	* Radioactivity *				
Q-1)	Rutherford's model & of particle scattering.				
	* The oc particle source was encased in metal with a small				
	aperture, allowing a fine beam of a particles to				
	* Air was pumped out to leave a vacuum; & particles				
V	are absorbed by a few cm of airc.				
	* Gold was chosen because it's malleable; can be made into				
	thin Sheets.				
	* The or particles were detected when they hit a solid				
	'scintillating' material.				
andere en alleman, mentionem communication and definition of communication in a second					
→	Most a posticles passed straight through, without being				
	affected.				
	-> most of the nucleus is empty space.				
	interest of the treatment is employ of the				
→	some were backscattered				
	-> most of the mass of the atom is concentrated in a fing				
	space.				
	Particle mass charge.				
	proton 1 +e				
	neutron 1 0				
	electron 0.0005 -e				
(2-2)	Calculating density of a proton				
ን					
	$mass = 1.67 \times 10^{-27} \text{ kg}$				
	4adius = 0.8 × 10-15 m				

volume = 4	1/3TT (3				
= 4)	3T × (0.8 × 10-1	5)3			
density = m	nass = 7	1.8 × 10 ¹⁷ Kar	n-3		
Vo	olume	-	A	A	
Assumptions	•			20.00	
•		atom is so	Oberical		
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What are	isotopai)			48	
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ACULIO 10	macs	chauge	coed	nanet-gration	
- Facilities	11/002	chage	SPECCI	perior ranon.	
Œ	4	+2e	10 ⁶ m/s	paper	
B	1840	-e	108 mls	thin aluminium	
*		7 4	221 209 1		
X	0	0	3×108m1s	thick lead	
	Are a walker was to did account to a walker party of the same and a second or any a second or any a second or a			men contraction	
or payticle	has a hinho	H mace acho	THOS & ic	slower than B	
	density = m density = m Assumptions The en what are Isotopes are of protons, isotop physical pr Ionising ro Ionisation is t What is a Pro Particle A	= 4/3TT × (0.8 × 10) = 2.14 × 10-45 m³ density = mass = 7 Volume Assumptions: ① the shape of the ② empty spaces of What are isotopes? Isotopes are nuclei of of protons, but differ to solopes have said physical properties. Ionising radiation. Ionisation is the loss or what is conserved ① Nucleon no. ② Proton no. ③ mass energy Particle mass	= 4/3 \tau \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	= 4/3TT × (0.8 × 10 ⁻¹⁵ m ³ = 2·14 × 10 ⁻⁴⁵ m ³ density = mass = 7·8×10 ¹⁷ kgm ⁻³ volume Assumptions: O the shape of the atom is spherical © empty spaces are not considered What are isotopes? Isotopes are nuclei of the same element, hav of protons, but different no of neutrons. * Isotopes have same chemical-properties. Ionising radiation. Ionisation is the loss or gain of electrons What is conserved O Nucleon no. © Proton no. © a mass energy Particle mass charge speed A +2e io ⁶ m/s	

Date:

	is more likely to cause ionisation.
	a decay
	$\frac{A}{z} \times \frac{A-4}{z-2} + \frac{4}{2} He$
	B decay is investigated and the second and the
0	$\frac{B}{z} \times \longrightarrow \frac{A}{z+1} \times + \frac{0}{1} e + \overline{v}$ anti= neutrino
	neutron -> pxoton
	$\frac{B^{+}}{z} \times \xrightarrow{A} \frac{A}{z-1} \times + \frac{0}{1}e + \sqrt{2}$ neutrino
	proton -> neutron.
(0-5)	Family of sub-atomic pareticles.
	Hadrons heptons
	-> affected by strong -> not affected by strong
	nuclear force nuclear force
	Barryons Mesons og electrons.
	4>3 quarks 4>2 quarks.
eg.	protons (uud)
	neutrons (udd)
	$*1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}$
	$*1 \text{ MeV} = 1.6 \times 10^{-13} \text{ J}$