Mark Scheme (Results)

November 2020

Pearson Edexcel GCSE
In Geography B (1GB0)
Paper 03 People and Environment Issues
– Making Geographical Decisions

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1(a)(i)	Award 1 mark for any of the following up to a maximum of 2 marks. For example: • Covers most of Russia / Russia's largest biome (1) • Large east-west range (1) • Large north-south range (1) • Lies between tundra and temerate forest (1) • Not found at northern and some southern margins (1) **Accept any other appropriate response.**	**1 + 1** **(2)**

Question Number	Answer	Mark
1(a)(ii)	Award 1 mark for any of the following: • The organisms/plant/animals that are linked/connected together/joined in a system (1) • The interacting biotic/living and abiotic/non-living things found in a place/region (1) **Accept any other appropriate response**.	**(1)**

Question Number	Answer	Mark
1(b)	B 4,500-500 *Rationale - only possible correct answer for the max and min values shown (4,500 and 500)*	**(1)**

Question Number	Answer	Mark
1(c)	Award 1 mark for any of the following ways, up to 2 marks: • (daily/diurnal/average/annual) temperature (1) • (annual) rainfall/precipitation/rain & snow (1) • (thermal) growing season / sunlight (1) **Accept any other appropriate climatic factor**.	**1 + 1** **(2)**

Question Number	Answer	Mark
1(d)	Award 1 mark for a link and 1 mark for further explanation of interaction, up to a maximum of 2 marks: • Soils depend on plants for nutrients (1), delivered by decomposition/death of litter/roots/dead plants (1) • Plants biologically weather the bedrock (1) creating the fragments/particles which make up soil (1) **Accept any other appropriate response**.	**(2)**

Question Number	Answer	Mark
2(a)(i)	(Tropical) rainforest / tropical forest	**(1)**

Question Number	Answer	Mark
2(a)(ii)	Award 1 mark for a basic argument based on Figure, and 1 mark for further explanation, up to a maximum of 2 marks: • Trees protect the frozen soil below from thawing (1), which stops methane (a GHG) from escaping (1) • Helps protect biodiversity (1) due to large number of habitats found in some of these forests (1) **Accept any other appropriate response clearly related to forests or information shown in Figure.**	**(2)**

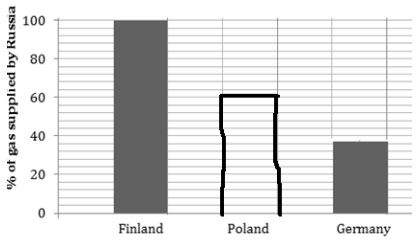
Question Number	Answer	Mark
2(b)	Award 1 mark for a basic reason and one mark for expansion, up to a maximum of 4 marks. • Large areas of forest in Figure 3 have oil fields under them (1) meaning forest must be cleared for access (1) • Polluted water/air (1) resulting in biodiversity loss (1) • Forest near oil and gas transport corridors (1) could be worst affected by pollution and other threats (1) • Shale gas below forest could be developed (1) and extraction may pollute water sources for trees (1) **Accept any other appropriate response.**	**2 + 2** **(4)**

Question Number	Answer	Mark
3(a)(i)	11750 (allow 11600-11900)	**(1)**

Question Number	Answer	Mark
3(a)(ii)	D 2014-2015 *Rationale - only two of the choices shown are a fall, and this is the only one where the value falls to around half of what it was the previous year.*	**(1)**

Question Number	Answer	Mark
3(a)(iii)	Global financial crisis / economic crisis	**(1)**

Question Number	Answer	Mark
3(a)(iv)	Invasion of Iraq / conflict / war	**(1)**

Question Number	Answer	Mark
3(b)(i)	Award 1 mark for a bar shape corresponding with 60. Shading not required. Top of shape must align with 60.  	**(1)**

Question Number	Answer	Mark
3(b)(ii)	Award 1 mark for a basic argument and 1 mark for further explanation, up to a maximum of 2 marks: • Russia's behaviour could affect relations with these countries / their allies (1), who respond by buying less Russian oil and gas (1) • Other countries retaliate with sanctions (1) so less gas is sold (1) **Accept any other appropriate response**.	**(2)**

Question Number	Answer	Mark
3(b)(iii)	Award 1 mark for a basic argument and 1 mark for further explanation, up to a maximum of 2 marks: • Sales rise if Russian oil is exported to China (1) which has huge energy needs / is emerging economy (1) • Existing customers may buy stop buying from Russia (1) to avoid competing with China (1) • Sales may rise to neighbouring countries (1) that are also close to China and the pipeline (1) **Accept any other appropriate response**.	**(2)**

Question Number	Answer	Mark
3(c)	In each case, award 1 mark for a basic explanation and one mark for expansion, up to a maximum of 4 marks. • Tropical rainforest in some countries could make access difficult (1) e.g. it could be costly to strip the forest (1) • Sparsely populated desert areas may lack infrastructure (1) making accessibility more costly for energy TNCs (1) • Grassland areas could be easier to access compared with forest (1) making energy development costs lower (1) • Heat/aridity might limit hours for workers (1) and so could drive up labour costs (1) **Accept any other appropriate response.**	**2 + 2** **(4)**

Question Number	
3 (d)	**AO3 (4 marks)/AO4 (4 marks)** Answers should focus on the challenges faced by Russian companies and may make an assessment of their varying severity or importance. **A03** • Technical difficulties must be overcome for shale gas to be developed • Arctic Ocean has unexploited oil and gas fields but they are hard to access • Russia's companies are badly affected by the country's poor economy • Energy companies do not have a sustainable future unless new energy sources can be exploited • Untapped resources exist but will be hard to exploit without assistance from US and EU energy companies • One view might be that sanctions are the most important challenge because they prevent Russian TNCs from working with the experts they need **A04** • Three big foreign energy companies were ready to work with Russian companies before the sanctions (Figure 9) • Since 2014, EU and US companies have been told not to give assistance to Russia (Figure 9) • Russia has vast shale gas reserves, e.g. Bazhenov, but has yet to fully access them due to physical and technical challenges (Figure 9) • Superior shale gas technologies have been developed in the USA and Russia needs access to this technology (Figure 9) • US TNCs were set to assist with Arctic Ocean exploration but now cannot due to sanctions (Figure 9) • Conventional sources may begin to run out by 2030 (Figure 9)

Level	Mark	Descriptor
	0	No acceptable response
Level 1	1–3	Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) Uses some geographical skills to obtain information with limited relevance and
Level 2	4–6	Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Uses geographical skills to obtain accurate information that supports some

Question Number	Answer	Mark
3(e)(i)	Award 1 mark for a basic statement and one mark for further explanation, up to a maximum of 2 marks. • Sources such as wind/solar/water (1) because they are inexhaustible/continuous/infinite/won't run out (1) **Accept any other appropriate response.**	**(2)**

Level 3	7–8	Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) Uses geographical skills to obtain accurate information that supports all aspects

Question Number	Answer	Mark
3(e)(ii)	Award 1 mark for a basic statement and one mark for further explanation, up to a maximum of 2 marks. • Sources such as plant remains used to grow more biofuels (1) because the outputs/waste can be used again (1) **Accept any other appropriate response.**	**(2)**

Question Number	
3 (f)	**AO3 (4 marks)/AO4 (4 marks)** Answers should weigh up factors influencing the potential for wind energy and/or how far this potential has been developed in different countries/places. **A03** • May all come down to economics - one view may be that the most important reason is how costly wind power is compared with other options • Another view is that physical geography matters most - because you need large land area where strong winds blow • Similar, a long coastline influences the development of offshore wind • Some countries now need to develop wind power because their governments have made carbon reduction targets a priority/ number one influence • The amount/proportion of unoccupied / uninhabitable areas is determined by the key influence of climate which in turn affects vegetation and water supply • Use is not always made of potential wind resources because there are cheaper/easier alternatives - most important factor in some cases e.g. Russia AO**4** • The USA and China have been able to develop wind energy thanks in part to their large land area (Figure 10) • Population size and distribution are linked with climate and biome distributions (deserts/tundra may be unoccupied) (Figure 10) • A country's wealth and income (GDP per capita) affect the adoption of costly wind turbines and infrastructure (Figure 10) • In Russia's case, the abundance of fossil fuels has lessened the need to develop wind power (Figure 10) • The length of coastline and depth of coastal water influence the development of offshore wind farms (Figure 10) • Government carbon footprint reduction targets e.g. Germany (Figure 10)

Level	Mark	Descriptor
	0	No acceptable response
Level 1	1−3	Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4−6	Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Uses geographical skills to obtain accurate information that supports some
Level 3	7−8	Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) Uses geographical skills to obtain accurate information that supports all aspects of

Q	Indicative content
4	**AO2 (4 marks)/AO3 (4 marks)/AO4 (4 marks)** In order to fully justify a choice, the candidate must consider all three options and establish a clear argument. There is no preferred option. All options can be justified in terms of long-term benefits for/protection of Russian economy. The balance of the case will vary according to the option chosen. • Option 1 - a progessive action that makes use of Russia's geography. In the long term, all fossil fuel will run out so this is also the best very-long-term option. Crucially, the economic benefits may be great if future technology allows for exports of surplus wind energy. • Option 2 - the large amounts of shale gas which Russia possesses can be an important bridge fuel when conventional sources run out. But it requires improved relations with the EU/US in order to share technology, so there are obstacles along this economic path. • Option 3 - helps Russia adapt to the exhaustion of its own conventional resources without having to make any great changes or compromises which could be difficult given current economic and political conditions. **A02** • Economic benefits include domestic sales of energy but also export sales • Wind power is still relatively expensive and there are technical issues to overcome • Shale gas can cause water pollution and other costly local damage • Climate change may make some oil and gas fields (Arctic) easier/cheaper to work • Protection of the taiga from energy exploitation creates economic opportunities / multipliers for forestry, tourism. etc. • Conflicts in North Africa and the Middle East can threaten overseas oil operations **A03** • Wind power could meet the Russian economy's own energy needs while protecting environment (bringing other economic benefits e.g. forestry, eco-tourism) • Wind energy means less GHG emissions - which benefits Russia economically in the long run (climate change adaptation costs reduced e.g. fewer wildfires) • However, Russia is economically dependent on gas and oil sales and it is unclear what would happen if this trade ceases in a wind energy scenario • Unclear whether Russia's customer countries would be able to import alternate forms of energy the way they currently do gas - affects income from trade. • For shale gas to be exploited, Russia must cooperate with US and EU, which could be economically beneficial (might help investment, tourism, other trade etc.) • Cooperating with other countries to develop their fossil fuel resources builds closer links between governments which could be economically beneficial. **A04** • Russia's dense northern forests and cold climate could mean the gas under them becomes costly to exploit in the long-term (Fig 1, 2 and 3). • Russia's economy has volatile 'boom and bust' periods tied to oil prices; use of wind energy could result in more stable long-term economic growth (Figure 4) • Political issues (Figure 6) have led to trade barriers with EU/US (Figure 8) and we don't know when, in the long-term, foreign TNCs will be allowed to help Gazprom access unconventional oil and gas • Gazprom is successfully buying the rights to conventional oil in other countries, and this appears to work as a strategy (Figure 7).

	• Russia has enormous untapped wind potential (Figure 10) though this energy may not be as easy to export and sell as oil and gas are (introduction). • Due to international relations, Russia may in any case not regain export trade (Figure 5). Then again, China might buy any surpluses (Figure 7)

Level	Mark	Descriptor
	0	• No acceptable response
Level 1	1–4	• Demonstrates isolated elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (A04)
Level 2	5–8	• Demonstrates elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • Applies understanding to deconstruct information and provide some logical connections between concepts. An unbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	9–12	• Demonstrates accurate understanding of concepts and the interrelationship between places, environments and processes. (AO2) • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Marks for SPGST		
Performance	**Marks**	**Descriptor**
SPaG 0	0	*No marks awarded* • Learners write nothing. • Learner's response does not relate to the question. • Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning.
SPaG 1	1	*Threshold performance:* • Learners spell and punctuate with reasonable accuracy. • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. • Learners use a limited range of specialist terms as appropriate.
SPaG 2	2–3	*Intermediate performance* • Learners spell and punctuate with considerable accuracy. • Learners use rules of grammar with general control of meaning overall. • Learners use a good range of specialist terms as appropriate.
SPaG 3	4	*High performance* • Learners spell and punctuate with consistent accuracy. • Learners use rules of grammar with effective control of meaning overall. • Learners use a wide range of specialist terms as appropriate.

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