EARTH'S RESOURCES – an electronic test!

Multiple-choice questions

Select the letter that corresponds to the best answer. (1 mark each)

1. What term is used to describe any type of useful substance that is obtained from the Earth?

(A) metal
(B) mineral
(C) ore
(D) resource

2. Choose the correct statement.

(A) The crust is the layer of the Earth above the mantle
(B) The lithosphere is the layer of the Earth above the mantle
(C) The crust and lithosphere refer to the same layer of the Earth
(D) The lithosphere is a layer of the crust

3. The table presents some properties of six rocks.

	Silica Content - High	Silica Content - Low
Small crystals	Rock 1	Rock 2
Medium size crystals	Microgranite	Dolerite
Large crystals	Granite	Rock 3

Which rock has large crystals and low silica content?

(A) dolerite

(B) gabbro

(C) granite

(D) obsidian

4. The basic unit of living things is the cell. What term identifies the chemical compounds that form the basic unit of all rocks?

(A) crystals
(B) grains
(C) minerals
(D) sediments

5. Which alternative contains **only** examples of igneous rocks?

(A) basalt, granite and pumice
(B) limestone, shale and basalt
(C) copper sulfate, granite and salt.
(D) pumice, sandstone and limestone

6. Which alternative contains **only** examples of fossil fuels?

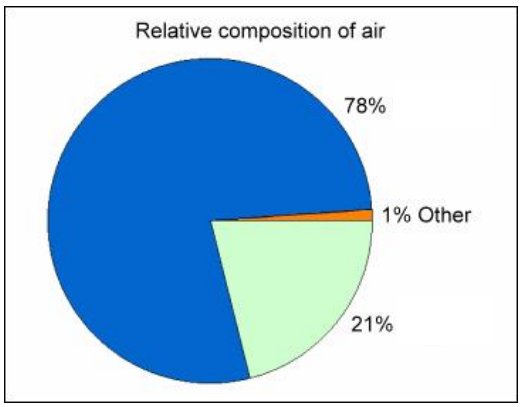
(A) Petroleum, coal and gas
(B) Wood, petroleum and gas
(C) Wood, petroleum and coal
(D) Gas, coal and uranium

7. Air contains nitrogen as well as many other gases such as oxygen, argon and carbon dioxide. Nitrogen is a gas that is used to inflate the tyres of modern aircraft because it is safer to use than air.

The graph shows the relative amount of each gas in our atmosphere.

What is the percentage of nitrogen found in air?

(A) 1 %
(B) 21 %
(C) 57 %
(D) 78 %.



Acknowledgement: http://www.sdm.scot.nhs.uk/images/air.gif

Use the diagram to answer question 8 and 9.

Acknowledgement: http://www.boardofstudies.nsw.edu.au/schoolcertificate/sc_science.html

8. How was this rock formed?

(A) by the cooling of lava

(B) by the cooling of magma

(C) by heat and pressure under the ocean

(D) by compaction on the bottom of a lake

9. What is the size of the fossil in the sample?

(A) .5 mm

(B) .5 cm

(C) 1 cm

(D) 2 cm

10. The rock cycle is a natural cycle which

(A) always begins with igneous rocks

(B) involves igneous, metamorphic and sedimentary rocks

(**C**) takes a short amount of time to complete one cycle

(D) only takes place above the ground

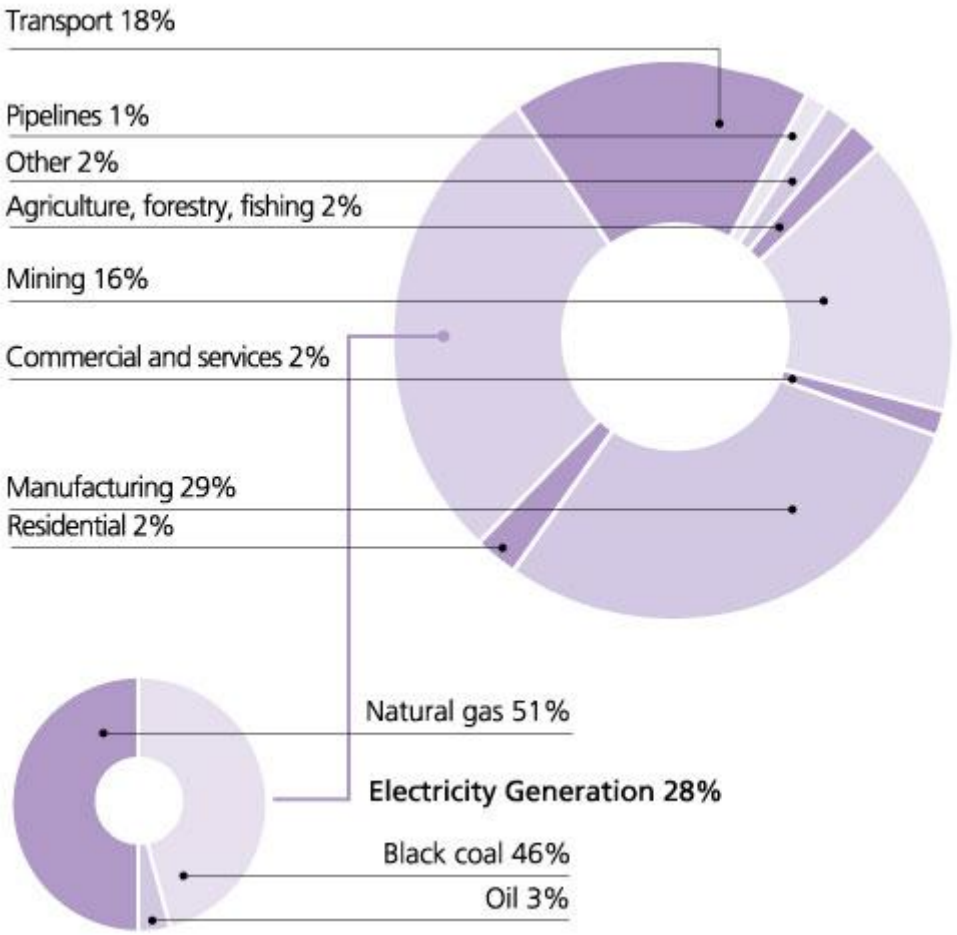
Short answer questions

Write your answer in the space provided. **(1 mark each)**

11. A useful resource obtained from the ocean is _____.

12. When molten rock cools quickly the size of the crystals that are formed is _____.

Use this information to answer Question 13.
The mining industry provides the modern world with many useful resources. To do this, they must remove the resources from the ground. This process consumes large amounts of energy.



(Acknowledgement: http://www.soe.wa.gov.au/site/files/images/Figure-TS3.3_Large.jpg)

13. What percentage of Australia's energy does the mining industry use? _____

14. If igneous rocks are made by the cooling of molten rock, which two processes convert sediments into sedimentary rocks?

_____ and _____

"Image Provided by Classroom Clipart"

15. The molten rock that comes out of a volcano is called _____.

16. If there is a large amount of gas in the molten rock, the eruption can be very violent and _____.

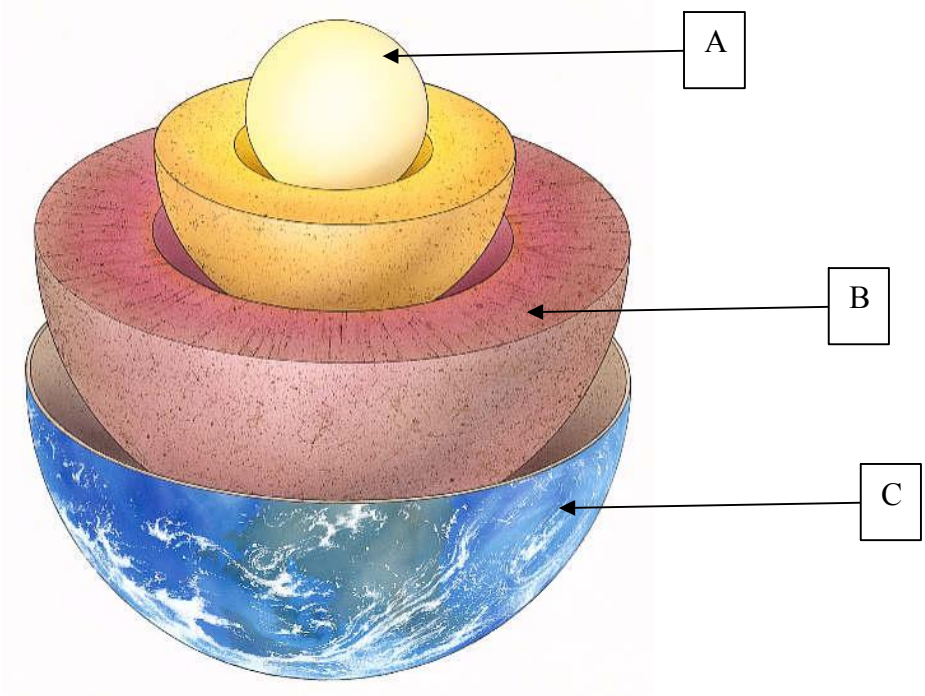
17. What do we call molten rock when it is underground? _____.

18. Aluminium is a very versatile and useful metal that is extracted from an ore called _____.

19. Name two common use of aluminium in our society.

1. _____
2. _____

The next three questions refer to the diagram below.



(Acknowledgement: http://www.dkimages.com/discover/previews/1051/199353.JPG)

20. What is the state of matter in the region marked "A"? _____

21. What is the name of the layer of Earth labeled "B"? _____

22. What is the name of the layer of Earth labeled "C"? _____

23. Many fuels are made from the remains of once living things. The majority of these are extracted from a mixture that is found underground. What is the commonly used name for this mixture? _____

Skills questions

Answer these questions in the space provided. **(3 marks)**

21. Write the procedure you could perform to investigate the effect of cooling rate on crystal size.

_____

_____

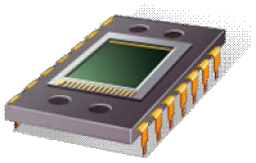
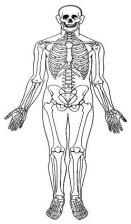
_____

_____

_____

Marks will be awarded for a correct procedure, written in point form, and use of scientific language

22. The crust of the Earth has been analysed by geologists and has been found to contain many different minerals. These minerals can be analysed by chemists to identify the elements they contain. Scientists agree that Earth's crust is composed of 48% oxygen, 29% silicon, 8% aluminium, 5% iron, 4% calcium, 2% sodium, 2% magnesium and the remainder contains many minor components.

Silicon *used in computer chips and solar cells*	***Iron*** *used in car, ships, trains, staples*	***Calcium*** *needed for bone strength*	***Magnesium*** *used to make magnesium-alloy wheels*
			

(a) Draw a table to show the composition of the Earth's crust. **(3 marks)**

Marks will be awarded for neatness, appropriate column headings and correct data.

(b) Draw a suitable graph that summarises the composition of the Earth's crust based on ONE of the following links. **(4 marks)**
http://www.gly.uga.edu/railsback/1121CrustComposition.jpeg

OR

http://regentsprep.org/Regents/earthsci/units/introduction/lithos7.gif

Marks will be awarded for a heading, labeled axes, neatly drawn graph, use of pencil.

Outcome 4.9: A student describes the dynamic structure of Earth and its relationship to other parts of our Solar System and the Universe.	
Students learn about:	**Students learn to:**
4.9.3 the structure of the Earth	describe the inner structure of the Earth in terms of core, mantle, crust and lithosphere.
4.9.4 the atmosphere	identify gases that comprise the greater percentage of air and explain the difference between Earth's atmosphere and space
4.9.6 the lithosphere	identify that rocks are composed of minerals b) explain the breaking down of rocks in terms of physical and chemical changes c) relate the formation of landforms to weathering, erosion and deposition d) describe the origins of sedimentary, igneous and metamorphic rocks.
Outcome 4.11: A student identifies where resources are found, and describes ways in which they are used by humans	
Students learn about:	**Students learn to:**
4.11 natural resources	a) distinguish between natural and made resources b) give examples of resources from living things and resources extracted from the air, Earth and oceans c) identify fossil fuels and describe some of their uses d) identify renewable and non-renewable sources of energy.

Syllabus Links
SCIENCE Years 7-10 syllabus