Primary 6 Science
Semester 2 Topical Test 3

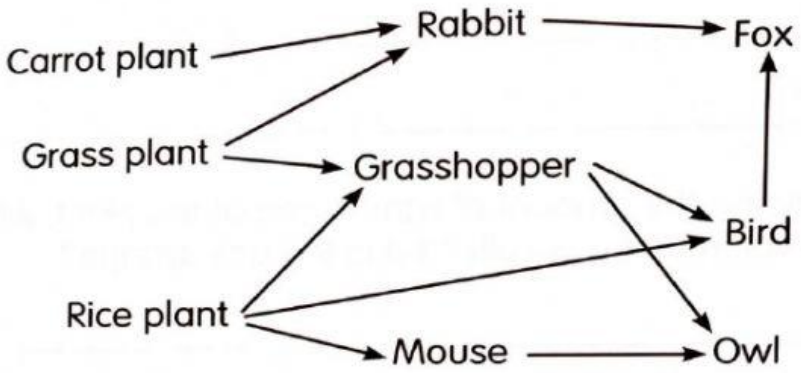
Chapter 1 "Energy In Food"

Name	: _____	**Marks**	: _____ / 20
Class	: _____	**Parent's Signature**	: _____
Date	: _____	**Duration**	: 35 minutes

STRUCTURED QUESTIONS

Read the questions carefully and write your answer in the space provided below.

1. Study the food web below.



a. The energy in the living things in a food web can be traced back to a primary source of energy. What is the primary source of energy in living things? [1]

_____

b. State which living things in the food web above depend on primary source mention in (b) directly and indirectly? [2]

directly: _____

indirectly: _____

c. State three ways of how do the animals in the food web above get their energy. [2]

_____

_____

_____

2. The table below show energy cost of several activities per unit of time (*Physical Activity Ratio, PAR).*

Type of activity	Energy cost per hour (PAR)
Sleeping	1
Personal care (dressing, showering)	2.3
Eating	1.4
Sitting	1.5
Low intensity aerobic exercise	4.2

Source: Human energy requirements (Report of a Joint FAO/WHO/UNU Expert Consultation), 2001

a. Annie took a nap for 30 minutes, when she woke up, she did her personal care in an hour. At that moment, Mary just done her 30 minutes aerobic exercise. Who used more energy, Annie or Mary? Calculate the total energy used by Annie and Mary. [2]

_____

_____

b. When we are sleeping, eating or sitting, it still cost some energy, explain why is this so? [1]

_____

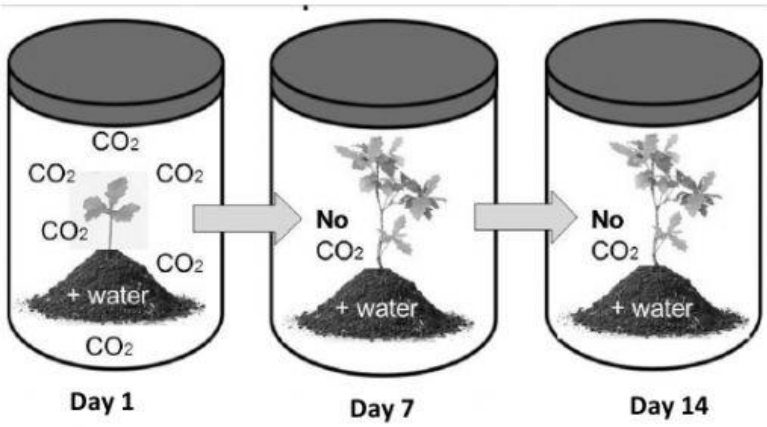
_____

c. According to the table, how is the amount of energy cost related to the activities done by the body? [1]

_____

_____

3. A plant was put in a sealed container and be observed in two weeks.



The plant grew and the amount of CO2 decreased over time. On 7th day the leaves started to turn yellowish. On 14th day, most of the leaves are yellow and it's about to fall.

a. Explain why the amount of carbon dioxide decreased over time. [1]

_____

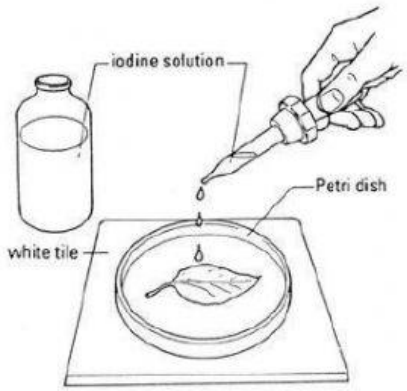
_____

b. Where did the plant get oxygen to grow during two weeks? [1]

_____

_____

c. A leaf was plug from the plant, on day 1, day 7 and day 14. The leaf was tested by iodine as shown in the diagram below.

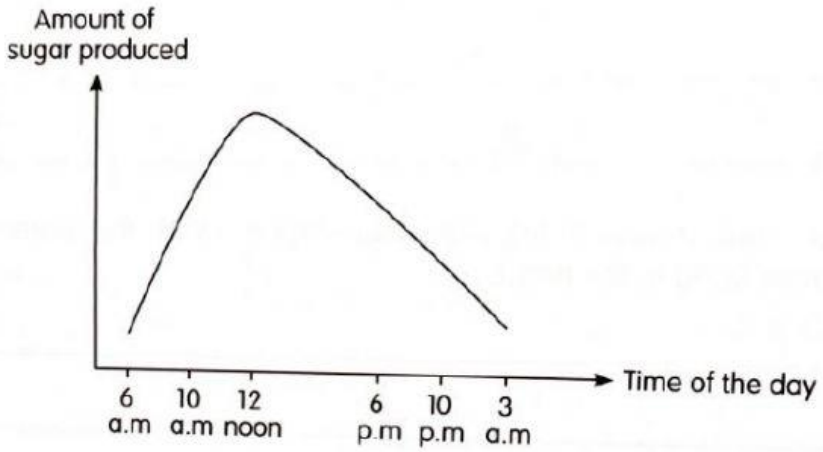


Which leaf, leaf from day 1, day 7 or day 14, most likely would turn into blue-black after it's dropped by iodine? Explain your answer. [2]

_____

_____

4. An experiment was carried out to investigate photosynthesis in a plant for one day. The plant was placed in the open area where sunlight could reach it. The graph below shows how the amount of sugar produced in the leaves of the plant changed at different times of the day.



a. What is the variable changed in this activity? [1]

_____

b. According to the graph, at which time does the rate of photosynthesis is the highest? Why is this so? [2]

_____

_____

c. At what time will the plant produce the least amount of oxygen? [1]

_____

d. Suggest two factors that affect the amount of sugar produced by the plant. [2]

_____

_____

e. Complete the diagram below to show the process of photosynthesis. [1]