

Q1. (2018)

04.3	any two from:		2	AO1 6.6.2.3	
	<ul style="list-style-type: none"> ageing of the skin 	allow sunburn burn unqualified is insufficient			
	<ul style="list-style-type: none"> skin cancer 	cancer is insufficient allow mutation of genes in skin cells			
	<ul style="list-style-type: none"> eye damage 	allow blindness			

Q2. (2019)

05.2	so people are not exposed to (as much) gamma radiation	allow less gamma radiation reaches the Earth's surface	1	AO1 6.6.2.3	E
	because gamma radiation can damage human tissue	allow increases the risk of cancer or (cell) mutation allow gamma rays are ionising ignore any reference to temperature / heating of the atmosphere	1		

Q3. (2019)

a)

05.4	can cause skin cancer / premature ageing	allow sunburn allow eye / skin damage cancer on its own is insufficient	1	AO1 6.6.2.3	E
-------------	--	---	---	----------------	---

b)

05.5	risk from UV radiation is highest in July / summer	allow any sensible comparison of named months / seasons	1	AO3 6.6.2.3	E
	two correct readings from the bar chart which support their comparison	 if no other mark scored, two correct readings from the graph scores 1 mark	1		

Q4. (2020)

03.2	dose is much lower than even slight increased risk of cancer dose	allow much less than 100 mSv	1	AO3 6.6.2.3	
-------------	---	------------------------------	---	----------------	--

Q5. (2020)

03.3	to reduce the dose of radiation (they are exposed to)	allow reduce the risk	1	AO3 6.6.2.3	
-------------	---	-----------------------	---	----------------	--

Q6. (2020)

03.5	they are ionising		1	AO1 6.6.2.3	
-------------	-------------------	--	---	----------------	--

Q7. (2021)

05.6	Level 2: Scientifically relevant features are identified; the way(s) in which they are similar/different is made clear and (where appropriate) the magnitude of the similarity/difference is noted.	4–6	AO3 6.5.4.1.2
	Level 1: Relevant features are identified and differences noted.	1–3	
	No relevant content	0	
	Indicative content <ul style="list-style-type: none"> • distance travelled is the same for each aeroplane • time in the air is much greater for jet aeroplane • speed of rocket plane is much greater • speed of rocket plane is 32 times greater • radiation dose each hour greater for rocket aeroplane • radiation dose each hour is 2 times greater for rocket aeroplane • overall radiation dose is less for rocket plane • dose in jet aeroplane is 16 times greater overall • much higher risk in jet aeroplane • increased risk of skin cancer • increased risk of gene mutation and cancer <p>To access level 2, there must be a relevant calculation.</p>		