



Geology 12
Resource Exam B
Response Booklet

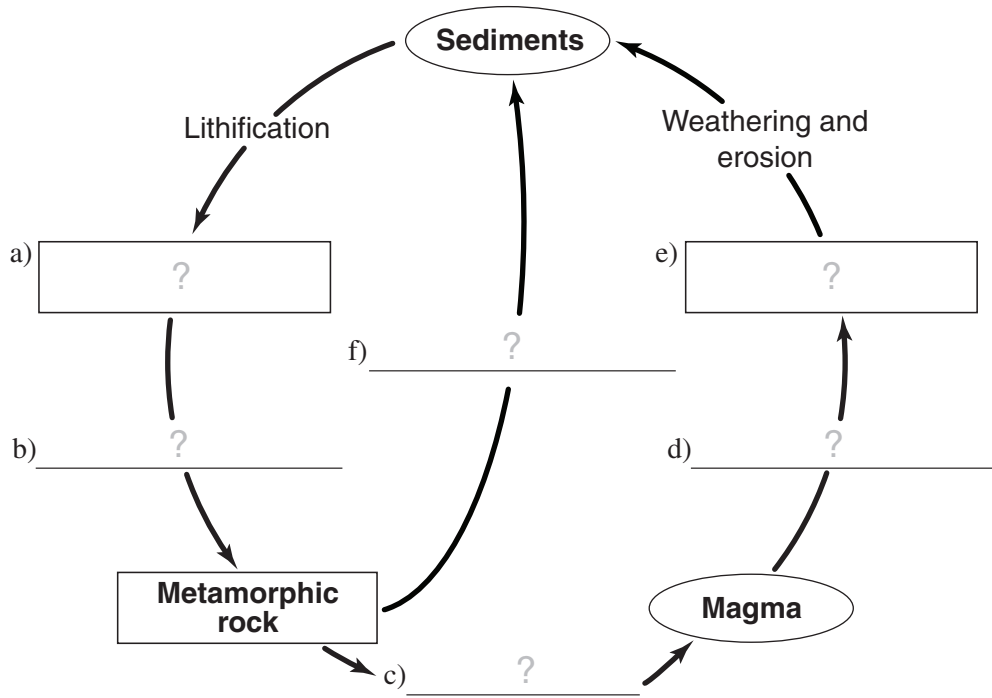
PART B: WRITTEN RESPONSE

Value: 26 marks

Suggested Time: 15 minutes

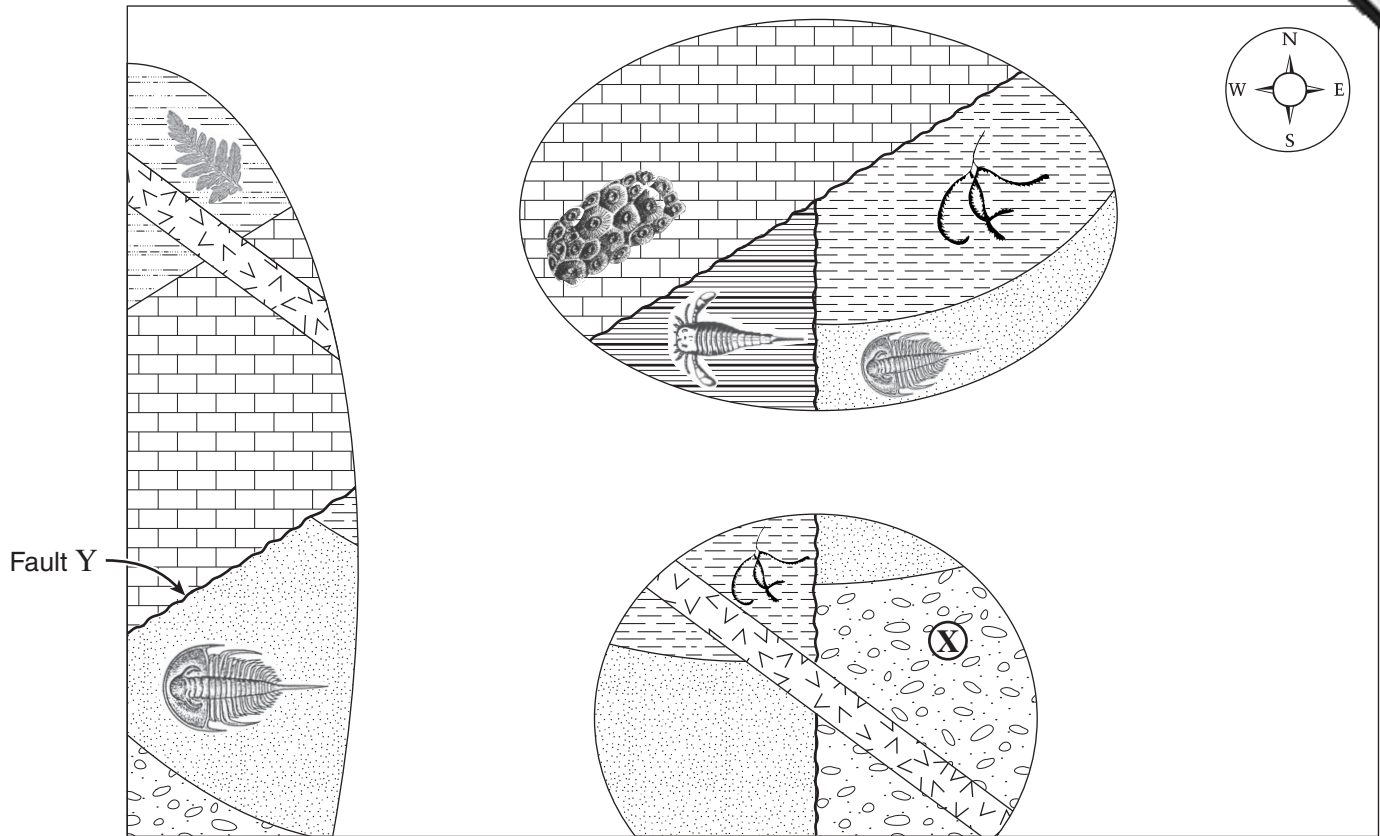
INSTRUCTIONS: Answer the following questions in the space provided in the **Response Booklet**. You may not need to use all of the space given.








1. Complete the following rock cycle diagram by labelling the appropriate Earth material (a, e) or process (b, c, d, f) where indicated. **(3 marks)**



KEY	
Earth material	Process
[?]	_____?

Use the following incomplete geological map to answer questions 2 to 4.
 Each layer represents a different geologic period.



- | | | | | | | | |
|---|-----------|---|-----------|---|--------------|---|-----------------|
|  | Sandstone |  | Limestone |  | Conglomerate |  | Mafic intrusion |
|  | Red shale |  | Siltstone |  | Black shale | | |

2. The diagram shows an incomplete geological map. Complete the map by drawing the contacts between rock layers. It is not necessary to fill in the legend patterns.

3. Using evidence from the diagram, describe how you could determine the geological period during which fault **Y** moved. **(2 marks)**

4. Unit **X** is a Precambrian conglomerate. Describe two different geological reasons why fossils have not been found in unit **X**. **(2 marks)**

Reason 1: _____

Reason 2: _____

5. The following pairs of Earth materials have some similarities to each other. Describe how they are **different**. (4 marks)

Earth Material 1	Earth Material 2	Description of Difference between Materials
<p><i>Example:</i></p> <p>Rock</p>	<p>Mineral</p>	<p><i>A rock is an aggregate of one or more minerals. A mineral is a pure substance (element or compound).</i></p>
<p>Feldspar</p>	<p>Pyroxene</p>	<hr/> <hr/> <hr/> <hr/>
<p>Sandstone</p>	<p>Quartzite</p>	<hr/> <hr/> <hr/> <hr/>
<p>Pahoehoe lava</p>	<p>Aa lava</p>	<hr/> <hr/> <hr/> <hr/>
<p>Sand</p>	<p>Silt</p>	<hr/> <hr/> <hr/> <hr/>

6. It is hypothesized that millions of years ago the African and South American continents were connected in a single land mass, and have since drifted apart. Explain two pieces of evidence that can be found on these continents which confirm this hypothesis. (4 marks)

Evidence 1: _____

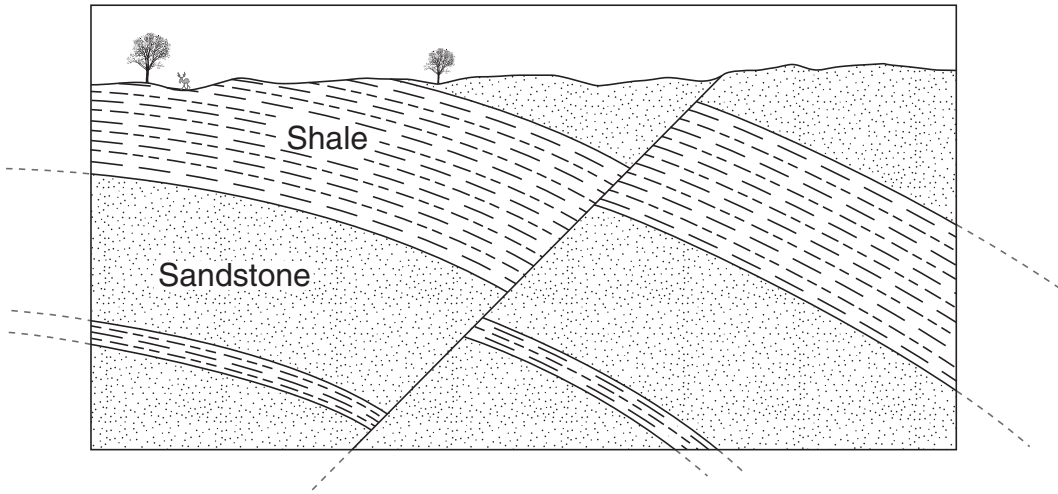
Evidence 2: _____

7. Describe two pieces of evidence for plate movement that could be found on the floor of a typical ocean. (2 marks)

Evidence 1: _____

Evidence 2: _____

Use the following diagram to answer questions 8 and 9.
Note: The rock units continue beyond the edges of the diagram.



8. The diagram shows a geologic cross section of an area known to contain petroleum deposits. Shade the place where a petroleum deposit would most likely be found.

(1 mark)

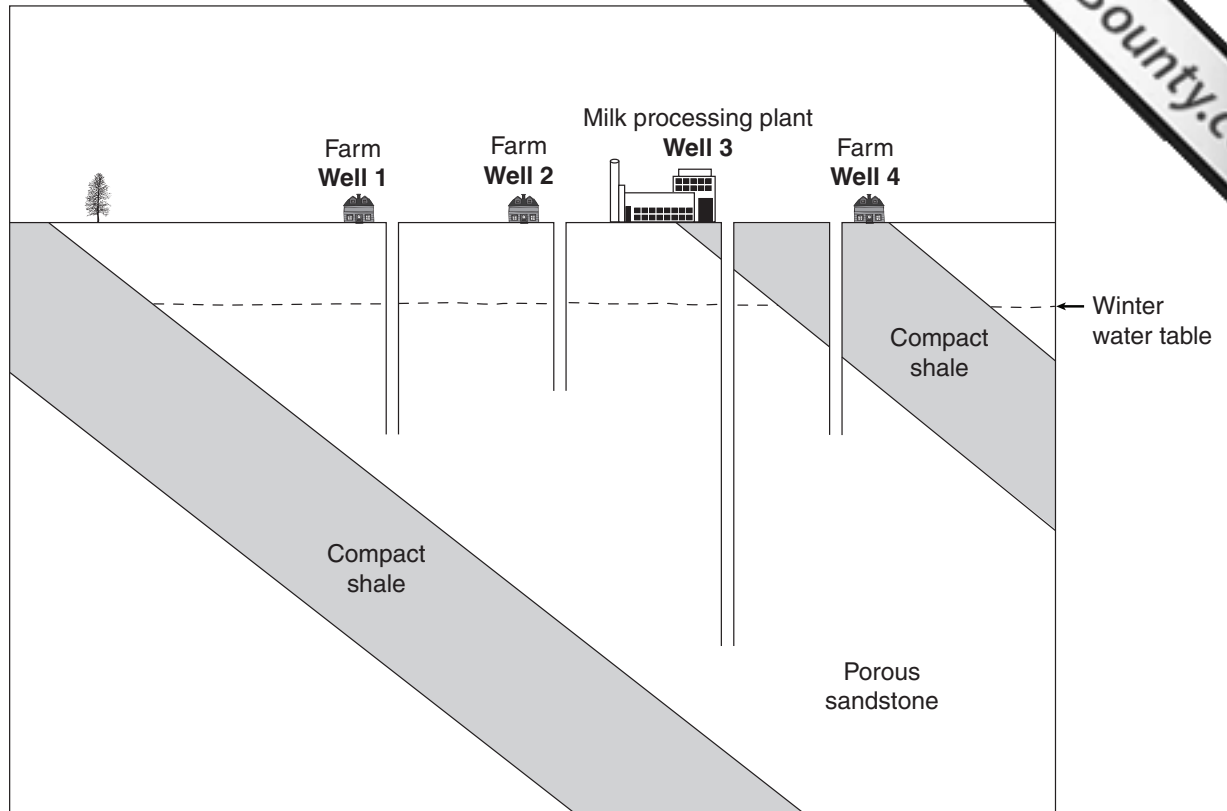
9. Describe two reasons why the sandstone would make a better reservoir rock than the shale.

(2 marks)

Reason 1: _____

Reason 2: _____

Use the following cross section to answer questions 10 and 11.



10. The cross section shows four water wells in a dairy farming area. The underlying bedrock consists of layers of porous sandstone and thick bands of compact shale. The position of the water during the winter months is indicated with a dotted line. On the cross section, label the following: **(2 marks)**
- i) zone of aeration
 - ii) area of groundwater recharge
 - iii) zone of saturation
 - iv) an aquifer
11. During a dry summer period of very high water usage, wells 2 and 4 go dry but wells 1 and 3 are still able to produce a supply of water from the sandstone. On the cross section, draw and label the likely shape of the water table during this dry summer period. **(2 marks)**

END OF EXAM