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5090 BIOLOGY

5090/06

Paper 6 (Alternative to Practical), maximum raw mark 40

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

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.

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

CIE is publishing the mark schemes for the May/June 2007 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

GCE O LEVEL - May/June 2007 5090 (a) (i) (elapsed) time first expt temp/°C temp/°C 1 0 20 20 2 29 24 4 34 28 6 37 1 8 39 32 10 40 34 table marks: 1 single table neatly ruled, complete and closed 3 columns only 2 all data entered in separate boxes, no units etc. 3 correct titles in column headings (time, fst and 2nd expt) 4 units correctly stated in each column (min. and °C) (ii) graph marks: 1 correctly labelled and numbered axes (esp. y-axis near origin) 2 plots clear and accurate 3 lines identified/labelled 4 curve of best fit OR ruled connections axes reversed: allow point 2 for clear plots, and point 3. bar: allow 1 and 3. (iii) 30–31°C (check if outside this range) (iv) 6 (°C) bottle absorbs heat/heat enters ; bottle absorbs heat/heat enters ; bott	r	Syllabus A	ne	Mark Sche		ge 2	Pa	
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use same volume of water ;								
plot graphs/record or tabulate data ;	ax. 5]			record or tabulate data ;	graphs/r	plot		

[Total: 23]

Page 3	Mark Scheme GCE O LEVEL – May/June 2007	Syllabus Parer 5090
(a) (i)	drawing and labelling marks:	aCamb.
	 min 7 cm, realistic, clear and clean, 3-5 veins, R: if t petiole and marginal dentation reasonable. labelling: of vein – midrib – lamina/blade – /petiole/leaf stalk . 	Syllabus 5090 too opposite.
(ii)	width of leaf = 38 mm(± 2); <u>line ruled</u> (and measured); (units once minimum)	[2]
(iii)	expression of drawing measurement over actual ; mag. accurate (\pm 0. 2) ; [Accept: x1 or x2, but probably nearer x1.5, in which case	[2] se expect 1 or 2 d.p.]
(b) (i)	 B: looks dry/curled/shrivelled/wilted/crumpled AW ; R: C: less so than leaf B/side folded over etc ; D: like leaf A/fresh/normal/not curled etc ; R:turgid etc 	
(ii)	ref. transpiration/water (vapour) loss ; ref. how stomata involved/(G.cells) blocked etc ;	[2]
(c) (i)	drawing marks:	D.2
	 at least 7 cm, clear, good shape, ridges on upper side bundles reasonably drawn. 	de.
	labels: vascular bundles/veins/xylem ;	[1]
(ii)	(in xylem of) vein/midrib/petiole/vascular bundle ;	[1]
(iii)	central xylem/stained tissue indicated ;	[1]
		[Total: 17]