

AS Level Biology A
H020/01 Breadth in Biology

Question Set 17

1. Practical apparatus is often used in biological investigations.

(a) Table 22 is a list of practical apparatus used in biological investigations. Each piece of apparatus has been assigned a letter.

Letter	Apparatus
A	calorimeter
B	gridded quadrat
C	biosensor
D	potometer
E	chromatography tank
F	spirometer
G	colorimeter

Table 22

The table below gives five examples of biological investigations.

Using Table 22, write the letter of the correct piece of apparatus that would be used in each investigation.

Biological investigation	Letter of piece of apparatus that would be used
Determining blood glucose concentration over a short timeperiod following a meal	C
Determining the distribution of dandelions on a playing field	B
Estimating the concentration of pigment that has escaped from plant tissue that had been placed in waterbaths of different temperatures	G
Measuring the vital capacity of a student	F
Estimating the rate of transpiration in a plant shoot	D

[3]

(b) Before taking readings with a colorimeter it is important to calibrate the apparatus.

(i) Describe how a colorimeter is calibrated.

[1]

Cuvette containing blank sample (e.g. distilled water) placed in colorimeter and set to zero.

(ii) Why is it important to calibrate a colorimeter?

[1]

Calibration ensures the accuracy of the colorimeter, reducing any measurement uncertainty. It ensures all values are measured to an equal standard.

Total Marks for Question Set 17: 5

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