



Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 31

1 Key words**[4]**

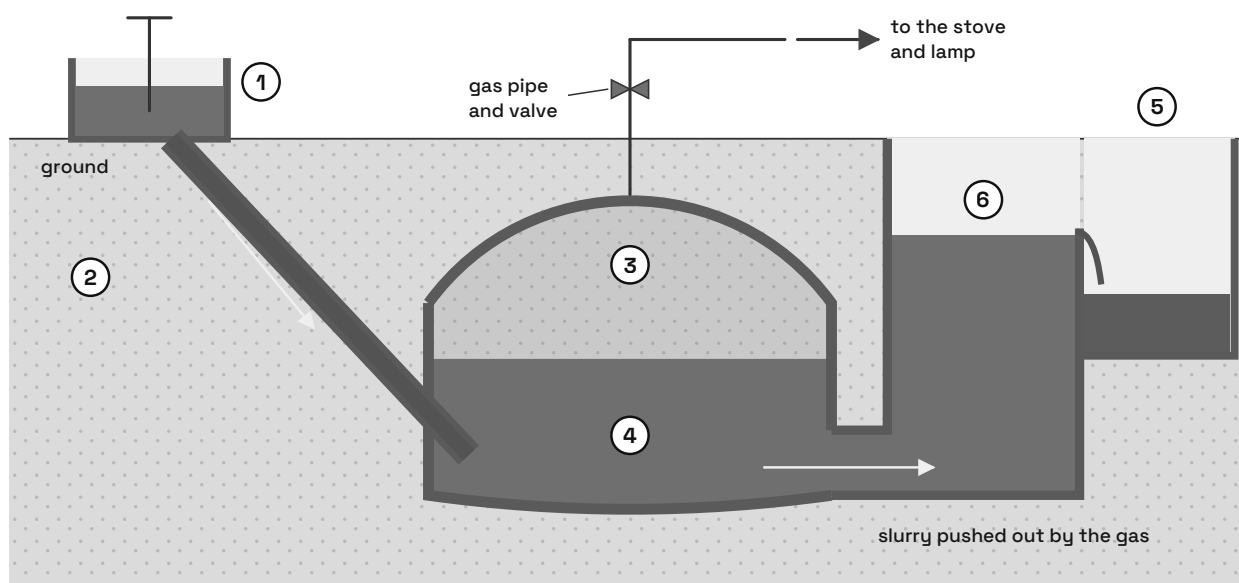
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

briquette carbon dioxide coal helium hydroelectricity methane oxygen
photovoltaic cells renewable thermonuclear fusion

Sources of energy that nature replaces quickly, such as sunlight and wind, are _____ sources of energy. In the Sun's core, hydrogen nuclei join to form _____, a process called _____. A solar panel is made of many _____, mostly of silicon. A compressed block of combustible biomass is called a _____. The gas in biogas that burns is mainly _____, formed when organic matter decomposes in the absence of _____. Electricity made from the energy of flowing water is called _____.

2 Label the diagram**[3]**

The diagram shows a dome-type biogas plant. Name the parts numbered 1 to 6. Each carries 0.5 mark.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____



[5]

i. Which is a non-renewable source of energy? [1]

[3]

a. What is biofuel? [1]

- b. Name the poisonous gas given off when a briquette burns in a closed room. [1]

- c. Why is the inside of a solar dryer painted black? [1]

[8]

a. Give a reason: the Sun is the ultimate source of energy. [2]



- b. Write any two differences between a carbonized briquette and a non-carbonized briquette. [2]**

- c. Give a reason: hydroelectricity is the most appropriate source of energy for Nepal. [2]

- d. Give a reason: a solar water heater needs no pump to fill its tank with hot water. [2]

6 Long answer [4]

Write a long answer to the following question.

Describe the process of energy production in the Sun.

[illegible]

7 Numerical problem [2]

Solve the following problem. Show your working.

In a nuclear reaction, 0.2 g of mass is lost. How much energy is released? (Speed of light $c = 3 \times 10^8$ m/s.)

[illegible]

Answer:



8 Think

[2]

Think, then answer.

Are there any sources of energy that don't come from the Sun? Name any two, and say where their energy comes from.

9 Activity: Hot water from the Sun

(not marked)

Paint one plastic bottle black (or wrap it in black cloth) and leave another clear. Fill both with the same amount of tap water, close them, and leave them side by side in the sun. Measure the temperature of the water in each.

Bottle	At the start (°C)	After 1 hour (°C)	After 2 hours (°C)
black			
clear			

Which bottle got hotter? Name two solar devices that use this idea.

