Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 6_Radioactivity
Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Mark Schemes

Q1.

	Answer	Acceptable answers	Mark
(a)(i)	☒ **C** the same as the charge on the proton		**(1)**
(a)(ii)	☒ **A** electrons		**(1)**
(b)(i)	222	4 less/4fewer	**(1)**
(b)(ii)	86	2 less/2fewer	**(1)**
(c)	A description including **two** of: • Kill/damage cells(1) • affecting DNA (1) • (causing) mutation (1) • by ionisation (1) • make cell reproduce rapidly (1) • cause cancer (1) • (radiation) burns (1) • (radiation) sickness (1)		**(2)**
(d)	An explanation linking any suitable precaution to a sensible reason: Eg lead/shielding (1) (because it) stops/absorbs radiation (1) Use of radiation meters (1) measure/warn of radiation received (1) put up signs (1) (to)keep people away from radiation (1) increasing distance (1) (to)reduce intensity	source locked away for shielding (worker) leaves room inverse square law	**(2)**

Downloaded from www.merit-minds.com

	(1) to reduce dose(1) by limiting the number of X-rays taken (1)		

Downloaded from www.merit-minds.com

Q2.

Question Number	Answer	Additional guidance	Mark
	substitution (1) $\frac{1.6726 \ (\times 10^{-27})}{9.1094 \ (\times 10^{-31})}$ evaluation (1) 1836 evaluation to 2 sf (1) 1800	Allow 1 mark for answers that round to 1.836 to any power of ten for this mark 1.836×10^3 OR 1.80×10^3 accept 1840 or any rounding of 1836.125 1.8×10^3 **any number** shown to 2 sf gets this mark award full marks for the correct answer without working	**(3)**

Downloaded from www.merit-minds.com

Q3.

Question number	Answer	Mark
	• evidence of division of activity by 2 (1) • 120 (Bq) (1)	(2)

Downloaded from www.merit-minds.com

Q4.

	Answer	Additional guidance	Mark
(i)	260 (g)		(1) AO2

	Answer	Additional guidance	Mark
(ii)	(54 days is) 3 half-lives (1) 65 (1)	260 ÷ 2 (÷ 2) or 520 ÷ 2 ÷ 2 (÷ 2) 18, 36, 54 (represents 3 half-lives) 54/18 = 3 (half-lives) ecf answer to 6ci ÷ 4 130 scores 1 mark award full marks for the correct answer without working	(2) AO2

Downloaded from www.merit-minds.com

Q5.

Question number	Answer	Additional guidance	Mark
	$\frac{45\,000}{5}$ (1) 9000 (kg) (1)	 award full marks for the correct answer without working	**(2)**

Downloaded from www.merit-minds.com