JUNE 2004

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 40

SYLLABUS/COMPONENT: 0610/05

BIOLOGY
(Practical)

UNIVERSITY *of* **CAMBRIDGE**
International Examinations

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Question 1

(a)   water ~   yellow / brown ;   (*A*) *"iodine coloured"*
                                                (*R*) *"no change" alone*

         starch ~   blue-black ;   (*A*) *qualified blue (e.g. dark) / black / dark particles*
                                                (*R*) *"dark brown" alone*   **2**

(b) (i)   16 drops iodine ;
             iodine drops in two groups ;   **2**

(ii)   ruled lines ;
          3 columns / rows ;   [*ignore conclusions*]
          headings ;   [*3 ~ A, B, Time*]
          space for 8 sets of recordings ;   (*A*) *9*
          neatness ;   [*include boundary*]   **max 4**

(iii)   at least one result recorded (for A & B) ;
           complete set of results ;
           appropriate colours recorded (not conclusions alone) throughout ;
                                      (*A*) *no change / ditto marks etc*
                                      (*R*) *no result / nothing*   **3**

(c)   *Refer to candidate's results in (b)(iii)*

         with salt takes less time *or* suitable time ref. ;
         salt , speeds up enzyme / makes reaction faster (than without)
                        or suitable rate ref. ;
         figures compared ;   **max   2**

(d)   fair (test) / control / explained ;
         compensate for volume of salt / make volumes equal ;
         suitable ref. equal concentrations amylase ; (e.g. same dilution)   **max   2**

(e)   1   all other factors constant ;
         2   equal , volumes / concentration , of enzyme ;
         3   equal , volumes / concentration , of starch ;
         4   same temperature ;
         5   vary pH ;
         6   detail of suitable method ;
         7   different sampling procedure ;
         8   different testing procedure ;
         9   repeat of previous method ;
         10   record results ;
         11   repeat / replicates ;   **max 5**

                                                                    [Total : 20]

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Question 2

(a) (i)   Drawing ~   clear outline S1 ;
                        at least 5 cm in one direction ;
                        detail of venation ;
                        wing and seed distinct ;

           Labels ~   seed ;
                        point of attachment ;   **6**

(ii)   clear measurement line shown ;
        corresponding to length of drawing ;
        length of drawing measured correctly (± 2 mm) ;
        units ;   [*once only*]
        "drawing length ÷ specimen length" ;
        answer correct ;   [*to 1dp, no units*]   (*A*) *ratio x:1*   (*R*) *%*   **6**

(b) (i)   accurate trace ;   [*must be cut out / recognisable*]
        answer ;   [*4 – 5 cm²*]
        units ;   **max 3**

(ii)   counting (whole) squares ;
        ref. part squares ;
        detail ; (e.g. counting squares greater than half
                             leaving squares less than half
                             estimating part squares into whole
                             large square = 1cm²
                             small square = 4mm²
                             25 small squares = 1 large square / small squares ÷ 25 = cm²)
        x 2 for both sides ;   [*move down from (i) if necessary*]
        Allow 1 mark for
                length x width / area of rectangle – uncovered part alone   **max 3**

(c)   wind / storm + description ;   [*increase / decrease , distance = minimum*]
        rain + description ;
        other suitable environmental factor ; ;
                      (e.g.   sheltering by leaves +
                             sheltering by , trees / large structures +
                             humidity +
                             rivers / moving water (floats) +
                             animals eating +   **max 2**

[Total : 20]