333	0	52
Mexico	471	31	4	0	0
Nigeria	121	15	93	549	618
Peru	107	362	216	0	13

Question 2

Hearths of domestication: corn/maize = Mexico; potato = Peru; rice = China and Mali; yam = Niger River basin; cassava = Amazon River basin. Source: Food and Agriculture Organization of the United Nations.

Staple food crops provide most of the carbohydrates in people's diets, and some staples are also used as animal feed or in the distillation of ethanol. Cassava is a root crop (tuber) that is the source of farinha, tapioca, and the pearls in bubble tea.

- (a)** Describe the concept of an early hearth of domestication.
- (b)** Identify the crop listed in the table that has diffused the least from its hearth of domestication to the countries listed in the table.
- (c)** Explain how food preferences can be a culture trait.
- (d)** Explain how the Columbian Exchange contributed to a crop's diffusion beyond its hearth of domestication.

Question 2

- (e) Explain how the data in the table support the concept of a crop's consumption pattern being the result of globalization.
- (f) Explain why a crop may be farmed intensively in a less developed country and be farmed extensively in a more developed country.
- (g) Explain ONE way the global supply chain links crops such as those listed in the table to consumers in other countries.

Solution 2

(a)

Mark scheme

- Describe an early hearth of domestication (1 point) — accept any: a location where new (agricultural) practices develop and/or from which they spread; a place where a plant or animal was first domesticated; sites of early civilizations that domesticated plants/animals (e.g., Fertile Crescent, Indus Valley, SE Asia, China, Andean Highlands, Amazonia, Central America); an ancient society whose farmers converted wild species into domesticated varieties over time via selective breeding.

Solution 2

(b)

Mark scheme

- Identify the least-diffused crop (1 point): Yam (yams) — it shows high production only at/near its Niger River basin hearth (Nigeria) and near-zero production in the other countries listed.

Solution 2

(c)

Mark scheme

- Explain food preference as a culture trait (1 point) — accept any: many foods have distinct ingredients/preparations indicative of a specific culture group; culture groups identify with national dishes representing their food culture; foods contain ingredients/crops local to a culture's region; foods are part of a way of life or are forbidden, as expressed in belief systems, religion, artifacts, calendars, or holidays.

Solution 2

(d)

Mark scheme

- Explain the Columbian Exchange's role in crop diffusion (1 point) — accept any: it relocated crops between world regions through conquest, ecological imperialism, colonization, and/or trade routes; it moved crops due to changing food preferences, cultural assimilation, or changing agricultural practices; it may have accidentally/unintentionally introduced a crop beyond its hearth (e.g., seeds as "stow-aways" in cargo).

Solution 2

(e)

Mark scheme

- Explain how the data show globalization of consumption (1 point): high per-capita production/consumption of a crop far from its hearth (e.g., Brazil produces 1,056 lb of corn per capita; rice grown/consumed outside China) shows the crop is globalized. Accept links to globalized food culture/media/preferences; multicultural societies and global migration; globalized trade/transport (free-trade or neoliberal policies, comparative advantage, containerization, bulk shipping); or a growing global middle class of consumers — each evidenced by production away from the hearth.

Solution 2

(f)

Mark scheme

- Explain intensive (LDC) vs extensive (MDC) farming (1 point) — accept any: LDC subsistence/intensive farming on small plots to feed a household vs MDC extensive/commercial farming on large farms for a company's consumers; LDC intensive manual labor (hand tools, animal power) vs MDC mechanized, low-labor extensive production; LDC farmers lack capital/equipment/inputs so rely on intensive human labor while MDC farmers can invest in extensive inputs; LDC farms use local resources to feed families/communities while MDC farms exploit economies of scale for large populations.

Solution 2

(g) Mark scheme

- Explain ONE global-supply-chain link (1 point) — accept any: crops are transported internationally to consumers via storing, processing, packaging, wholesaling, and/or retailing; crops feed the global restaurant/fast-food industry, cultivated/processed in one country then distributed to restaurants in another; growing global consumption of frozen/dried/canned/dehydrated foods means crops are processed into preserved forms and distributed abroad for long-term storage; crops are processed into other forms (e.g., corn for ethanol or animal feed) then shipped to wholesalers, retailers, or consumers in other countries.