CAMBRIDGE
INTERNATIONAL EXAMINATIONS

JUNE 2002

GCE Advanced Level

MARK SCHEME

MAXIMUM MARK : 30

SYLLABUS/COMPONENT :9700 /5

BIOLOGY
(PRACTICAL)

UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate

Qn	G	Expected Answers	Marks	Additional Guidance
1 a i		Any two from: No cells or tissue, 5 single lines, correct orientation, no mid rib; Spongy layer > palisade layer; Palisade layer > either epidermal layers.	max 2	
		Any two from: Epidermis correctly labelled; Stomata correctly labelled; Palisade correctly labelled; Spongy (mesophyll) correctly labelled;	max 2	Labels required
1 a ii		Any two from: 3 cells only; Irregular packing, not 'bricks in wall'; Height > width;	max 2	
		Any two from: Chloroplasts; Cell walls; Nucleus;	max 2	
1 b i		Any eight from: Sunken stomata; Reduces diffusion rate / trap water vapour; Hairs; Reduces diffusion rate / trap water vapour; (Thick) cuticle; Reduces evaporation / transpiration; Curled leaf / inner foldings; Reduces external surface area / reduces diffusion rate / trap water vapour; Sclerenchyma; Reduces water loss / reduces evaporation;	max 8	1 mark for each feature and 1 for function. OWTTE Reject reduces water loss
1 b ii		Less surface area to absorb light / CO_2	1	
		Total	**17**	
2 a		Any 7 from: Place end of pond-weed under gas chamber; Open screw clip; Draw up water with syringe; Water in capillary; Set lamp at measured distance; Add sodium hydrogen carbonate / aerate; Leave to stabilise; Time; Draw up gas; Measure gas; Move lamp; Repeat procedure	max 7	Reject fill syringe with water and push. Mark 2(a) as a whole.
2 b		Any two from: temperature (of water); same pond-weed; carbon dioxide conc; PH; Time	max 2	

2 c		Any four from: As light increases so does gas production; ½ distance = 4 X rate; ref to numbers on table; ½ distance = 4 X light intensity; Ref. to limiting factor (closer than 20cm); Correct example of limiting factor. **Total**	max 4 **13**	