



Geology 12
Resource Exam A
Response Booklet

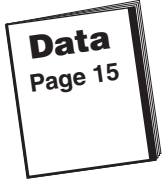
PART B: WRITTEN RESPONSE

Value: 26 marks

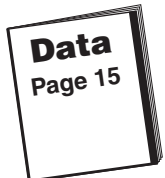
Suggested Time:

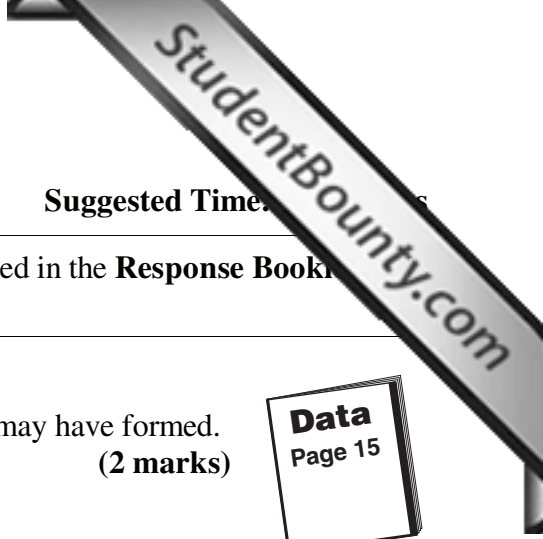
INSTRUCTIONS: Answer the following questions in the space provided in the **Response Book**.
You may not need to use all of the space given.

1. Photograph 9 shows a rock outcrop. Explain how this type of rock may have formed. **(2 marks)**

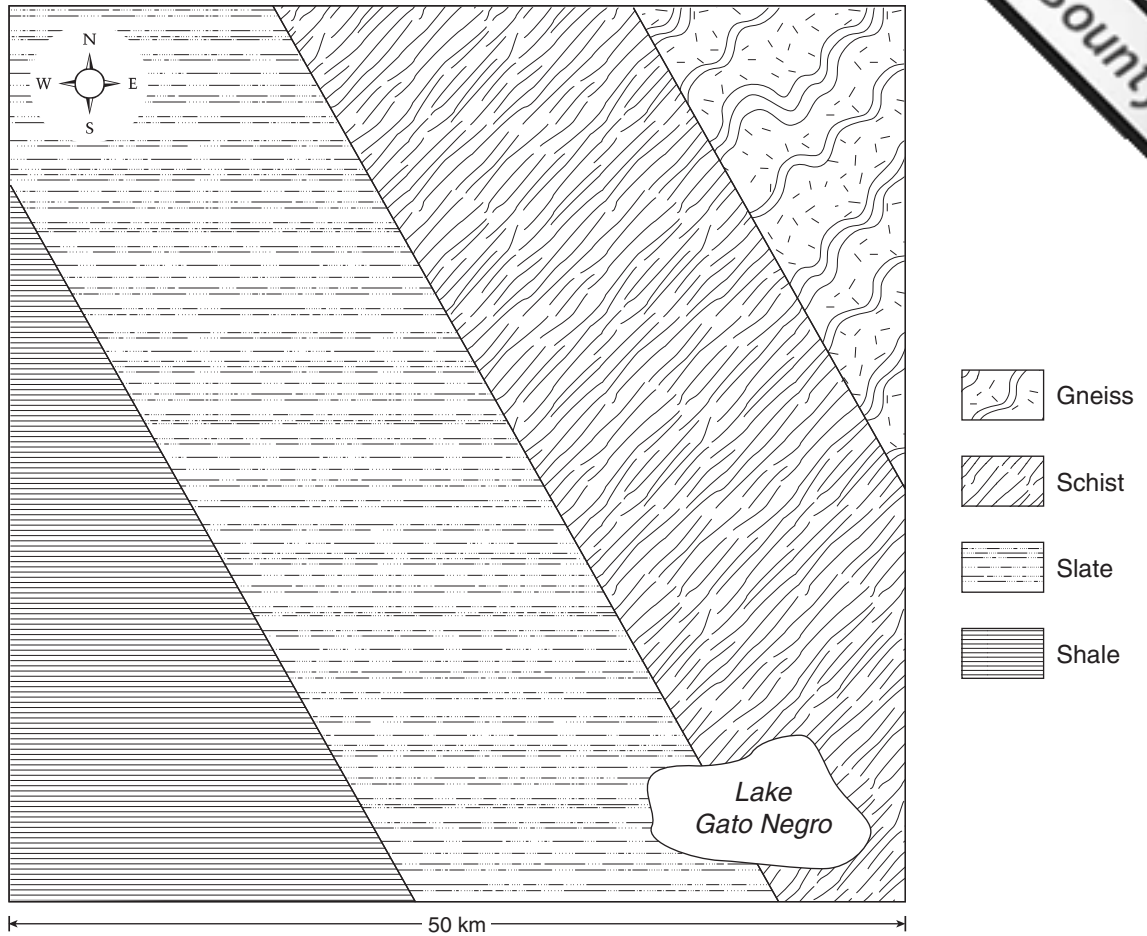


2. The large white clast (fragment) in the centre of the rock in Photograph 9 is igneous. It has a radiometric age of 100 000 000 years. Explain the event this age represents, and how it compares with the age of the formation of the rock. **(2 marks)**





Use the following geological map to answer questions 3 and 4.



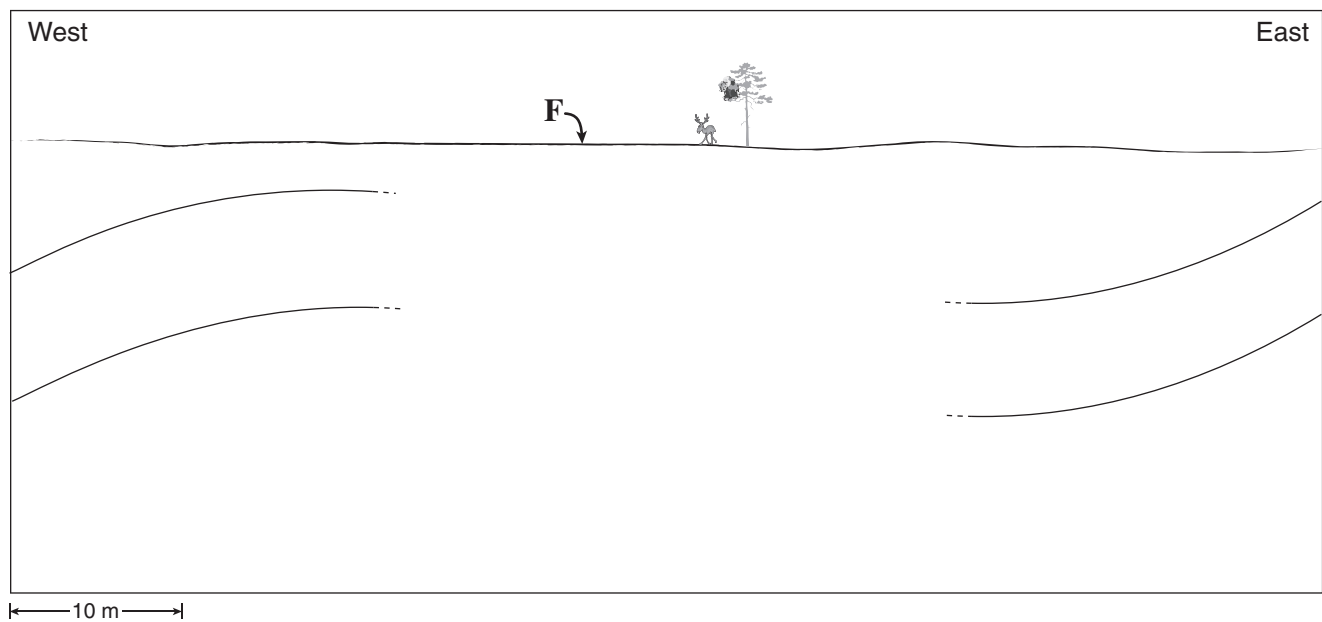
3. Explain in detail how the sequence of rocks shown on the map formed from the original shale. Your answer should refer to an appropriate plate tectonic environment. **(3 marks)**

4. Describe how the texture of the slate would be different from the texture of the gneiss. **(2 marks)**

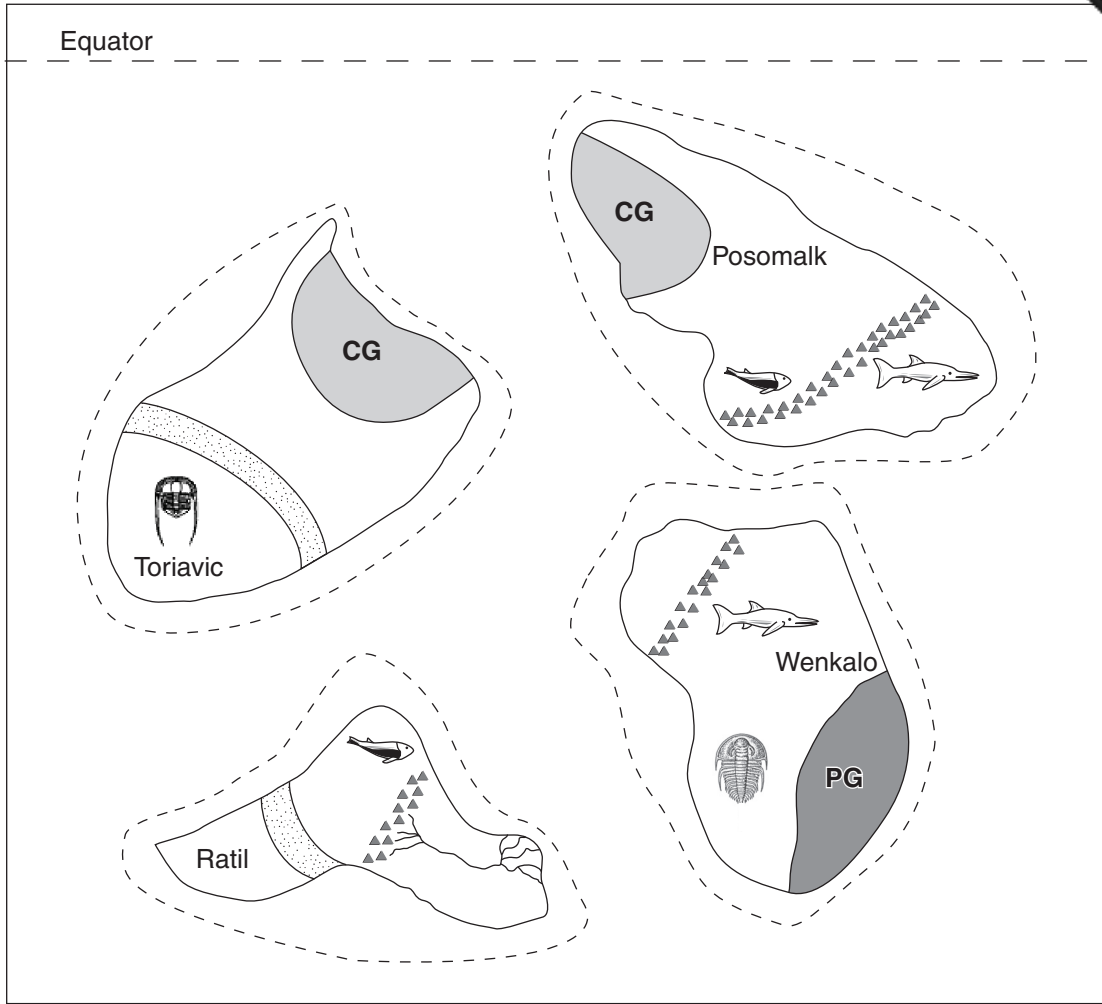
5. A cliff face, part of which is shown below, contains the following features:
- i) One anticline fold structure to the west, one syncline fold structure to the east.
 - ii) Three sedimentary rock layers from the Mesozoic Era. Each layer represents a single geological period.
 - iii) A reverse fault that dips 75 degrees east, and reaches the surface at **F**. The fault has displaced the rock layers by 5 metres.
 - iv) A vertical dike that formed in the Tertiary Period is visible west of the fault.










In the box below:

- complete the sketch and label the dike and the fault (3 marks)
- label the three sedimentary rock layers with the geological period in which each would have formed (1 mark)
- correctly draw and label the anticline and the syncline (2 marks)



Use the following map of continents to answer questions 6 and 7.



- | | | | | | |
|---|--------------------------|---|----------------------------------|--|---|
|  | Silurian freshwater fish |  | Edge of the continental shelf |  | Silurian desert sandstone |
|  | Cambrian trilobite |  | Area of Carboniferous glaciation |  | Mountain range – composed mainly of folded, coral-bearing limestone, sandstone and shale |
|  | Jurassic marine reptile |  | Area of Pleistocene glaciation | | |
|  | Silurian trilobite | | | | |

6. The continents shown on the map were once a single land mass. Describe three pieces of evidence that proves the continental fragments were once joined together.

Evidence 1: _____

Evidence 2: _____

Evidence 3: _____

7. The single, original land mass is thought to have formed by the collision of two still older land masses. Describe one piece of evidence, shown on the map, that supports this idea.

(1 mark)

8. Gold is often found in **hydrothermal** deposits. Explain how these deposits may form. Use a diagram as well as a written description of the process. (3)

Labelled diagram:



Explanation of the process that concentrates minerals such as gold in this deposit.

9. On the copy of Photograph 10 below, label one glacial **erosional** feature with an **E**, label one glacial **depositional** feature with a **D** and complete the table, giving the name of the feature and its description. **(4 marks)**



Photographer Bruce Molnia, Terra Graphics, AGI Earth Science World Image Bank

| Labelled Feature | Description of How the Glacial Feature Formed |
|---|---|
| <p>Name of erosional feature E:</p> <hr/> | <hr/> <hr/> <hr/> |
| <p>Name of depositional feature D:</p> <hr/> | <hr/> <hr/> <hr/> |

END OF EXAM

