GEOGRAPHY **2230/01**

Paper 1 Themes May/June 2019

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.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2019 series for most Cambridge IGCSE™, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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	1 simple statement
		2	2 simple statements
		3	3 simple statements
L2	Developed statements	4	1 developed statement
		5	2 developed statements
		6	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 <u>one</u> question from this theme, <u>either</u> Question 1 <u>or</u> Question 2.

Question	Answer	Marks
1(a)(i)	**Study Fig. 1.1, a diagram of a plate boundary.** **Name the type of plate boundary and the features <u>A</u> and <u>B</u>.** Destructive / Convergent A = oceanic trench B = subduction zone	3
1(a)(ii)	**Describe and explain the movement of the oceanic and continental plates.** Reserve 1 for description / explanation Describe: Towards each other / collide Oceanic sinks below continental Explain: Due to convection currents in mantle Driven by convective forces Plates follow direction of currents Oceanic plate is heavier / denser so sinks	4
1(a)(iii)	**Explain the formation of the volcano shown in Fig. 1.1.** Descending plate melts Due to increased heat (from mantle) And friction Becomes magma Increase in pressure Magma moves towards surface Along cracks / fissure Erupts at surface Solidifies to form cone	6
1(b)	**Draw a labelled diagram of a strato (composite) volcano.** Diagram required: general shape = 1 (reserve) Credit labels (1 mark each) such as: Steep sides, crater, reference to base, alternate layers, ash and lava, pipe, vent, secondary cone, magma chamber, volcanic bombs, etc.	5

Question	Answer	Marks
1(c)	**Explain why the number of people killed or injured by a volcanic eruption usually remains low. Give examples to support your answer.** Levels marking Examples of simple statements Area is evacuated before eruption begins Lava often flows slowly Volcano often gives warning of eruption Practice drills take place Examples of developed statements Evacuation drills will have been practised so that people are removed from area where lava is likely to flow Lava often flows slowly so that people have time to avoid it, leaving buildings to be destroyed Many measurements are taken of temperature and gases which can forecast an eruption Acid lava cones are often located in places of low population density	7

Question	Answer	Marks
2(a)	**Name and describe <u>two</u> processes of river erosion which provide material to form a floodplain.** Reserve 2 marks for name and description Corrasion / abrasion Load of river wearing away bed / banks Hydraulic action Force of current removing material Attrition Load becoming smaller / smoother	4
2(b)(i)	**Study Fig. 2.1, a diagram of part of a floodplain.** **Name feature <u>X</u>.** Levee(s)	1
2(b)(ii)	**Explain the formation of feature <u>X</u> and the position of the fine material.** River deposits on river bed River overflows Material deposited on river bank Loss of energy Happens frequently Material builds up Lighter material more easily transported Coarse material deposited closer to river channel Carried further from channel (reserve 1 for lighter material)	5

Question	Answer	Marks
2(c)	**Suggest <u>one</u> benefit and <u>one</u> problem of farming on a floodplain.** Benefits (reserve 1): Water supplied to crops / animals River silt / alluvium / fertile soil, etc. Problems: Flooding can destroy crops / animals, etc.	**2**
2(d)	**Oxbow lakes may form as temporary features on floodplains. Use annotated diagrams to explain the formation of an oxbow lake.** Recognisable diagram of meander (Reserve) Meander develops Erosion on outside bend Deposition on inside bend Meander develops further / neck narrows Break through occurs During heavy flow / floods Meander isolated Continued deposition (located) Eventually infills from later deposition	**6**
2(e)	**Describe the attempts made by people to reduce the likelihood of rivers flooding. How successful have these attempts been?** **Give examples to support your answer.** Levels marking <u>Examples of simple statements</u> More trees are planted near rivers Dams built Rivers straightened Levees reinforced <u>Examples of developed statements</u> More trees planted on the valley side so less water able to enter river Dams built so that large reservoirs are created which hold a large body of water Rivers are straightened and meanders removed which will reduce the chance of river overflow Levees reinforced which may bring short term gains	**7**

Theme B: People, food and settlement

Answer <u>one</u> question from this theme, <u>either</u> Question 3 <u>or</u> Question 4.

Question	Answer	Marks
3(a)	**Study Fig. 3.1, which shows the location of some of the world's leading rice-growing countries.** **Describe the location of the world's leading rice-growing countries shown in Fig. 3.1.** Near / on equator / between tropics / north of Tropic of Capricorn Near / on Tropic of Cancer Extending north of Tropic of Cancer Asia Name of any rice-growing country – Brazil / India / China	3
3(b)(i)	**Study Fig. 3.2, which shows rice production for China, India and Indonesia, 1980–2016.** **State the amount of rice produced in Indonesia in 2000.** 33 million tonnes	1
3(b)(ii)	**Compare the changes in rice production for China and India from 1980 to 2016.** Both increased overall China from 96 m–144 m (48 m) and India 56 m–107 m (51 m) 1980 to 1990 China increased more than India 1990 to 2000 China decreased, India increased 2000 to 2016 China increased less than India	3
3(c)	**Describe the physical conditions needed to grow rice.** Flat land Impermeable soil / alluvial soil High rainfall totals / 1000+ mm High temperature / 20 °C+ Nearby water source / Near river	4
3(d)(i)	**Study Fig. 3.3 (Insert), a photograph which shows an activity on a rice farm.** **Explain how Fig. 3.3 shows an example of commercial farming.** Mechanisation / complex planting method Allows efficient operation Roads indicate vehicle access Few workers Large area	3

Question	Answer	Marks
3(d)(ii)	**Describe ways of increasing the productivity of a rice farm which are <u>not</u> shown in Fig. 3.3.** Improved fertiliser Better irrigation HYVs Education and training Pesticide / insecticide Etc.	**4**
3(e)	**Describe and explain the differences in food consumption between LEDCs and MEDCs. Give examples to support your answer.** Levels marking <u>Examples of simple statements</u> LEDCs have smaller food range Food comes from local area Often mostly comprised of cereals Only essential foods produced Obesity in MEDCs <u>Examples of developed statements</u> Foods grown in local area as unable to bring in distant produce due to poor transport LEDCs unable to afford the varied food available on the world market Efforts go into ensuring a good supply of basic foods so less chance of starvation LEDCs will export exotic produces to MEDCs (for income) which may reduce the choice of food in LEDCs MEDCs – overeating of food may result in obesity and the health implications that accompany this	**7**

Question	Answer	Marks
4(a)	**State how the natural increase of population is calculated.** Birth rate – death rate	**1**
4(b)(i)A	**Study Fig. 4.1, a graph showing the world's population from 1750 to 2015.** **Give the change in world population: between 1850 and 1950** 1.4 billion	**1**
4(b)(i)B	**Give the change in world population: between 1950 and 2015.** 4.8 billion	**1**

Question	Answer	Marks
4(b)(ii)	**State how the birth rate and death rate account for the change in population between 1950 and 2015.** BR stayed high DR became low	**2**
4(c)(i)	**Study Fig. 4.2, a graph showing world population growth rate from 1950 to 2015.** **Describe the changes in the world population growth rate between 1950 and 2015.** Overall decrease From 1.43 to 1.06 / 0.4 decrease (+ / –) Increased (rapidly) 1950–1957 Fell (rapidly) by 1960 Increased (rapidly) again 1963 Highest 1963 Fluctuates 1963–1992 Steady fall 1992–2015	**4**
4(c)(ii)	**Suggest <u>one</u> reason for the change in the growth rate around 1960.** (Rapid) increase in DR / reason for increase in DR	**1**
4(d)	**Explain why, in many countries, birth rates are falling.** <u>Allow development marks</u> Increased availability of contraception Abortion Increased female education Females take up careers Later marriage Reduced need for child labour Compulsory education for children Cost of rearing children Low IMR Population policies Etc.	**6**
4(e)(i)	**Define *overpopulation*.** Too many people Too few resources	**2**

Question	Answer	Marks
4(e)(ii)	**Describe and explain the consequences of overpopulation. Give examples to support your answer.** Levels marking <u>Examples of simple statements</u> Increased unemployment Reduced food supply Insufficient proper housing Poor health care Low personal income <u>Examples of developed statements</u> People cannot afford proper housing so may live in squatter settlements Too many people often means insufficient jobs for them and low wages Large numbers may depend upon farming for food; with too many people, any food reduction could lead to malnutrition An overpopulated country would struggle to offer its people good health care as it cannot afford good quality health services and immunisation programmes	**7**

Theme C: Industry, energy and tourism

Answer <u>one</u> question from this theme, <u>either</u> Question 5 <u>or</u> Question 6.

Question	Answer	Marks
5(a)(i)	**Study Fig. 5.1, which shows international tourist arrivals worldwide from 1995 to 2030.** **Calculate the overall increase in the number of international tourist arrivals from 1995 to 2030.** 1272 million (1290–1260 million)	1
5(a)(ii)	**Suggest reasons for the overall increase in international tourist arrivals.** Increased income Increased leisure time Early retirement / higher number of retired people Greater variety of holidays offered Aeroplanes travel faster / further Holiday cost reduced Specialist holidays Increased advertising Increased awareness of different cultures Ease of booking on internet More amenities / facilities have been developed for tourists Etc.	5
5(a)(iii)	**For Asia and for the Americas, compare the changes in international tourist arrivals between 1995 and 2030.** 1995 Americas more than Asia, 2030 Asia more than Americas 2010 Asia passes Americas total Asia increases at faster rate than Americas 1995–2030 Asia 85 m–530 m (6 times) and Americas 100 m–240 m (2.5 times) Etc.	3
5(b)	**Define *sustainable tourism*.** Without causing any environmental damage Minimise the social impact on communities Create a positive impact Ensures long term and can be continued	2

Question	Answer	Marks
5(c)(i)	**Study Fig. 5.2 (Insert), a photograph which shows part of a tropical rainforest recently opened to tourists.** **Describe the features shown in Fig. 5.2.** Trees / forest Shrubs / plants Lianas Waterfall River / pond / plunge pool Steep land Boulders / rocks Overhang / cave Thin trunks / buttress roots Path / walkway	3
5(c)(ii)	**Describe the problems that a large number of tourists may bring to places such as those shown in Fig. 5.2.** Damage to vegetation / trampling Footpath erosion Littering Animals disturbed / forced to move Removing plants / picking flowers Harm to local tribes / lifestyle Water pollution Etc.	4
5(d)	**Describe the methods used to control the impact on the environment that a large number of tourists may cause. Give examples to support your answer.** Levels marking <u>Examples of simple statements</u> Forest parks have been developed Local communities involved in tourism Tourist numbers limited <u>Examples of developed statements</u> Forest parks have been set up which tourists may access on special pathways Local communities are involved as tourist guides to avoid culture clash between different groups Tourist numbers are carefully monitored so that features are not overexploited and damaged	7

Question	Answer	Marks
6(a)	**Apart from hydroelectric power (HEP), name <u>two</u> other renewable power sources.** Solar / wind / bio-mass / geothermal / tidal (any two)	**2**
6(b)(i)	**Study Fig. 6.1, which shows the percentage of total power generated by HEP for four countries from 2000 to 2014.** **Name the country which increased its percentage of total power generated by HEP between 2000 and 2014.** China	**1**
6(b)(ii)	**By how much did Sweden's percentage of total power generated by HEP change between 2000 and 2014?** 14(%)	**1**
6(b)(iii)	**For Brazil and India, compare the changes in percentage of total power generated by HEP between 2000 and 2014. Use information from Fig. 6.1 to support your answer.** Both decline overall Brazil declines more than India 2000–2005 Brazil declines, India increases 2005–2010 Both declining 2010–2014 Brazil declines more rapidly than India Brazil falls 18% from 88% to 70%, India 2% from 14% to 12% overall (reserve 1 for data)	**4**
6(c)	**Study Fig. 6.2, which shows a diagram of a hydroelectric power (HEP) station.** **Use the diagram to explain how electricity is produced and distributed to consumers.** Water held in reservoir Water flows down pipe (penstock) Rotates / turns / goes through the turbine Operates generator / produces electricity Electricity distributed by power lines	**4**

Question	Answer	Marks
6(d)	**Describe the physical and economic conditions needed for the development of an HEP station in an area.** Allow development marks Large finance required / investment (reserve 1) Low population density Heavy rainfall / snow melt River flow Valley (needs to be dammed) Impervious rock Hard rock for dam Narrow opening to valley an advantage Allow limited evaporation Large area Etc.	**6**
6(e)	**Many countries generate their electricity from non-renewable sources. Explain the environmental problems this may cause. Give examples to support your answer.** Levels marking Examples of simple statements Non-renewable fuels cause air pollution These fuels give off fumes which cause acid rain Coal and oil burning can lead to the enhanced greenhouse effect Non-renewable fuels can cause climate change Examples of developed statements Non-renewable fuels can emit tiny particles that cause air pollution and worsen asthma and lung problems These fuels emit sulphur dioxide which reacts with water droplets to give acid rain Coal and oil emissions can increase the amount of CO2 in the atmosphere which will trap heat energy and increase the earth's temperature Temperature increase can cause climate change, global warming and melting of the ice sheets which result in widespread coastal flooding.	**7**