

# **Environmental and Land-Based Science**

General Certificate of Secondary B493/01

Management of the Natural Environment

## **Mark Scheme for June 2010**

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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 should be read in conjunction with the published question papers and the Report on the Examination.

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Question		Expected Answer	Mark	Rationale/Additional Guidance
1		C soil	1	
2		anywhere that touches grass or plants	1	REJECT if P touches an animal
3		space and water [any order]	2	
4		3 add distilled (deionised) water 6 compare with colour chart	1 1	
5		B nitrate	1	
6		C spraying	1	
7		C there is safety in numbers	1	
8		D GM crops might breed with wild species	1	
9		roots force / grow into / rocks	1	ALLOW 'acids' produced by plant roots
10	a	short so strong / powerful to crush / sharp edges to slice / point to pierce	1	ALLOW sharp / strong
	b	green colour / wings for flight / claws for gripping branches	1	ACCEPT camouflage
11		less crop damage / less soil damage	1	NOT references to 'saves time'
12		temperature; ventilation; light; water supply	2	NOT pest control / feeding ACCEPT heat / sunlight

Question		Expected Answer	Mark	Rationale/Additional Guidance
13		laying does not cause hedge damage / allow disease to enter; encourages growth for habitats; biodiversity; maintains the historical landscape; results in dense base / better barrier	2	ACCEPT visual reference NOT pollution from machinery
14	a	poisons other organisms that eat it / poison goes into food chain	1	
	b	place in limited entry containers / mix with other chemicals that only slugs like / colour blue to put other animals off	1	ACCEPT reduced quantity / put where slugs are OWTTE
15	a	treatment does not rely on chemicals / no environmental side effects	1	NOT natural
	b	acts as a mulch / prevents light getting to weeds	1	
16	a	hazel dormouse	1	
	b	harvest mouse	1	
	c	mountain hare	1	
17		there is no significant difference in the figures	1	
18	a	dairy	1	
	b	dairy sheep [any order]	1	

Question		Expected Answer	Mark	Rationale/Additional Guidance
19		coal / gas / oil running out – finite resource; population increasing; emerging nations increasing demand; modern technology requires energy; over reliance on fossil fuels – not enough dev of alternatives	3	
20		yes – RSPB aim is to conserve; reintroduction not new species; aids biodiversity no – should conserve current endangered species: there are plenty worldwide; disturb current ecological equilibrium	2	no mark for yes / no – both marks for reasons
21		definition – growing same crop in same place  effects – visual pollution; hedgerow destruction; soil exhaustion; reduces biodiversity	1  2	ACCEPT pest numbers increase / disease can affect all crop
<b>Total</b>			<b>36</b>	

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