

Markscheme

November 2022

Geography

Higher level and standard level

Paper 2

7 pages

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Section A

1. Changing population

- (a) Outline **one physical** factor that can lead to an area having a high population density. [2]

Award [1] for the valid factor and [1] for development.

Valid reasons include:

- proximity to river [1]; this will ensure a consistent water supply [1]
- availability of flat land [1]; means land is easier to build on [1]
- coastal locations [1]; for easier access to trade [1]
- fertile soil in an area [1]; crop yields are high [1]
- access to energy or mineral resources [1] development of industry [1]
- temperate/equable climates [1] allow agricultural production/pleasant living conditions [1].

- (b) Suggest **two** ways in which a demographic dividend can bring economic benefits to a country. [2 + 2]

Award [1] for a valid economic benefit and [1] for development (at a national level).

Possibilities include:

- The “bulge” in the adult population leads to a high number of economically active people paying taxes [1], benefitting the overall economy / GDP of the country [1].
- More economically active adults than elderly dependents [1] means that less governmental tax income will go towards e.g. pensions/care homes [1].
- A lower number of young dependents than economically active people [1] will incur less cost for education [1].
- More people in the economically active sector gives a market for goods/services [1] this will stimulate industrial activity [1].
- Increase in labour supply [1] attractive for MNCs/industrial investment/boost to national productivity.

- (c) Explain **two** ways in which environmental push factors lead to forced migration. [2 + 2]

Award [1] for the specific environmental push factor and [1] for the development explaining how it has led to forced migration.

Possibilities include:

- Crops fail due to excess heat [1], leading to food insecurity/loss of livelihood [1].
- Homes are destroyed by volcanic eruption/earthquake [1], therefore people have nowhere to live [1]
- Extreme weather events such as cyclones destroy communities [1] people's homes destroyed [1]
- Long term climate change such as increased increased drought/changing monsoons/desertification [1] – decrease agricultural yields [1]
- Soil erosion/degradation [1] – unable to farm and produce food [1]
- Water contamination from rising sea levels/chemicals [1] – water supply reduced/unable to irrigate [1]
- Sea level rise flooding coastal/lowland areas [1] – inundation of farmland/communities [1]
- Wildfires [1] – destroy settlements [1]

2. Global climate — vulnerability and resilience

- (a) Describe the distribution of the selected heatwave events shown on the map. [2]

Award [1] for each valid statement about the distribution, up to a maximum of [2].

Possibilities include:

- Uneven
- More in S Europe
- Clusters in SW Europe / Southern Spain
- Clusters in SE Europe/Romania/Bulgaria
- There are fewer in Northern Europe (such as in Sweden and Norway)
- There are fewer in Central Europe (Southern Germany, Czech Republic).

- (b) Suggest **two human** factors that can increase vulnerability to extreme weather events. [2 + 2]

Award [1] for a valid human factor and a further [1] for development. Do NOT award a mark for physical factors.

- Lower level of economic development of an area [1] could indicate a lower investment in projects that would help to reduce vulnerability [1].
- Due to poverty [1], large numbers of people live in locations/property which are/is more at risk from extreme weather [1].
- Development in areas that are liable to experience the impacts of extreme weather [1] – housing development on floodplains/lowland coasts [1].
- In areas that have an ageing population there may be greater risk [1] due to reduced mobility [1].
- In areas with lower education levels [1] there may be less knowledge as to how to prevent / minimize the vulnerability to extreme weather events [1].
- Governmental policies may prioritize spending in different areas such as education or health [1] – disaster preparation is not addressed [1].
- Limited risk perception by the population/governments [1] – continue to live in areas that experience extreme weather [1]
- Gender profile/women more vulnerable [1] – skewed power relations/roles in production/lack of access to education/exclusion from decision making [1]
- Occupation of the population [1] – farmers may be more vulnerable to weather as it is vital for their living [1]
- Populations that suffer from the impacts of conflict [1] – often live in situations that are susceptible to extreme weather [1]

- (c) Explain **two** government-led strategies to reduce the causes of global climate change. **[2 + 2]**

Award [1] for a valid government led strategy and [1] for development related to reduction of cause.

For example:

- Government investment in renewables [1] – reduction of GHG emissions from fossil fuels [1]
- Government commitment to global conferences, such as Cop26 in Glasgow (**not just the name of a Protocol/COP**) [1], can lead to specific government planned action to combat the source of GHGs (*must state specific planned action*) [1].
- Planning committees encourage replanting of forests [1] to create a new carbon sink [1].
- Government-sponsored geoengineering strategies [1], such as cloud seeding to increase cloud cover to reflect solar radiation [1].
- Local government strategies, such as recycling [1], reducing methane emissions from landfill [1].
- Efficiency measures by local government eg installation of LED bulbs/insulation [1] – saves on energy use [1]
- Transport policies such as making life easier for pedestrians/cyclists [1] – takes cars off the roads so decreases use of fossil fuels [1]

3. **Global resource consumption and security**

- (a) (i) State the daily water usage in gallons per person for the Dominican Republic. [1]

1000

- (ii) Estimate the range of water usage. [1]

1693 (accept 1685–1710)

- (b) Explain **two** aspects of Boserup’s optimistic view of resource management. [2 + 2]

Award [1] for each valid understanding of the Boserup approach and [1] for development to show how it impacts on management of the food resource.

For example:

- New inventions/increase in technology [1] will increase food availability by using new machinery [1].
- An increase in ingenuity [1] will lead to high yield varieties of crops [1].
- Land reform [1] will lead to increased productivity of food [1].
- Increase in population stimulates agricultural change [1] – more food produced to feed population [1]
- Humans will develop alternative resources [1] – switch of food resources to cultured meat/plant based substitutes [1].

- (c) Explain why the growth of the global middle class may lead to:

- (i) increased water consumption; [2]

Award [1] a valid reason and [1] for development.

For example:

- The rise in disposable income associated with the GMC [1] means they are able to buy more advanced appliances eg power showers/recreational use of water [1].
- Rise of GMC means more access to taps [1] – 24 hour availability of water [1]
- Increased education of population [1]
- Increased consumption of food/meat [1] – embedded water/growth of crops requires water/meat production is heavy user of water [1]
- Increased use of natural resources/minerals [1] – water needed in extractions and processing [1]
- Increased use of water in construction [1] – GMC build more and better houses [1]

- (ii) changes in diet. [2]

Award [1] a valid reason and [1] for development.

For example:

- An increase in knowledge about what makes a healthy diet [1], leads to an increase in buying more fresh/organic food products [1].
- Increased availability/ability to afford of a range of food choices [1] and this can lead to higher consumption of higher-cost food such as meat/imported foods [1]
- Increased disposable income [1] – increase in amount of food consumed [1]
- Changing perception of food [1] – Westernized diets [1]
- Increased purchasing power [1] – shift away from staples [1]
- Growth of GMC in urban settings [1] – access to restaurants/convenience foods [1]

Section B

4. (a) State the female **and** male age groups that have the highest number of bed days used. [1 + 1]

Female 85+ [1]

Male 70–74 [1]

- (b) Suggest **one** weakness of the choropleth map in the infographic in the way it represents the old age dependency data. [2]

Award [1] for a valid suggestion and [1] for development.

For example: The area that is represented is an average [1], and variations within the area are not shown by category [1].

Other possibilities include:

- the categories are not continuous data
- boundaries between the counties show abrupt changes in value but in reality changes are much more gradual
- counties/provinces not identified
- choropleth maps are normally shown as gradations of the same colour – makes them easier to interpret.

- (c) To what extent does the evidence in the infographic support the view that ageing is a significant issue for the Republic of Ireland? [6]

Award [1] for each valid point supported by evidence taken from the infographic and/or development of a valid point, up to a maximum of [5].

Award a maximum of [4] if only one side of the argument is given.

Award the final [1] for an overall appraisal, which weighs up the infographic as a whole.

Support:

- Reference to hospital beds occupied by ageing population.
- Reference to healthcare concerns (arthritis).
- Reference to increasing life expectancy.
- Reference to concentration of high/low age dependency ratios in certain areas.
- Healthcare costs relating to old people continuing to rise (11% GDP by 2050).

Against:

- Reference to contributions to society (caring for their grandchildren).
- Reference to economic contributions to members of the family.
- Reference to areas that do not contain high old age dependency.

Do not credit simple quoting of data from the resource – it needs to be given a context.

For example: Ageing is a significant issue for Ireland because providing medical care for the older population takes up a lot of GDP [1]. 30% have fair or poor health [1]. On the other hand, it is not an issue that is significant across the whole of Ireland [1]. The elderly can make contributions to society such as caring for their grandchildren [1]. The elderly also provide financial support to the younger generations [1]. On balance, ageing is an issue and will become an increasing issue in the future as life expectancy rises [1].