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Exam Preparation and Free Resources

Name of the Student:_____

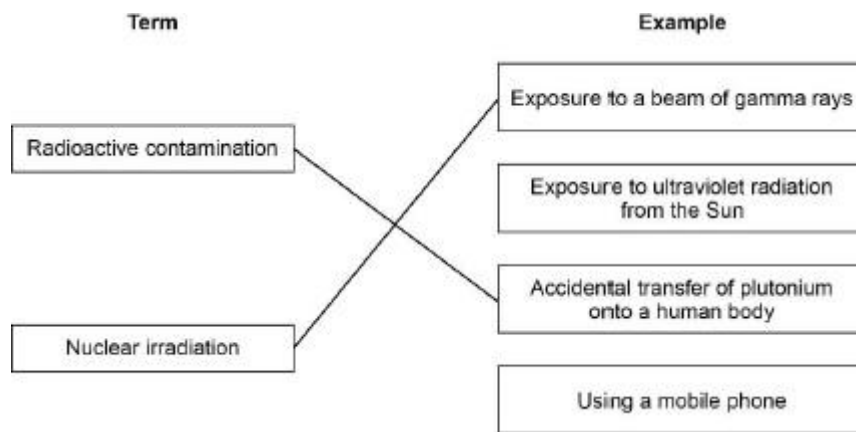**Max. Marks : 19 Marks**   **Time : 19 Minutes**

Mark Schemes

Q1.

(a)   electron

1

(b)   radius = 1.7 × 4.2

1

radius = 7.14 (femtometres)
        allow 7.1 (femtometres)

1

(c)   an alpha particle and a gold nucleus are both positively charged

1

(d)   a force of repulsion

1

(e)   A

1

(f)   tiny spheres that can't be divided

1

(g)   Bohr

1

[8]

Q2.

(a)   protons
              this order only

1

neutrons

1

(b)   the time taken for half the nuclei in a sample to decay

1

(c)   carbon-18

1

(d)

Term		Example
Radioactive contamination		Exposure to a beam of gamma rays
		Exposure to ultraviolet radiation from the Sun
		Accidental transfer of plutonium onto a human body
Nuclear irradiation		Using a mobile phone

1 mark for each correct line

additional line from a box on the left negates the mark for that box

2
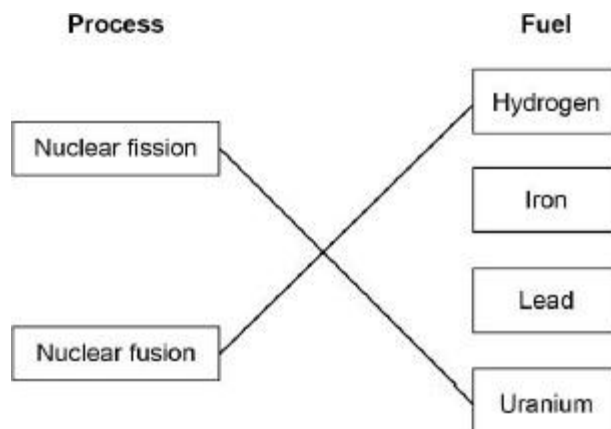
(e)   to remove radioactive dust from their shoes

1

(f) $$\text{number of days} = \frac{0.072}{0.00050}$$

1

number of days = 144

1

(g)

Process		Fuel
Nuclear fission		Hydrogen
		Iron
		Lead
Nuclear fusion		Uranium

1 mark for each correct line

additional line from a box on the left negates the mark for that box

2

[11]