

IGCSE DA Biology 4437 4H Mark Scheme (Results) Summer 2008

IGCSE

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Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (b)	light / gravity;	sun / sunlight;	phototropism / geotropism	1 (1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (c)(i)	carbon dioxide + water; (or opposite) glucose + oxygen; (or opposite) Ignore light / chlorophyll	chemical symbols;;		2 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
2 (c)(ii)	thin; large surface area; stomata; air spaces / spongy (mesophyll);		pores / guard cells	Max 2 (2)

(Total 9 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
3	mouth / saliva; mechanical digestion / chewing / mastication / eq; amylase; ONCE Ignore carbohydrase (starch to) maltose; pancreas / pancreatic juice / eq; small intestine / duodenum / ileum; starch/maltose to glucose; maltase;			Max 6 (6)

(Total 6 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
4	vena cava; atrium / auricle; lung; valves; aorta; hepatic; glucose / sugar; glycogen;			8 (8)

(Total 8 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(i)	Dd and Dd; DD, Dd, Dd, and dd; (any order)			2 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(ii)	3:1 / 75:25 / 75% to 25% / 3 quarters to 1 quarter / eq;			1 (1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (a)(iii)	zero; both parents must be DD / dd parents are sterile / neither parent has d/recessive allele; ignore term gene			2 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
7 (b)	bigger surface area to volume ratio; lack insulation/fat; lose (more) heat; maintain body temperature; respiration;			Max 2 (2)

(Total 7 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (a)	glucose / $C_6H_{12}O_6$; carbon dioxide/ CO_2 + ethanol/alcohol/ C_2H_5OH ; ignore energy	chemical symbols		2 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (b)(i)	gene / DNA / allele (for enzyme); cut; restriction / endonuclease; plasmid / vector / gene gun / phage / virus; ligase; gene / DNA / allele <u>into yeast</u> ;			Max 4 (4)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
8 (b)(ii)	enzyme / amylase; digests starch / less starch / starch to sugar;			2 (2)

(Total 8 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
9	bacteria / named bacteria; ammonia/ammonium (cpds) to nitrite/nitrate / nitrite to nitrate; protein / amino acids / growth;			(3)

(Total 3 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (a)	energy / insulation / cell membranes / neurones / growth / making new cells /eq;	keep warm / eq		1 (1)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (b)	respiration / heat / excretion / egestion / movement / uneaten / indigestible;;			Max 2 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
10 (c)	nitrates / mineral ion(s) / named mineral ion(s) / eq; growth of plants / algal bloom; <u>eutrophication</u> ; light blocked / less photosynthesis; death of organisms (plant/fish); bacteria / microorganisms / eq; oxygen depletion /eq; respiration;			Max 5 (5)

(Total 8 marks)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
12 (c)(i)	less pressure / flow speed; larger lumen / eq; closer to surface / easier to see / eq; thinner wall / easier to penetrate;	converse		Max 2 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
12 (c)(ii)	diffusion; high conc. to low conc. / conc.gradient;			2 (2)

Question Number	Correct Answer	Acceptable Answers	Reject	Mark
12 (c)(iii)	urea; carbon dioxide; water;		toxins / hormones / glucose / lactic acid	Max 2 (2)

(Total 17 marks)

PAPER TOTAL 90 MARKS