Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B2 Organisation

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Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Q1.

Substances are transported through plants.

(a) Use the correct answer from the box to complete each sentence.

capillary	**guard cells**	**phloem**
stomata	**transpiration**	**xylem**

(i) Water is transported from the roots to the stem of a plant

in the _____ .

(1)

(ii) Dissolved sugars are transported through the plant

in the _____ .

(1)

(iii) Movement of water through the plant is called the

_____ stream.

(1)

(iv) Water vapour moves out of the plant through pores

called _____ .

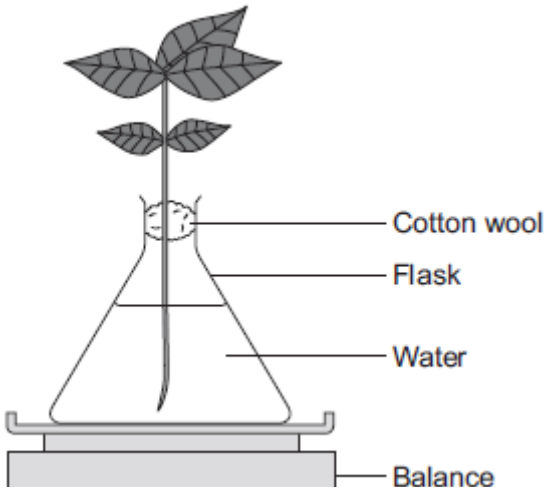
(1)

(b) Students investigated the effect of different conditions on water loss from leaves.

The apparatus is shown in **Figure 1**.

Figure 1

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The students set up four flasks, **A**, **B**, **C** and **D**.

The students:

- used the same size plant shoot in each flask
- recorded the mass of the flask and plant shoot at the start of each experiment
- left each flask and plant shoot in different conditions
- recorded the mass of each flask and plant shoot after 2 hours.

Table 1 shows the conditions that flasks **A**, **B**, **C** and **D** were left in for 2 hours.

Table 1

Flask	Temperature in °C	Fan or no fan
A	20	No Fan
B	20	Fan
C	35	No Fan
D	35	Fan

(i) Suggest why the students used cotton wool in each flask.

_____

_____

(1)

(ii) The use of the same size of plant shoot made the investigation a fair test.

Explain why.

_____

_____

_____

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_____

_____

(2)

(iii) **Table 2** shows the students' results.

Table 2

Flask	Conditions		Mass at the start in grams	Mass after 2 hours in grams	Mass of water lost in 2 hours in grams
	Temperature in °C	Fan or no fan			
A	20	No Fan	150.0	148.1	1.9
B	20	Fan	152.0	148.5	3.5
C	35	No Fan	149.0	145.9	3.1
D	35	Fan	150.0	145.5	

What mass of water was lost by the plant shoot in flask **D**?

_____

_____

_____ grams

(1)

(iv) Suggest what conclusion can be made about the effect of temperature on water loss from the plant shoot.

_____

_____

_____

(1)

(v) Suggest what conclusion can be made about the effect of the fan on water loss from the plant shoot.

_____

_____

_____

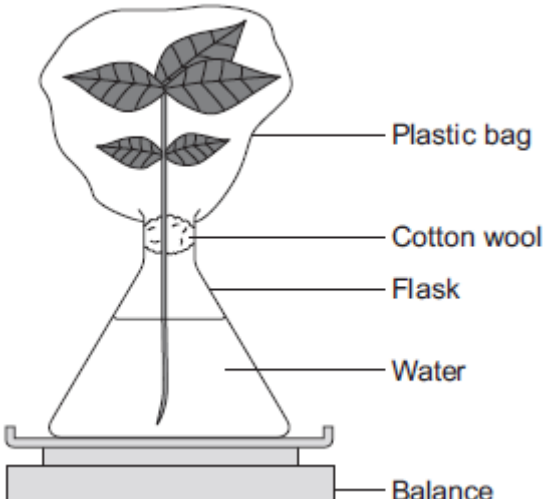
(1)

(c) The students carried out another experiment at 20 °C, with no fan.

The students used the apparatus in **Figure 2**.

Figure 2

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In this experiment, the students:

- recorded the mass of the flask and plant shoot before tying the plastic bag around the plant shoot
- removed the bag after 2 hours and recorded the mass again.

(i) What mass of water would be lost from the plant shoot in 2 hours?

Draw a ring around the correct answer.

0.3 g **1.9 g** **3.9 g**

(1)

(ii) Give a reason for your answer to part **(c)(i)**.

_____

_____

_____

(1)

(Total 12 marks)

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Q2.

Scientists investigated how exercise affects blood flow to different organs in the body.

The scientists made measurements of blood flow to different organs of:

- a person resting in a room at 20°C
- the same person, in the same room, doing vigorous exercise at constant speed on an exercise cycle.

The table shows the scientists' results.

Organ	**Blood flow in cm^3 per minute whilst …**	
	resting	**doing vigorous exercise**
Brain	750	750
Heart	250	1000
Muscles	1200	22 000
Skin	500	600
Other	3100	650

(a) In this investigation, it was better to do the exercise indoors on an exercise cycle than to go cycling outdoors on the road.

Suggest **two** reasons why.

Do **not** include safety reasons.

1. _____

_____

_____

2. _____

_____

_____

(2)

(b) Blood flow to **one** organ did **not** change between resting and vigorous exercise.

Which organ?_____

(1)

(c) (i) How much more blood flowed to the muscles during vigorous exercise than when resting?

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_____

_____

Answer = _____ cm^3 per minute

(2)

(ii) Name **two** substances needed in larger amounts by the muscles during vigorous exercise than when resting.

1. _____

2. _____

(2)

(iii) Tick (✓) **one** box to complete the sentence.

The substances you named in part (c)(ii) helped the muscles to

make more lactic acid. ☐

respire aerobically. ☐

make more glycogen. ☐

(1)

(iv) The higher rate of blood flow to the muscles during exercise removed larger amounts of waste products made by the muscles.

Which **two** substances need to be removed from the muscles in larger amounts during vigorous exercise?

Tick (✓) **two** boxes.

Amino acids ☐

Carbon dioxide ☐

Glycogen ☐

Lactic acid ☐

(2)

(d) The total blood flow was much higher during exercise than when resting.

One way to increase the total blood flow is for the heart to pump out a larger volume of blood each beat.

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Give **one** other way to increase the blood flow.

_____

_____

(1)

(Total 11 marks)

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