



BIOLOGY

6884/03

Paper 3 Practical Test

October/November 2018

Confidential

MARK SCHEME

{6884/03}

MARKS: 40

- 1 (a) (i) A- 20 °C to 25 °C +
B- above 65°C; [1]
- (ii) table-closed margins;
headings;
observations- A brown;
B no browning / no change /white;
C brown; [5]
- (iii) to give time to the enzyme to act on the apple;
guidance – response to focus on effect of temp on enzymes; [1]
- (iv) high temperature denatures the enzyme; /
and stops browning; / [2]
- (v) control variables / control experiment; / comparison;
to verify that change was caused by the treatment / OWTTE; [2]
- (vi) enzymes are pH specific / have optimal pH;
enzyme inactivated / denatured at extreme pH; [2]
- (vii) use different fruits;
cut / peel the fruits;
same size of fruits / same area exposed to air;
leave for specified time / reference to time;
compare the area covered by brown spots; [max. 3]
- (b) (i) E anytime between 10s and 75 seconds;
F anytime between 5s and 50 seconds
Note : E should take longer time than F [1]
- (ii) chopping increases surface area;
more reducing sugar exposed;
faster reaction;/less time taken for chopped piece to turn brick red; [max;3]

- 2 (a) (i) **G**- water coming out;
H- no / little water; [2]
- (ii) osmosis has occurred in **G**;
 higher water potential in cells than outside (where salt is sprinkled);
 water moved out;
 through partially permeable membrane;
 dissolving the salt; [max 4]
- (iii) decrease in size; [1]
- (iv) repeat the investigation;
 use other fruit;
 increase the sample size;/ more identical set – [max.2]
- (v) outline- single clear lines with no shading;
 size- occupies at least half the space provided;
 detail- 3 layers shown and thickness of layers shown; [max. 2]
 seeds / description labelled; - [1]
- (b) (i) 73(mm); [1]
- (ii) more water diffused into the potato than the other samples;
 it had a lower water potential compared to the other samples; [2]
- (iii) axes- labelled with units and suitable even scale; starting from O;
 size-occupies at least half the grid;
 plot- accurate plotting; 0
 bars- have an equal widths + equal gaps between each other [4]
- (iv) 70 (mm); [1]