Rewarding Learning

General Certificate of Secondary Education
2010–2011

Science: Single Award (Modular)

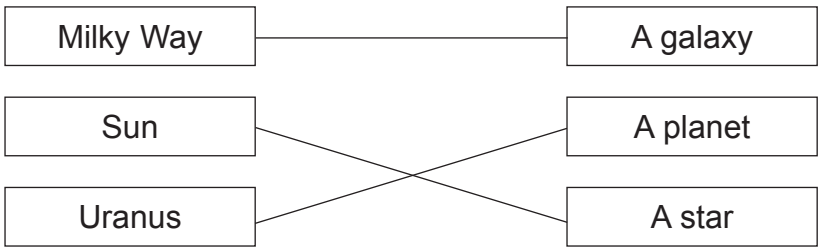
Road Safety, Radioactivity and Earth in Space Module 6

Foundation Tier

[GSC61]

FRIDAY 20 MAY 2011, AFTERNOON

MARK SCHEME

			AVAILABLE MARKS
1	**(a)**	 All 3 correct = 2 1 or 2 correct = 1 [2]	
	(b) **(i)**	Neptune [1]	
	(ii)	Anticlockwise direction [1]	
	(c)	Solar system; Earth [2]	
	(d)	life on other planets/outside Earth/life in space [1]	7
2	**(a)**	**A** – neutron **B** – electron [2]	
	(b) **(i)**	Frances	
	(ii)	Colin	
	(iii)	George [3]	
	(c) **(i)**	Radon [1]	
	(ii)	Medical/Nuclear/X Rays [1]	
	(iii)	background [1]	
	(d)	kill cells/cancer/kills tissues/mutations [1]	9
3	**(a)** **(i)**	All 3 bars correct [2] 2 correct [1]	
	(ii)	Braking distance increases/implied [1]	
	(iii)	Does not affect thinking distance [1]	
	(b)	Seat belts; airbag [2]	6
4	**(a)** **(i)**	B [1]	
	(ii)	A [1]	
	(iii)	steady speed [1]	

			AVAILABLE MARKS
(b)			

Force	Useful or Nuisance
Friction on the rider from air	nuisance
Friction on the wheel rim when using the brakes	useful
Friction on the feet from the pedals	useful
Friction on the tyre from the road	useful

All 4 correct [2]
2 or 3 correct [1] [2]

(c) **(i)** 1st part of graph [1] (accuracy $\pm \frac{1}{2}$ square)
2nd part of graph [1] (accuracy $\pm \frac{1}{2}$ square)
consequential on first part [2]

(ii) 30/4 [1]
7.5 m/s [2] [2] 9

5 **(a)** Heat [1]

(b) **(i)** how good a device is at transferring energy/changing energy [1]

(ii) 5/25 [1]
0.20/20% [2] [2]

(c) They require less electrical energy; fewer fossil fuels are burnt to produce electricity; less carbon dioxide produced/less global warming/less greenhouse effect. [3] 7

6 **(a)** **(i)** 2129/2130 [1]

(ii) Don't know exactly what reserves are left/find more; we can't calculate how much countries are going to use each year. [2]

(b) **(i)** Provide jobs/provide cheaper fuel/don't have to import. [1]

(ii) Damage to habitats/visual pollution/dust pollution/noise pollution/loss of farmland. [1]

(c) Dead plants and animals; compressed or squashed over millions of years. [2] 7

Total **45**