UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2006 question paper

0654 CO-ORDINATED SCIENCES

0654/05 Paper 5, maximum raw mark 45

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the Report on the Examination for this session.

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CIE is publishing the mark schemes for the May/June 2006 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

1 **(a)** **(i)** contents column of table completed clearly and correctly;

(ii) Observations recorded clearly, corresponding with the supervisor's
(Should show cloudy in tubes 1 and 3 clear in tube 2, brown iodine in tubes 4, blue/black in tubes 5 and 6); [1]

(b) **(i)** tubes 2 and 4 (only); **[1]**

(ii) pepsin **[1]**

(iii) The acid denatured the enzyme/prevented it from working/destroyed enzyme; **[1]**

(iv) to act as a control/to check that the substance would not be broken down unless the enzyme was present; **[1]**

(c) **(i)** cloudy/white precipitate;
had become denatured; **[2]**

(ii) gone colourless;
the protein has been broken down/digested (by the pepsin); **[2]**

(iii) denatured by heat;
broken by pepsin (which is a protease); **[2]**

[Total: 15]

2 **(a)** measured values

correct calculation **[2]**

(b) mass to nearest gram **[1]**

(c) calculation correct **[1]**

(d) volume correct for figures **[1]**

(e) balance point **[1]**

distance **[1]**

mass correctly calculated **[2]**

(f) calculation correct **[1]**

in agreement with supervisor's value **[1]**

(g) measurements as in **(a)**, as it is difficult to produce a regular shape **[2]**

(h) heat plasticine in water at 80°C and remeasure
or measure change in volume in water at 80°C **[2]**

[Total: 15]

3 **(a)** **(i)** mass recorded

(ii) volume of gas collected

in agreement with calculated value [

(b) **(i)** limewater milky
carbon dioxide **[2]**

(ii) air **[1]**

(c) explanation and why it is dangerous **[2]**

(d) dark green/blue (not just green)
pH about 10 **[2]**

(e) **(i)** fizzing
carbon dioxide **[2]**

(ii) green/yellow
pH about 7/8 **[1]**

(f) use a syringe
drawing **[2]**

[Total: 15]