Cambridge O Level

Cambridge Assessment International Education
Cambridge Ordinary Level

GEOGRAPHY **2230/01**

Paper 1 Themes **October/November 2017**

MARK SCHEME

Maximum Mark: 75

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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LEVELS OF RESPONSE MARKING

It is the quality of the response which determines the mark achieved and differentiates between candidates rather than the quantity of comments. However, once assigned to a level, the mark achieved within that level is determined by the number of points made.

Level 1 [L1] is characterised by simple statements.

Level 2 [L2] will contain statements which are developed / elaborated. A candidate can immediately enter L2 by making developed points from the outset, without making any L1 statements.

For **Level 3** [L3], a candidate must have achieved the top end of L2 [6 marks] with an answer containing developed statements which address all aspects of the question and include at least one clear example, if required [7 marks].

LEVEL	CHARACTERISTICS	MARKS	CONTENTS
L1	Simple statements	1 2 3	1 simple statement 2 simple statements 3 simple statements
L2	Developed statements	4 5 6	1 developed statement 2 developed statements 3 or more developed statements
L3	Top of L2 statements [i.e. 3 or more developed statements]	7	3 or more developed statements All aspects of question covered [A] At least one example, if required

Theme A: The natural world

Answer **one** question from this theme, **either** Question 1 **or** Question 2.

Question	Answer	Marks
1(a)(i)	**Study Fig. 1, which is a diagram of a volcano.** **Identify the type of volcano shown and name features A and B.** Credit the following Shield = 1, A Crater = 1, B Pipe / vent = 1	**3**
1(a)(ii)	**Describe the shape of the volcano shown in Fig. 1.** Credit the following at one mark each Wide base Gentle slope (not very steep = 0) Low / short Narrow top Triangular	**3**
1(a)(iii)	**Explain how the volcano shown in Fig. 1 developed its shape.** Credit the following at one mark each Basic lava Non-viscous / low viscosity Runny / non explosive / moves fast Spreads (over large area) Cools / solidifies slowly	**4**
1(b)(i)	**Study Fig. 2, which shows parts of the North American and Pacific Plates.** **Name the type of plate boundary shown in Fig. 2 and give the direction of movement of both the North American and Pacific Plates.** Credit the following Transform / conservative = 1 North American plate moves south east = 1 Pacific plate moves north west = 1	**3**
1(b)(ii)	**Explain why earthquakes occur along the plate boundary shown in Fig. 2.** Credit the following at one mark each Plates move in opposite / different directions / past each other Driven by convective forces / currents Plates stick / movement not smooth / held still Due to friction Pressure builds Energy stored Sudden release / overcomes friction / jerks apart Shock waves / faulting / sudden movement / tremors / vibrations	**5**

Question	Answer	Marks
1(c)	**Explain how the different characteristics of earthquakes cause damage and loss of life. Give examples to support your answer.** Answer must refer to a feature of the earthquake itself in order to gain L2 status; otherwise points remain basic even with examples. Features can include strength, reference to vibrations, nearness to focus or epicentre, time of day, associated factors like liquefaction, mountainous terrain, triggering volcanoes, tsunami, density of population, etc. (preparation = 0) Examples = earthquakes / areas (not countries unless dated) Levels marking <u>Examples of simple statements</u> Basic statement supported with example could be L2 (once only). No repetition. The stronger the earthquake the greater the damage Some earthquakes trigger tsunamis The nearer to the epicentre the greater the damage Strong earthquakes can shatter transport systems <u>Examples of developed statements</u> An earthquake above 6 on the Richter scale will make some buildings collapse Places near to the epicentre receive stronger shock waves, so much greater damage occurs Some earthquake waves are magnified by travelling through soft soil, thus causing more damage Buildings above a shallow focus are more likely to collapse as that is where the waves are strongest	**7**

Question	Answer	Marks
2(a)	**Study Fig. 3, which shows the global distribution of tropical rainforests.** **Describe the distribution of the tropical rainforests shown in Fig. 3.** Credit the following at one mark each SE Asia / named country Congo basin / west Africa / Central Africa / named country Amazon basin / Brazil / Central America / named country Between tropics (on tropics = 0) Along / near equator / 10 °N/S	**3**

Question	Answer	Marks
2(b)(i)	**Study Fig. 4, which shows the layers of vegetation that make up the tropical rainforest.** **Identify the layers of vegetation (1, 2 and 3) shown in Fig. 4.** Credit the following 1 = Emergents 2 = Canopy 3 = Understorey / undercanopy	**3**
2(b)(ii)	**Explain why rainforests have a high plant density.** Credit the following Ideal growing conditions Rapid nutrient re-cycling (Constant) high temperature (25 °C) / hot (Constant) high rainfall (1500 mm+) / wet Many <u>different</u> plant types can thrive	**3**
2(b)(iii)	**Describe and explain how the adaptations by plants to rainforest conditions allow them to grow so well.** Credit the following at one mark each (needs description and explanation) Branches at top of tree = 1… to receive more sunlight = 1 Evergreen forest = 1… growth occurs all year round = 1 Drip-tip leaves = 1… rainwater rapidly drained = 1 Leathery/waxy leaves = 1 prevents bacterial growth = 1 (forest structure / fruits / flowers = 0) Buttress roots = 1… more able to support large trees = 1 Shallow roots = 1… can use nutrients near soil surface = 1 Lianas / epiphytes = 1… climb towards sunlight = 1	**4**
2(c)(i)	**Describe how the rainforest can improve the lives of the local population.** Credit the following at one mark each Employment / income / earning Supplies fruit / food / hunting (greenhouse effect = 0) Medicines / cures Supplies timber Settlement / housing for forest tribes Maintains the quality / quantity of water / water supply Reduces soil erosion Enriches soil Prevents floods Attracts tourists	**5**

Question	Answer	Marks
2(c)(ii)	**Describe and explain the causes and effects of deforestation. Give examples to support your answer.** Examples = forests / areas / schemes Levels marking <u>Examples of simple statements</u> Basic statement supported with example could be L2 (once only). No repetition. Trees have been felled for their timber Forests have been cleared by burning Fewer trees can reduce rainfall Fewer trees means fewer animals <u>Examples of developed statements</u> Trees have been felled by companies to supply the international timber trade Ranchers have cleared large areas for a few years of cattle grazing before land becomes infertile and they move elsewhere Fewer trees means less transpiration, so less rainfall will occur	7

Theme B: People, food and settlement

Answer **one** question from this theme, **either** Question 3 **or** Question 4.

Question	Answer	Marks
3(a)(i)	**Study Figs. 5 and 6, which show the changes in the birth rate and death rate for Cote D'Ivoire and Canada from 2000 to 2012.** **Which of the countries shown is an MEDC? Give reasons for your answer.** Credit the following at one mark each Canada = 1 (reserve) MEDCs have low BR MEDCs have low natural increase	**3**
3(a)(ii)	**Compare the birth rates for Cote D'Ivoire and Canada.** Credit the following at one mark each (needs comparisons) Cote D'Ivoire BR is higher than Canada's Cote D'Ivoire has a falling BR, Canada's BR is constant / slightly rising Allow Cote D'Ivoire from 40 to 30 (per 1000), Canada from 11 to 12 (per 1000) … any comparative rates	**2**
3(a)(iii)	**Explain why the death rate in most countries is low or falling.** Credit the following at one mark each Improved health care / hospitals / medicines (max. 2) Immunisation Improved food supply / diet Improved sanitation / hygiene Clean water Better housing / shelters Awareness / education about… / life style	**5**
3(b)(i)	**Study Figs. 5 and 6 once again.** **State and explain the effect of the falling birth rate and death rate for Cote D'Ivoire on its natural increase.** Credit the following NI has (slight) fall / stayed the same (reserve 1) The gap between BR and DR stays high / over 20 per 1000 (The BR and DR fall)…. at almost same rate / BR falls slightly more than DR NI goes from 23 (per 1000) to 21 (per 1000)	**3**

Question	Answer	Marks
3(b)(ii)	**Explain the problems that a high population increase can cause in a country.** Credit the following at one mark each <u>Problems relating to future</u> (overpopulation = 0) (crime = 0) Food Water supply Education Poverty Housing / shanty towns Healthcare Employment Overcrowding / traffic congestion Future population growth Pressure on environment / deforestation / specified pollution	**5**
3(c)	**Describe the strategies that governments have used to influence a country's rate of population change. How successful have these strategies been? Give examples to support your answer.** Examples = government strategies / evaluation Levels marking <u>Examples of simple statements</u> Basic statement supported with example could be L2 (once only). No repetition. Family planning clinics set up Increased family financial benefit (allow reference to government migration policies) Free education for small families Couples encouraged to marry later <u>Examples of developed statements</u> China introduced its 'one child policy' National 'stop at two' policies promoted sterilisation Some countries now give a tax rebate for fourth child Countries publicise through TV and newspaper adverts the benefits of a small family	**7**

Question	Answer	Marks
4(a)(i)	**Study Photograph A (Insert), which shows a rice growing area in Indonesia.** **Describe the features shown on Photograph A which are typical of a rice growing area.** Credit the following at one mark each Large area / fields Low land Flat land / floodplain Embankments / bunds Plentiful water supply / irrigated land	**3**
4(a)(ii)	**Give evidence from the photograph which shows this area is farmed commercially.** Credit the following at one mark each Large field Monoculture Large amount planted Allows easy mechanisation Absence of labour / dwellings	**2**
4(a)(iii)	**Describe the climate and soil conditions required to grow lowland rice.** Credit the following at one mark each (fertile soils = 0) Reserve 1 for each of climate / soil Temperature over 20 °C / hot Rain over 1000 mm / wet Dry period (for harvest) Alluvium / clay soils Water retentive soil / wet soils / irrigation	**3**
4(b)(i)	**Study Fig. 7 and Fig. 8, which show changes in rice production, yield and area growing rice in India from 1980 to 2010.** **Describe the change in rice production from 1980 to 2010. Use information from Fig. 7 to support your answer.** Credit the following Increased = 1 By 45 million tonnes overall = 1 / from 54–99 million tonnes = 1	**2**
4(b)(ii)	**Use information from Fig. 8 to explain the change in production shown in Fig. 7.** Credit the following Little change in area /…1 to 3 mhs…/ 40 to 43 mhs Huge increase in yield = 1 /….1120 kg/h… 1140 to 2260 kg/h Yield a more important factor than area (or similar) = 1	**3**

Question	Answer	Marks
4(c)	**Explain why some countries find it difficult to produce enough food for their populations.** Credit the following at one mark each Continued population growth Need increased food production to maintain existing situation Little money for investment / need for finance Reduction of workforce … Little development of modern farming techniques, e.g. green revolution / fertiliser / irrigation, etc. Climate problems, e.g. shortage of rainfall Poor land / lack of land / infertile soil / etc. Poor health reduces energy levels Limited education Natural disasters, e.g. earthquakes / locusts / drought / floods (max. 2)	**5**
4(d)	**Describe the various strategies used by Brunei to increase agricultural production. How successful have these strategies been? Give examples to support your answer.** Examples = schemes / areas / evaluation Levels marking <u>Examples of simple statements</u> Basic statement supported with example could be L2 (once only). No repetition. Government encourages pupils to study agriculture Agriculture is a form of diversification Goat and deer farming is encouraged Department of Agriculture encourages new developments in farming <u>Examples of developed statements</u> Government has released land for livestock production so that imports are reduced New irrigation projects to be developed in Belait Belait is to be a training area for hybrid rice strains and management skills	**7**

Theme C: Industry, energy and tourism

Answer **one** question from this theme, **either** Question 5 **or** Question 6.

Question	Answer	Marks
5(a)(i)	**Study Fig. 9 (Insert), a map of the Hawaiian island of Kauai.** **State <u>three</u> physical attractions of Kauai for tourists.** Credit the following at one mark each (first 3 answers only) Caves / grottoes Beaches Waterfalls Mountains / mts. Canyons / rivers Bays / harbours	**3**
5(a)(ii)	**Suggest reasons why most settlements on Kauai are near the coast.** Credit the following at one mark each Near roads Lower / flatter land Near airports Near ports / harbours Near beaches Fishing / food	**3**
5(b)(i)	**Study Figs. 10A, 10B and 10C, selected tourist information for Hawaii.** **Explain the importance of cruise ships to the Hawaiian tourist industry.** Credit the following Not very important / unimportant = 1 Relatively few visitors / low total spend / low average daily spend = 1	**2**
5(b)(ii)	**Compare the importance of visitors to Hawaii from west USA and from Japan.** Credit the following at one mark each West USA more important for tourist numbers / 2050 / 2090 – 1200 (000s) West USA more important for total money spent / 4000m – 2090 / 2100m West USA less important for spending (per day) or obverse / 152 / 158–290	**3**

Question	Answer	Marks
5(b)(iii)	**Give the advantages of tourism to the people and areas visited by tourists.** Credit the following at one mark each Increased employment / selling goods Increased wealth / income to area / people / country Causes multiplier effect Cultural exchange / promotes culture Promotes development / buildings / roads / improves infrastructure Encourages care for environment / cleanliness appearance Tourist facilities available to locals	**5**
5(c)(i)	**Define *sustainable tourism*.** Credit the following at one mark each Tourism which does not harm the environment / culture / conservation It supports local economies and cultures / employment It will continue into the future, etc.	**2**
5(c)(ii)	**Describe and explain how tourism can be made sustainable. Give examples to support your answer.** Examples = areas / schemes Levels marking <u>Examples of simple statements</u> Basic statement supported with example could be L2 (once only). No repetition. Coral reefs are protected areas Local crop production is encouraged Encourage local recycling of water Encourage airlines to be fuel efficient Promote eco-tourism <u>Examples of developed statements</u> Governments to ban dumping of soil near coral reefs to help reduce further damage Prevent illegal logging of the rainforest so that eco-tourism and wildlife will survive The locals are positively encouraged to take part in eco-tourism as they know their resources and the community can gain directly	**7**

Question	Answer	Marks
6(a)(i)	**Study Fig. 11 (Insert), which shows sources of energy production for the world from 1985 to 2011.** **How many terawatt hours (TWh) of energy were produced by nuclear power in 1985?** Credit the following at one mark each 1/2000 terawatt hours = 1	**1**
6(a)(ii)	**Describe the changes to each of the four energy sources from 1985 to 2011.** Credit the following at one mark each Allow increase once unless descriptor added Fossil fuel had great increase / increased rapidly Fossil fuel had decrease about 2009 (only fossil fuel decreased) Hydro-electric had small increase / constant Nuclear had small increase / constant 'Others' were absent then present / from 2000±1	**4**
6(b)(i)	**Study Fig. 12, which shows the sources of energy production for Canada, France and India, 2012.** **Which country's energy production in Fig. 12 most resembles that shown for 2011 in Fig. 11? Give reasons for your answer.** Credit the following India = 1 (reserved) Mostly fossil fuel / over half HEP (2nd place) / nuclear well represented (3rd place) / about a quarter / some / or similar Small amount / little / least of other renewables (allow reasons why it cannot be Canada reference to HEP = 1, or France reference to nuclear = 1)	**4**
6(b)(ii)	**Which country generates most of its energy from nuclear power? Explain any disadvantages this may bring.** Credit the following at one mark each France = 1 (reserved) Radioactivity is dangerous / nuclear accidents / site contamination / leakage Problem of nuclear waste Waste takes many years to decontaminate / store High construction costs Uranium supplies are finite Danger re: earthquakes / tsunamis / terrorists	**4**

Question	Answer	Marks
6(b)(iii)	**Explain why a person concerned about the environment may be worried by the way India sources its energy production.** Credit the following at one mark each High consumption of fossil fuel (non-renewable = 0) Air pollution / harmful gases / smoke / haze Greenhouse gases / names greenhouse gases Global warming / climate change / ice melt Acid rain Effect of acid rain Open cast / mining damages visual environment	**5**
6(c)	**Describe and explain the problems of establishing a continuous supply of energy to homes and factories in LEDCs. Give examples to support your answer.** Examples = areas / schemes / countries Levels marking <u>Examples of simple statements</u> Basic statement supported with example could be L2 (once only). No repetition. Many LEDCs have insufficient energy for development LEDCs cannot afford large energy projects Poor infrastructure means that distributing electricity is difficult <u>Examples of developed statements</u> Regional conflict often results in poor infrastructure so it is difficult to distribute electricity Many rural areas have low electricity demand as people are too poor to afford electric power High oil prices mean that imports of oil are too expensive, e.g. Rwanda spent 40% of export earnings on oil in 2007 The importance of agriculture in many LEDCs, e.g. Tanzania depresses electricity demand	**7**