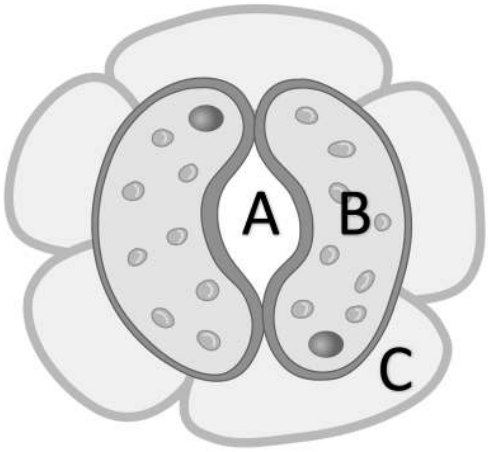
0 1 Below is a diagram of the underside of a leaf



0 1 . 1 State the name of each structure in the diagram

[3 marks]

Structure A Stomata/stoma [1]

Structure B guard cell [1]

Structure C (lower) epidermal cell/epidermis [1]

0 1 . 2 In an experiment 2 leaves of the same size and species were weighed and their mass noted. One leaf (leaf A) was covered on both sides with Vaseline, the other leaf (leaf B) was not. Vaseline blocks the stomata. After 48 hours both leaves were weighed again and their new mass noted.

Leaf B started out as 1.58g but after 2 days had dropped to 1.26g. Calculate the percentage change in mass after 48 hours. Show your working **[2 marks]**

1.58-1.26 = 0.32g [1]
0.32/1.58 x 100 [1] = 20% (2 marks for 20% without showing calculation)

0 1 . 3 The percentage change in mass of leaf A was much less than leaf B. Explain why **[2 marks]**

transpiration did not occur/no water loss/less water loss/less evaporation [1]
as water could not escape the plant through the stomata [1]

0 1 . 4 Translocation is often confused with transpiration. Translocation is the movement of the sugars (produced in photosynthesis) all around a plant via the phloem vessels. Using this information, as well as your own knowledge, compare transpiration and translocation and refer to the following:

* where each process occurs in plants
* the substances involved in each
* the direction of movement

[6 marks]

Similarities:
Both are mechanisms of transport in plants/both use vessels[1]

Differences:
transpiration involves the xylem, while phloem is used in translocation [1]
transpiration is the movement of water while translocation is the movement of glucose/sugar/sucrose [1]
in transpiration transport is up the plant, but in translocation it is from the leaves to the rest of the meristems for growth/in all directions [1]

Additional differences based on your knowledge:
transpiration is driven by evaporation of water from the leaves, while translocation is not [1]
transpiration occurs through hollow tubes (xylem) while translocation occurs through sieve plates/living tubes [1]