

Question	Answers	Extra information	Mark
1(a)	From top to bottom: crust mantle outer core inner core		1 1 1 1
(b)	the atmosphere contains mainly nitrogen		1
2(a)	increased/gone up 0.6		1 1
(b)	Any <b>one</b> from: <ul style="list-style-type: none"> <li>• melting ice caps</li> <li>• melting glaciers</li> <li>• sea level rises</li> <li>• droughts</li> </ul>	Accept any other consequence of global warming	1
3(a)	soft/easy to scratch/porous/weak forces between the grains	Accept any other appropriate properties	1
(b)	limestone/sandstone/shale	Accept any other named sedimentary rock	1
(c)	weathering transport deposition compaction	2 marks for two in correct position 1 mark for one in correct position	3
4(a)	photosynthesis		1

Question	Answers	Extra information	Mark
(b)	<ul style="list-style-type: none"> <li>Any <b>two</b> from:</li> <li>atmosphere</li> <li>oceans</li> <li>sedimentary rocks</li> <li>plants/animals</li> <li>soil</li> </ul>		2
(c)i	coal/oil/natural gas	Accept named fossil fuel	1
(c)ii	combustion		1
5(a)	A – igneous B – metamorphic C – sedimentary		1 1 1
(b)	D – transport E – compaction/cementation		1 1
(c)	presence of sea animal fossils high in mountains		1
6(a)	oxygen		1
(b)	28	Accept 72 or (46 + 8 + 6 + 4 + 8) for 1 mark Accept 100 – 72 for 2 marks	2
(c)	mantle		1
(d)i	liquid state	Accept liquid	1
(d)ii	solid state	Accept solid	1
7(a)	Earth warms up and emits thermal radiation – 2 some thermal radiation is trapped by gases in the atmosphere – 4 some thermal radiation is transferred into space – 3 energy transferred from the Sun warms Earth's surface – 1	2 marks for two correctly matched 1 mark for one correctly matched	3
(b)i	carbon dioxide/methane		1

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(b)ii	burning fossil fuels/cattle farming	Allow other appropriate source, linked to the greenhouse gas selected in bi	1
(c)i	an increase in atmospheric temperature at/near to the surface of Earth		1 1
(c)ii	Any <b>two</b> from: <ul style="list-style-type: none"> <li>• extreme weather patterns</li> <li>• drought/flooding</li> <li>• melting polar ice caps/glaciers</li> <li>• rising sea levels</li> <li>• more frequent wildfires</li> <li>• changes to animal/plant habitats</li> </ul>	Accept other appropriate effects	2
(c)iii	agreements from (named) climate change conferences/agreements on limiting CO <sub>2</sub> emissions/reduction in fossil fuel use/reduction in deforestation/reforestation/encouraging people to be more energy efficient/more use of renewable energy resources	Accept other reasonable suggestions linked to national-level initiatives	1
8(a)	igneous rock – F sedimentary rock – A/B/C/D metamorphic rock – E rock that may contain fossils – A/B/C/D		1 1 1 1
(b)	D it is the lowest layer, so formed before A, B, and C F has risen up through the layers, so this came later than D/any of the sedimentary rocks E formed due to the heat (and pressure) from the igneous rocks contacting the sedimentary rocks		1 1 1 1
(c)	soft/made of grains		1
(d)i	the action of heat and pressure on mudstone cause changes to the mudstone/cause new crystals to form		1 1

Question	Answers	Extra information	Mark
(d)ii	waterproof/non-porous does not let water through OR easily split into layers so weight is not too large		1 1
	<b>SPACED LEARNING QUESTIONS</b>		
9	coloured ink in a felt-tip pen – chromatography pure water from sea water – distillation sand from sandy water – filtration	1 mark for one correctly matched	2