TOPPERZ @ WORK EDUCATION CENTRE

CLASS: IGCSE VIII | TOPIC:ATOMIC STRUCTURE

SUBJECT:CHEMISTRY | TIME:30 MINUTES

1. One of the isotopes of an element X has a proton (atomic) number of 16 and a nucleon (mass) number of 32.

   (a) What is meant by the term *isotopes*?

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   (b) The other isotope is X-36. Complete the table about this isotope.

Number of protons	
Number of neutrons	
Number of electrons	
Electronic structure	

2. Study the table below.

Element	Number of		
	protons	neutrons	electrons
P	6	6	6
Q	12	12	12
R	6	8	6
S	2	2	2

   (a) Which element has the greatest mass? Explain your answer.

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   (b) Which of the two elements are isotopes? Explain your answer.

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3. The element hydrogen has three isotopes, protium, H, deuterium, D, and tritium, T. The nucleon numbers of the isotopes are one, two and three respectively.

   (a) Complete the table to show the numbers of protons and neutrons in the three nuclei.

Name	Nucleon number	Protons	Neutrons
Protium	1		
Deuterium	2		
Tritium	3		

   (b) The melting point of D_2O is 3.8°C but that of H_2O is 0°C. Suggest a reason for this difference in terms of attractive force.

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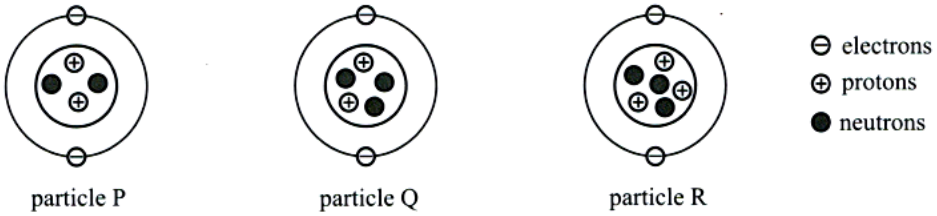
4. The diagrams below show the atomic structure of different particles.



particle P particle Q particle R

(a) (i) Name the term that describes the relationship between particles P and Q.

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(ii) Give one similarity and one difference between particles P and Q in terms.

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(b) (i) State one similarity of particles P, Q and R.

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(ii) Does particle R have the similar relationship with particle P the same way as particle Q with particle P in (a)(i)? Explain your answer.

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