Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 6_ Radioactivity

Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes
Q1.

	Answer	Acceptable answers	Mark
	axes labelled correctly With label or unit (1) correct shaped smooth curve (1) line does not reach zero activity (1)	activity / Bq / count rate ignore radioactivity time/ seconds/ any time unit	**(3)**

Q2.

Question number	Answer	Additional guidance	Mark
(i)	Geiger-Müller tube	accept Geiger (counter) geiger (counter) GM (tube) gm(tube) accept any recognisable (phonetic) spelling	**(1)**

Question number	Answer	Additional guidance	Mark
(ii)	any **two** from: keep a safe distance (1) point the source away from people (1) handle the source with tongs/at a distance (1) limit exposure time/return source to store (asap) (1) use shielding (1) use of gloves (1) use of mask (1) protective clothing (1) wear a film badge/monitor (1)	use of screen Do not credit goggles	(2)

Question number	Answer	Additional guidance	Mark
(iii)	a description to include four from: take measurement without source (1) place source in front of/near/close to detector (1) increase the distance (between source and detector) (1) measure distance (from source to detector) (1) take reading from the screen/counter (1) until reading gets to background value /constant value (1) use same time for each count (1) repeat / check when down to low values (1)	 measure/account for background (count) DO NOT allow 'inside' allow reverse argument by starting with detector long way away from source allow zero as constant value mention of (count) <u>rate</u>	(4)

Q3.

Question Number	Answer	Acceptable answers	Mark
	A description including any four from: (there are) 89 particles in the nucleus (1) protons (1) (there are) 36 (protons) (1) neutrons (1) (there are) 53 (neutrons) (1) i.e. 36 protons and 53 neutrons gains four marks	ignore all references to electrons (its) {mass/nucleon} number / RAM / A_r / A <u>is 89</u> {atomic/proton} number / positive charge / Z <u>= 36</u> Numbers must be correctly linked to gain credit e.g. 36 neutrons gets 1 mark (for neutrons) 53 protons and 36 neutrons gains two marks (for protons and neutrons) 89 protons and neutrons gets 3 marks (altogether there are) 89 protons and neutrons. 36 are protons gains 4 marks	**(4)**

Q4.

Question Number	Answer	Acceptable answers	Mark
(i)	A protons B neutrons C electrons	OR A neutrons B protons C electrons	**(3)**

Question Number	Answer	Acceptable answers	Mark
(ii)	**12**		**(1)**