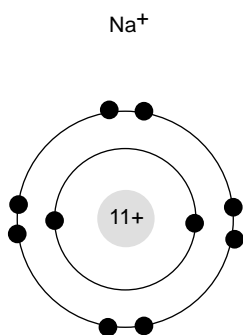
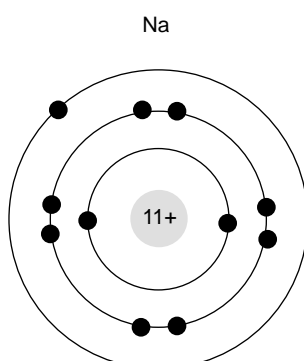


# Chemical stability (1)

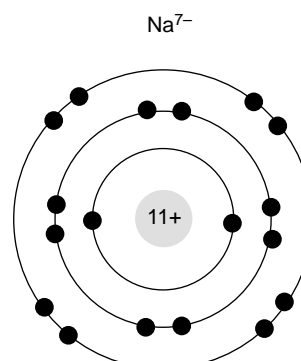
The diagrams below represent three chemical species:-



Sodium ion with electronic configuration of 2.8



Sodium atom with electronic configuration of 2.8.1



Sodium ion with electronic configuration of 2.8.8

1. Tick  one of the four statements:

- Na<sup>+</sup> is more stable than Na
- Na<sup>+</sup> and Na are equally stable
- Na<sup>+</sup> is less stable than Na
- I do not know

Why did you think this was the answer?

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2. Tick  one of the four statements:

- Na is more stable than Na<sup>7-</sup>
- Na and Na<sup>7-</sup> are equally stable
- Na is less stable than Na<sup>7-</sup>
- I do not know

Why did you think this was the answer?

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3. Tick  one of the four statements:

- Na<sup>7-</sup> is more stable than Na<sup>+</sup>
- Na<sup>7-</sup> and Na<sup>+</sup> are equally stable
- Na<sup>7-</sup> is less stable than Na<sup>+</sup>
- I do not know

Why did you think this was the answer?

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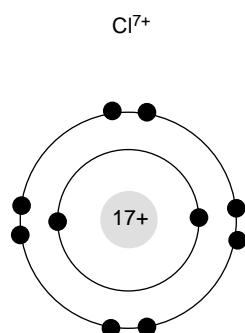
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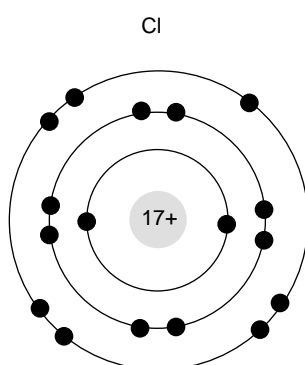
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# Chemical stability (2)

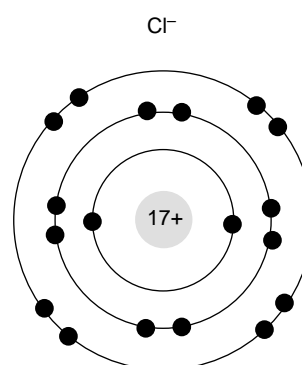
The diagrams below represent three chemical species:



Chloride ion with electronic configuration of 2.8



Chlorine atom with electronic configuration of 2.8.7



Chloride ion with electronic configuration of 2.8.8

4. Tick  one of the four statements:

- $\text{Cl}^{7+}$  is more stable than  $\text{Cl}$
- $\text{Cl}^{7+}$  is more stable than  $\text{Cl}^-$
- $\text{Cl}^{7+}$  is less stable than  $\text{Cl}$
- I do not know

Why did you think this was the answer?

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5. Tick  one of the four statements:

- $\text{Cl}$  is more stable than  $\text{Cl}^-$
- $\text{Cl}$  and  $\text{Cl}^-$  are equally stable
- $\text{Cl}$  is less stable than  $\text{Cl}^-$
- I do not know

Why did you think this was the answer?

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6. Tick  one of the four statements:

- $\text{Cl}^-$  is more stable than  $\text{Cl}^{7+}$
- $\text{Cl}^-$  and  $\text{Cl}^{7+}$  are equally stable
- $\text{Cl}^-$  is less stable than  $\text{Cl}^{7+}$
- I do not know

Why did you think this was the answer?

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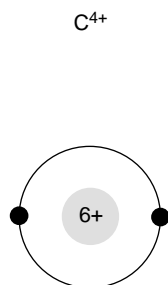
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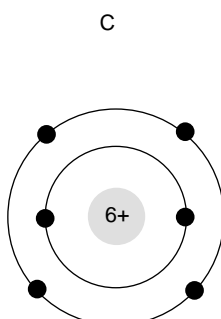
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# Chemical stability (3)

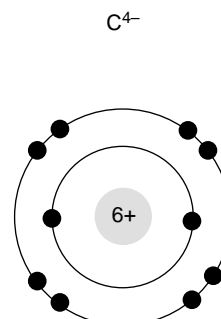
The diagrams below represent three chemical species:-



Carbon ion with electronic configuration of 2



Carbon atom with electronic configuration of 2.4



Carbon ion with electronic configuration of 2.8

7. Tick  one of the four statements:

- $C^{4+}$  is more stable than C
- $C^{4+}$  and C are equally stable
- $C^{4+}$  is less stable than C
- I do not know

Why did you think this was the answer?

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8. Tick  one of the four statements:

- C is more stable than  $C^{4-}$
- C and  $C^{4-}$  are equally stable
- C is less stable than  $C^{4-}$
- I do not know

Why did you think this was the answer?

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9. Tick  one of the four statements:

- $C^{4-}$  is more stable than  $C^{4+}$
- $C^{4-}$  and  $C^{4+}$  are equally stable
- $C^{4-}$  is less stable than  $C^{4+}$
- I do not know

Why did you think this was the answer?

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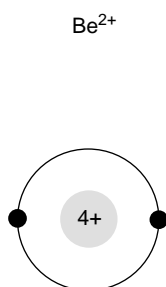
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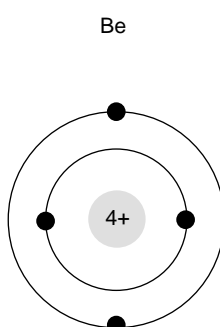
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# Chemical stability (4)

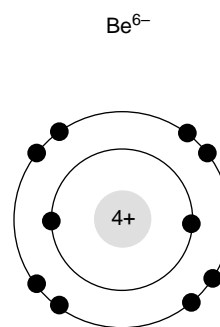
The diagrams below represent three chemical species:-



Beryllium ion with electronic configuration of 2



Beryllium atom with electronic configuration of 2.2



Beryllium ion with electronic configuration of 2.8

10. Tick  one of the four statements:

- $\text{Be}^{2+}$  is more stable than Be
- $\text{Be}^{2+}$  and Be are equally stable
- $\text{Be}^{2+}$  is less stable than Be
- I do not know

Why did you think this was the answer?

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11. Tick  one of the four statements:

- Be is more stable than  $\text{Be}^{6-}$
- Be and  $\text{Be}^{6-}$  are equally stable
- Be is less stable than  $\text{Be}^{6-}$
- I do not know

Why did you think this was the answer?

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12. Tick  one of the four statements:

- $\text{Be}^{6-}$  is more stable than  $\text{Be}^{2+}$
- $\text{Be}^{6-}$  and  $\text{Be}^{2+}$  are equally stable
- $\text{Be}^{6-}$  is less stable than  $\text{Be}^{2+}$
- I do not know

Why did you think this was the answer?

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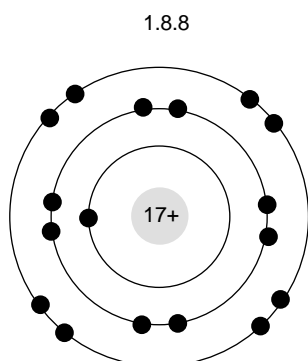
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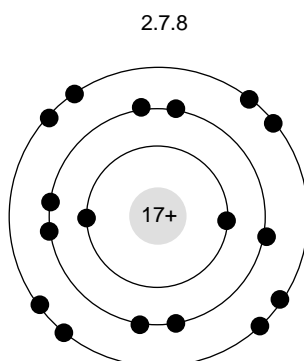
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# Chemical stability (5)

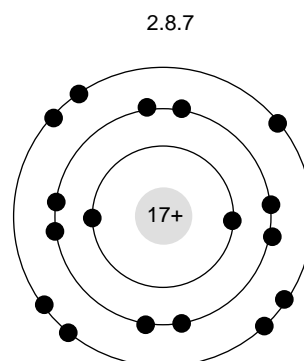
The diagrams below represent three chemical species:-



Chlorine atom with electronic configuration of 1.8.8



Chlorine atom with electronic configuration of 2.7.8



Chlorine atom with electronic configuration of 2.8.7

13. Tick  one of the four statements:

- 1.8.8 is more stable than 2.7.8
- 1.8.8 and 2.7.8 are equally stable
- 1.8.8 is less stable than 2.7.8
- I do not know

Why did you think this was the answer?

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14. Tick  one of the four statements:

- 2.7.8 is more stable than 2.8.7
- 2.7.8 and 2.8.7 are equally stable
- 2.7.8 is less stable than 2.8.7
- I do not know

Why did you think this was the answer?

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15. Tick  one of the four statements:

- 2.8.7 is more stable than 1.8.8
- 2.8.7 and 1.8.8 are equally stable
- 2.8.7 is less stable than 1.8.8
- I do not know

Why did you think this was the answer?

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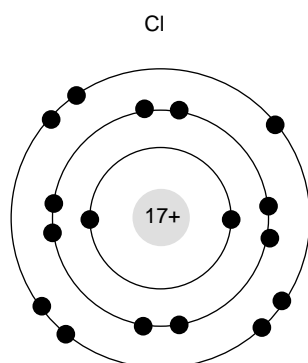
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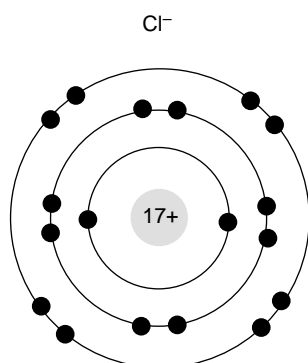
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# Chemical stability (6)

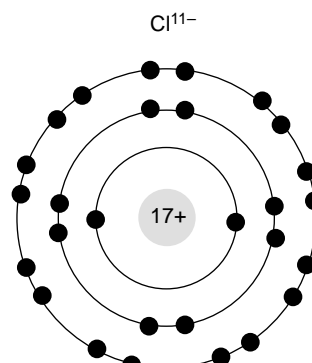
The diagrams below represent three chemical species:



Chlorine atom with electronic configuration of 2.8.7



Chloride ion with electronic configuration of 2.8.8



Chloride ion with electronic configuration of 2.8.18

16. Tick  one of the four statements:

- Cl is more stable than Cl<sup>-</sup>
- Cl and Cl<sup>-</sup> are equally stable
- Cl is less stable than Cl<sup>-</sup>
- I do not know

Why did you think this was the answer?

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17. Tick  one of the four statements:

- Cl<sup>-</sup> is more stable than Cl<sup>11-</sup>
- Cl<sup>-</sup> and Cl<sup>11-</sup> are equally stable
- Cl<sup>-</sup> is less stable than Cl<sup>11-</sup>
- I do not know

Why did you think this was the answer?

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18. Tick  one of the four statements:

- Cl<sup>11-</sup> is more stable than Cl
- Cl<sup>11-</sup> and Cl are equally stable
- Cl<sup>11-</sup> is less stable than Cl
- I do not know

Why did you think this was the answer?

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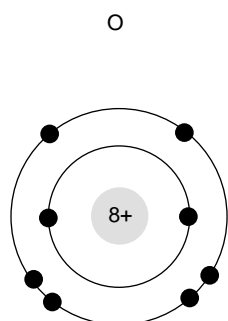
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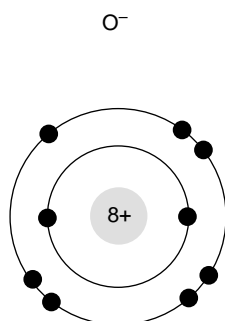
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# Chemical stability (7)

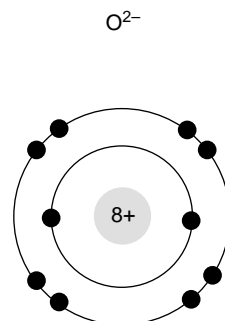
The diagrams below represent three chemical species:



Oxygen atom with electronic configuration of 2.6



Oxygen ion with electronic configuration of 2.7



Oxide ion with electronic configuration of 2.8

19. Tick  one of the four statements:

- O is more stable than  $O^-$
- O and  $O^-$  are equally stable
- O is less stable than  $O^-$
- I do not know

Why did you think this was the answer?

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20. Tick  one of the four statements:

- $O^-$  is more stable than  $O^{2-}$
- $O^-$  and  $O^{2-}$  are equally stable
- $O^-$  is less stable than  $O^{2-}$
- I do not know

Why did you think this was the answer?

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21. Tick  one of the four statements:

- $O^{2-}$  is more stable than O
- $O^{2-}$  and O are equally stable
- $O^{2-}$  is less stable than O
- I do not know

Why did you think this was the answer?

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