


Problem Solving answer guidance WJEC B GCSE Geography – Foundation Tier

Question	Mark scheme	Comments
Part A ai	One mark for each correctly identified response.	Don't be tempted to circle more than one response from each set of three. Alberta / Fort McMurray / 400.
a ii	One mark for each correctly identified sector.	Hospital working - tertiary Refining oil - secondary Selling oil - tertiary.
bi	One mark for each correct completion.	When calculating the amount of oil from oil sands in 2008, make sure that you only measure the depth of the dark orange shaded area of the graph for that year. grown or risen / 1.5 / increase.
b ii	One mark for a correctly identified public service and one for the explanation as to how it may affect quality of life.	Examples include: Health service/doctors/hospitals (1) reduce negative effects of illness disease/allow people to live healthier lives (1); Education/schools/teachers (1) open access to better/better paid jobs (1)
ci	One mark for each correctly labelled area of the photo.	Ensure that each arrowhead clearly points into the exact area of the photo you wish to show. For example:

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<p>cii</p>	<p>For each of two ways in which damage may affect local quality of life, one mark for identifying it and another for its explanation.</p>	<p>Examples include: Air pollution may reduce people’s ability to take part in sport/work (1) because it creates breathing difficulties (1); Water pollution results in water-borne illnesses (1) because drinking water is contaminated (1); Land degradation reduces outdoor leisure activities (1) because it destroys unspoilt natural environments (1).</p>
<p>Part B ai</p>	<p>One mark for the completion of a bar of the correct height and the other for its correct shading.</p>	<p>Make sure that you use a ruler and accurately complete the bar.</p>

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		<table border="1"> <caption>Oil Production Data (2007-2012)</caption> <thead> <tr> <th>Year</th> <th>Production (Thousand Canadian dollars)</th> </tr> </thead> <tbody> <tr> <td>2007</td> <td>600</td> </tr> <tr> <td>2008</td> <td>680</td> </tr> <tr> <td>2009</td> <td>640</td> </tr> <tr> <td>2010</td> <td>680</td> </tr> <tr> <td>2011</td> <td>730</td> </tr> <tr> <td>2012</td> <td>750</td> </tr> </tbody> </table>	Year	Production (Thousand Canadian dollars)	2007	600	2008	680	2009	640	2010	680	2011	730	2012	750
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a ii	Accept either two simple ways or one way that is elaborated.	Two simple responses with their elaborations: An increase in oil production will attract more workers to the area (1) resulting in greater demand for houses (1); Increased oil production will bring greater wealth to the area (1) encouraging more people to buy rather than rent houses (1).														
a iii	One mark for naming the group and the other for its explanation.	Groups may include: Older people looking to downsize (1) releases money to spend in their retirement (1); Home owners who wish to leave the area (1) may be able to buy a similar house more cheaply elsewhere (1).														
a iv	One mark for naming the group and the other for its explanation.	Young locals living with parents (1) won't be able to afford to buy a house (1); Locals not working in oil industry (1) will find increases put a new house/house upgrade beyond their means (1).														

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<p>bi</p>	<p>One mark for the way and the second for the explanation of how it affects quality of life.</p>	<p>Examples include: Makes previously safe areas unsafe to travel to (1) reduces people’s freedom of movement (1); Unsure as to whether the home is safe from intrusion (1) so creates a feeling of insecurity (1).</p>
<p>bii</p>	<p>For the chosen advantage and disadvantage, one mark for identifying it and another for its explanation.</p>	<p>These advantages and disadvantages must be taken from the news article in the Resource Folder. Examples include: <u>Disadvantages:</u> Homelessness (1) creates a nuisance on the streets/potentially increases crime in the area (1); Shift working (1) means that families don’t eat together regularly (1). <u>Advantages:</u> Frequent theatre/arts events (1) give a variety of entertainment opportunities for locals (1); Greater sporting opportunities (1) helps create a healthy population (1).</p>
<p>ci</p>	<p>One mark for an accurately drawn line and the other for labelling the two sectors.</p>	

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		<p style="text-align: center;">Alberta's greenhouse gas emissions: 2010. In 2010 oil sands operations accounted for approximately 6.8% of total greenhouse gas emissions in Canada</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Alberta's greenhouse gas emissions: 2010</caption> <thead> <tr> <th>Sector</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Oil Sands Operations</td> <td>6.8%</td> </tr> <tr> <td>Conventional Oil and Gas Extraction</td> <td>25%</td> </tr> <tr> <td>Chemical Manufacturing</td> <td>-</td> </tr> <tr> <td>Fertiliser Manufacturing</td> <td>-</td> </tr> <tr> <td>Petroleum and Coal Products</td> <td>25%</td> </tr> <tr> <td>Pipeline Transportation</td> <td>4%</td> </tr> <tr> <td>Other industries</td> <td>4%</td> </tr> <tr> <td>Electricity Generation</td> <td>37%</td> </tr> </tbody> </table> <p style="text-align: center;">Key red labelling = non energy and power industries</p>	Sector	Percentage	Oil Sands Operations	6.8%	Conventional Oil and Gas Extraction	25%	Chemical Manufacturing	-	Fertiliser Manufacturing	-	Petroleum and Coal Products	25%	Pipeline Transportation	4%	Other industries	4%	Electricity Generation	37%
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cii	Credit a figure between 8 - 10%.	Although there is some leeway in the mark scheme you will still need to measure the sectors.																		
ciii	One mark for identifying the chosen feature and another for its effect.	<p>Examples include:</p> <p>An increase in temperature (1) leads to more species found in an area like Siberia (increased biodiversity) (1);</p> <p>Less chance of onset of a new Ice Age (1) because of overall global warming (1).</p>																		
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	its effect.	Rising sea levels (1) drown coastal ecosystems (1); Melting ice caps (1) endanger species like polar bears (1); Reduction of precipitation on desert edges (1) encourages spread of deserts (1)
di	170.2 billion barrels.	You must include 'billion barrels' in your answer.
dii	The marks are awarded for each of two simple statements or a simple statement and its elaboration.	Although not asked for, the best responses will include direct and specific evidence from the graph. Examples: Alberta has the third largest reserves in the world (1) so demand is likely to continue both for use in Canada and abroad (1). Alberta has over 170 billion barrels of reserves (1) so plenty to meet future demands (1).
diii	Reward is given for the quality of answers as opposed to merely crediting the number of valid responses made. Marked using a 'levels of response' mark scheme. Work upwards through the levels from Level 1. Marks Level 1: gives simple description 1-2 Level 2: gives simple explanation lacking in detail 3-4 Level 3: gives detailed explanation 5	In order to get to the highest level you will need to include some detail. Example: The creation of more wealth and jobs for people working in the industry then fuels increased spending in shops and other services. These will expand, employing more people. Increased payment of local taxes will allow more money to be spent on public services and on improving the local environment.
C	Reward is given for the quality of answers as opposed to merely crediting the number of valid responses made. There is no correct choice and a well explained 'no' response will score as highly as an equally well explained 'yes' response. The letter is marked first and the matrix is only marked if the mark is lower than 8. Work upwards from the lowest to the highest levels.	Tips for creating a top quality response to this question are given on pages 111-112 of 'My Revision Notes', as is a copy of the mark scheme for 'spelling, punctuation and grammar' on page 120.

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Level 1: (1-3 marks) There is little specific detail about the area. There is no elaboration beyond that provided directly by the sources. *Communication is basic: there is little or no structure and/or ideas are communicated in brief statements/bullet points.*

Level 2: (4-7 marks) There is some specific detail about the area and options. There is elaboration of ideas beyond that provided by the sources. *Information is communicated by brief statements. There is a basic structure. There is some accuracy of spelling, punctuation and grammar.*

Level 3: (8-11 marks) The letter considers the options in detail. Different opinions are considered, along with the effects of each and a clearly explained decision is made. *Communication is clear and logical. Spelling, punctuation and grammar have considerable accuracy.*