Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

(a) In the following passage the numbered spaces can be filled with biological terms.

During photosynthesis, plants produce __(1)__ compounds which contain carbon, such as carbohydrates, lipids and proteins. Most of the sugars synthesised by plants are used by the plant in __(2)__. The rest are used to make other groups of biological molecules. These biological molecules form the biomass of the plants. Biomass can be measured in terms of mass of __(3)__ per given area per given time. The chemical energy store in dry biomass can be estimated using __(4)__.

Write the correct biological term beside each number below, that matches the space in the passage.

(1) _____

(2) _____

(3) _____

(4) _____

(2)

(b) Describe the **light-independent** reaction of photosynthesis.

_____

_____

_____

_____

_____

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_____

_____

(6)

(Total 8 marks)

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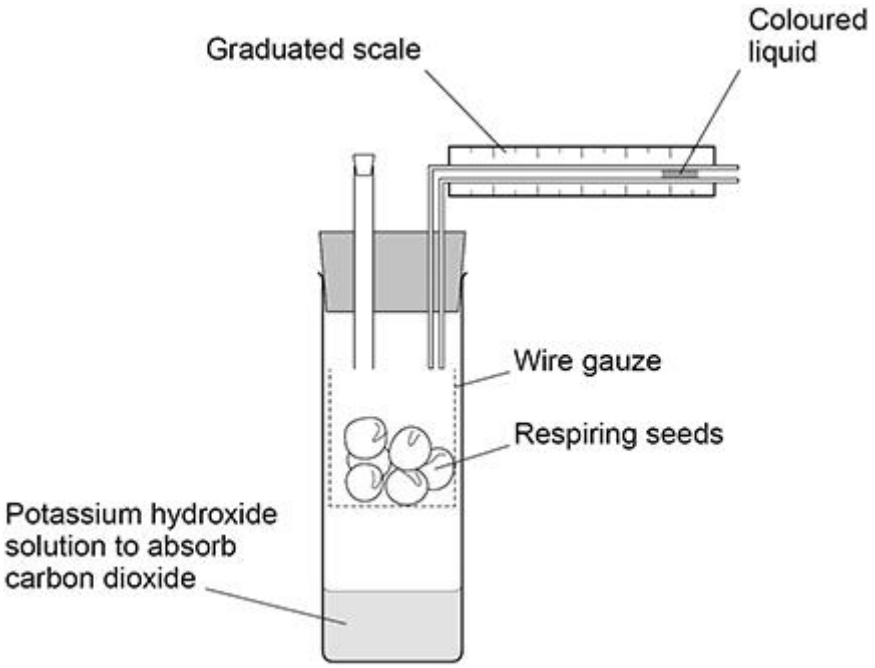
Q2.

(a) Put a Tick (✓) in the box next to the process that occurs in anaerobic respiration but does **not** occur in aerobic respiration.

Phosphorylation of glucose	☐
Reduction of NAD	☐
Reduction of pyruvate	☐
Substrate-level phosphorylation	☐

(1)

A student used the apparatus shown in the diagram below to measure the rate of aerobic respiration of seeds for 48 hours.



(b) During the 48 hours, the coloured liquid moved to the left.

Explain why.

_____

_____

_____

_____

_____

_____

_____

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_____

_____

(3)

(c) Apart from time, give **two** measurements the student would have to make to determine the rate of aerobic respiration of these seeds in cm^3 $hour^{-1}$

1 _____

_____

2 _____

_____

(2)

(d) The student used the same apparatus to determine the volume of carbon dioxide the seeds produced during 48 hours.

Give the change the student would need to make to the contents of the apparatus **and** describe how he could calculate the volume of carbon dioxide produced.

_____

_____

_____

_____

_____

_____

_____

_____

_____

(3)

(e) The student calculated that during the 48 hours, 6.2×10^{-4} cm^3 of oxygen was absorbed by 40 g of seeds.

Calculate the oxygen uptake in cm^3 g^{-1} $hour^{-1}$

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Answer _____ $cm^3\ g^{-1}\ hour^{-1}$

(1)

(Total 10 marks)

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