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GEOGRAPHY

Higher Level and Standard Level

Paper 1

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Core Theme – Patterns and Change

SECTION A

1.   **Populations in transition**

   (a)   Define *Crude Birth Rate*.   *[2]*

   Births *[1 mark]* per 1000 of population *[1 mark]* *per year*.

   (b)   (i)   Estimate the rate of natural increase in 2010.   *[2]*

   1.5 *[1 mark]* % *[1 mark]* (allow 1.4 or 1.6)
   or
   15 *[1 mark]* per 1000 *[1 mark]* (allow 14 or 16)

   (ii)   State the year in which the natural increase rate is projected to become negative.   *[1]*

   Any year between 2050–2055 *[1 mark]*

   (c)   Explain the meaning of the term *population projection*.   *[2]*

   A prediction/estimate of future populations *[1 mark]* based on current/past demographic trends (more needed than just BR and DR) *[1 mark]* such as population structure and rates of fertility, mortality and immigration.

   (d)   Suggest *two* reasons why governments need population projections.   *[2+2]*

   Award *[1+1 marks]* for each valid reason, provided that it is developed by means of explanation and/or detail.

   Possibilities could include:
   - ability to estimate future state revenue from taxes / size of future working population
   - size of potential armed forces / age and sex ratio of future population
   - allocation of services in the future / *eg* elderly care for ageing population
   - need to apply or modify anti or pro natal policies / if population shrinking or growing too large
   - change of migration policies / if economically active population is shrinking
   - need to provide more future employment opportunities

2. Disparities in wealth and development

(a) State which country, A or B, has a more *even* distribution of total income and give a reason for your choice. *[1+2]*

Country A *[1 mark]*
Reason: curved line closer to diagonal *[1 mark]*, diagonal represents line of absolute even distribution *[1 mark]*.
Alternatively candidates could accurately refer to the data to support choice, comparing A with B.

(b) Suggest *two* reasons why an *uneven* distribution of income occurs within *one* *named* country or region. *[2+2]*

Award *[1+1 marks]* for each valid reason, provided that it is developed by means of explanation and/or detail.

Example:
Named country: China
Foreign direct investment *[1 mark]* eg China special economic zones *[1 mark]*.
Government investment focused in urban areas *[1 mark]*; rural areas have much lower average incomes *[1 mark]*.

The focus can be reasons why some people earn more than others; or why some places/regions produce more wealth.

Possibilities could include:
Ethnicity, residence, education, employment, land ownership, resource distribution, gender inequities, diet and water supply, accessibility, government policies.

No valid example: maximum *[3 marks]*.

(c) Explain *two* ways in which remittances can help reduce disparities in the migrants' country of origin. *[2+2]*

Award *[1+1 marks]* for each valid "way", provided that it is developed by means of explanation and/or exemplification.

Example: Money or goods go directly to citizens *[1 mark]* reducing the possibility of loss through officialdom/corruption *[1 mark]*.

Other possibilities could include:
- often hard currency/greater value in receiving country
- increases spending/boosts local markets
- often going to extended families/increased standard of living of a large number of individuals
- greater in volume than ODA/more effective development strategy
- flow in one direction/does not result in external debt.

3.   Patterns in environmental quality and sustainability

(a)   State a likely cause for X.   *[1]*

Deforestation, salinization, urban growth, industrialization *[1 mark]*.

**(b)   Referring to the diagram/map, describe the global pattern of soil degradation
         due to overgrazing.**   *[3]*

Any three valid statements referring to pattern for *[1 mark]* each.

Possibilities could include:
*   overgrazing is the main cause of soil degradation in Australia – 90 %
*   greatest hectares/area in hectares affected in Africa though
*   highest % values are in the southern hemisphere
*   highest % cause of soil degradation in all regions except the Americas
*   lowest value is Asia at 32 %.

Data must be utilized in describing the pattern for full marks.

(c)   Explain *two* socio-economic consequences of soil degradation.   *[2+2]*

Award *[1+1 marks]* for each valid consequence, provided that it is developed by
means of explanation and/or exemplification.

Example: loss of agricultural productivity of land *[1 mark]* acts as a push factor to
migration *[1 mark]*.

Other possibilities could include:
*   loss of agricultural productivity, food shortages
*   reduced aquifer recharge damages farmers' incomes and water access
*   loss of employment, increased poverty in an area
*   creates environmental refugees, problems of displaced population.

**(d)   Explain *one* management strategy that is likely to achieve environmental
         sustainability.**   *[4]*

There are many possible strategies at any scale (local, national, global). Only
necessary to describe and explain the strategy to gain full marks; it is not required to
offer any evaluation.
Identification of strategy *[1 mark]*; description/location of strategy *[1 mark]*;
developed explanation of how it links to sustainability *ie* preserves a resource for
future generations while at the same time deriving economic and other benefits from
their use *[2 marks]*.

4. **Patterns in resource consumption**

(a) **Describe the trends shown by the graph.** *[4]*

Any three of the following statements for *[1 mark]* each:
- solid waste produced is rising over time
- levels off/declines a little after 2005
- landfill/incineration always much larger than recycled
- recycled not taking off until 1980s
- recycling increasing as a proportion of solid waste.

One of statements must refer to data values for the final *[1 mark]*.

(b) **(i)** **State *one* example of resource substitution.** *[1]*

Example must name both the old resource and the new resource *[1 mark]*.
Possibilities such as:
- fibre-optics replacing copper
- cotton bags replacing plastic bags
- biofuel replacing petroleum.

(ii) **Explain *one* benefit of the resource substitution you have chosen in (b)(i).** *[2]*

Depending on the resources chosen, potential benefits include reduced costs, faster production, less pollution, less waste, replacement of non-renewable resource by renewable resource, *etc*. Benefits may be to people/the environment/industry, *etc*.

Award *[1 mark]* for explaining why the resource substitution chosen in (b)(i) is beneficial (*eg* cheaper/less pollution). Award *[1 mark]* for development and/or exemplification.

(c) **Referring to examples, distinguish between waste recycling and waste reduction.** *[4]*

Waste recycling describes the re-processing of waste to produce a new product *[1 mark] eg* plastic bottles are recycled to produce new plastic products such as park benches or new bottles *[1 mark]*.

Waste reduction describes a broader range of methods that reduces the amount of waste produced *[1 mark] eg* re-using materials, repairing broken goods, lower consumption, reduced packaging *[1 mark]*. *This strategy could include recycling.*

SECTION B

5.   "**The Millennium Development Goals (MDGs) have *not* improved life for the world's poorest people." Discuss this statement.**   *[15]*

Responses would be expected to show knowledge of the MDGs. Good responses may query what is meant by "poorest" and may take a broader approach than focusing solely on changing income distributions, perhaps by also showing knowledge of life satisfaction index, happiness index, *etc*. Or at least make some distinction between economic and social development criteria. For example, they may consider the lives of women, primary school children, elderly, HIV/AIDS sufferers, *etc*.

Responses may show that many of the world's poorest people still face obstacles to health, welfare and education provision, especially where there is poor governance of resources. However, the counter-argument would be that there have been successes, such as populations in SE Asia and S Asia where considerable progress has been made.

There may be some recognition that the targets are tied to percentages; thus, even when targets are met, large numbers of people can still experience a low quality of life, especially where fertility rates are high *eg* sub-Saharan Africa.

The strongest answers may conclude that some MDGs are easier to reach in some places than others and that some sectors of the population are more or less marginalized than others.

Responses presenting accurate, specific and well detailed knowledge and understanding of two or more of the MDGs with relevant examples and discussion are likely to reach bands E or F.

Marks should be allocated according to the markbands.

6. **"There is no truly sustainable solution to the world's growing energy problems."**
    Discuss this statement.   *[15]*

    Responses are likely to identify energy-related problems such as: meeting the growing
    demand; increasing the use of renewable sources of energy; cutting energy costs,
    increasing energy availability; expansion of energy production into sensitive environments.
    There could be a brief explanation of the causes of the problems identified.

    Responses could also include some discussion of what a sustainable solution involves, with
    clear reference to being able to meet future demand.

    Candidates are likely to divide energy resources into renewable (wind, solar, geothermal,
    hydro, tidal) and non-renewable (fossil fuels and possibly nuclear energy). Many answers
    are likely to discuss each of the renewable sources, pointing out their relative merits.
    However, development of renewable sources (generally considered to be sustainable) is
    unlikely to be able to meet the growing demand owing to high investment costs and
    locational considerations.

    In considering some of the other energy problems, the discussion might extend to strategies
    of energy conservation/reduction.

    To reach bands E and F, responses should show a sound understanding of sustainability
    and a good knowledge of at least two distinct energy problems.

    Marks should be allocated according to the markbands.

7. **Using examples, examine how environmental factors can be a cause of migration.**   *[15]*

    Both forced and voluntary migration may be relevant to this question.

    Responses should consider environmental factors at both the point of origin and the final
    destinations and the strongest responses may refer to environmental changes, such as
    global warming, as well as disparities in resource availability, *etc*.

    At the origin, push factors include: lack of water / poor water quality, soil degradation,
    other resource shortages, rising sea levels, changing habitats due to climatic factors.

    Physical attractions of the receiving region could include the perception of attractive
    climate (sunbelt migration), water availability.

    Responses that do not focus on environmental factors should not progress beyond
    band C.

    Responses must make use of examples to reach bands E and F.

    Marks should be allocated according to the markbands.