UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

0610 BIOLOGY

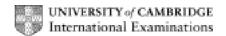
0610/51

Paper 5 (Practical Test), maximum raw mark 40

Mark schemes must be read in conjunction with the question papers and the report on the examination.

• CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0610	51

Question		Mark scheme		Additional guidance A. = accept, R. = reject, I. = ignore.	
1	(a)	Table: 3 columns; Column headings appropriate + units; Neat ruled lines; Results recorded for three tubes;	[5]	if 2 columns, A . the headings I. absence of the word 'enzyme' Outer 'box' / 'frame' not needed for the neatness mark.	
	(b) (i)	greater volume with enzyme; greater volume with 3% enzyme than 1%; clearer juice;	[3]	 A. relevant ref. to colour because question asks for 'appearance' A. converse = 'cloudy' – only applies to the 0% enzyme. A. ecf from results in table 	
	(ii)	repeat readings; control temperature of incubation; control pH with use of buffers; more concentrations; use similar apples from same tree / same age;	[max 3]	A. same variety or ref. to named varieties. e.g. separate series of tests with other fruits / longer time / larger volume / use stop watch.	

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0610	51

Question	Mark scheme		Additional guidance A. = accept, R. = reject, I. = ignore.
(c) (i)	 range of pHs; control of pH; same type / volume + pulp; same volume / mass of enzyme; concentration of enzyme; same temperature; same timings; filtration; ref. to using volume of juice to assess enzyme activity; allow for repeat readings; graph the results calculate mean; safety feature 	[max 6]	more than 3. R . just 'different pHs' mark is for <i>how</i> it is done. Ideally with buffers but A . adding one, two or three drops of acid / references to different acidic and/or alkaline and/or neutral solutions A . named acids and / or alkalis.
(ii)	orientation of axes axes labels; rise and fall;	[3]	enzyme activity / volume of juice in cm ³ or ml [y] and pH [x]
	[Total: 20]		

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0610	51

Question	Mark scheme		Additional guidance A. = accept, R. = reject, I. = ignore.
2 (a)	Drawing clear outline, no shading; reasonable size; recognisable detail; Labels jointed leg / joint; hairs / hooks / exoskeleton / claw / cuticle / pollen baske	t; [max 5]	Closed ends to leg. R . sketchy (fuzzy) line. R . ink leg at least 6 cm long showing leg hairs / 3 segments / claw R . fur
(b) (i)	measurement of photograph Fig. 2.1 = 20 mm	[1]	+/- 1 mm 19, 20, 21
(ii)	calculation – <u>photograph size in mm / cm</u> magnification; actual size;	[2]	ecf. $0.038 - 0.04 - 0.042$ or 4×10^{-2} correct answer with no working -2 marks. correct working with wrong answer -1 mark. correct answer with wrong working -1 mark.
(c) (i)	iodine solution; brown to blue/black; Benedict's solution / test / correct chemicals / Clinistix; heat; expected colour change; safety – in water bath / tongs, etc;	[4]	I. reference to 'warming' safety point for either test, goggles for iodine goggles / overall / hair tied back I. gloves independent marking, one mark for each correct box in table.
(ii)	starch – no change / stays brown; – none present; reducing sugar – became red; – reducing sugar present;	[4]	A. green / yellow / orange / red I. glucose
(d)	honey bee reason - insecta / insect / insectoid; - wings / 3 pairs or 6 legs / 3 body parts of head + thorax + abdomen / 1 pair of antennae / 1 pair of compound eyes; parasite reason - arachnida; - 4 pairs of legs or 8 legs;	or [4]	Completely independent, credit observation, [not negative features]
		[Total: 20]	