



A' Level Chemistry

Year 1

Unit 3: Bonding

Summer Examination Revision Pack

The questions in this pack should be attempted **AFTER** completing all other revision.



Grade Accelerator

Recall Definitions
Drawing Diagrams
Using Equations
Drawing Graphs



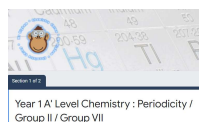
Condensed Notes

Keywords & Definitions
Key Concepts
Application
Key Skills

Quizlet

Quizlet Classes

Flashcard Based
Games
Tests & Quizzes
Keyword Spell Checker



Online Forms

Take Time to Answer
Use Paper & Calculator
Work It Out
Review Missed Marks

Use the 3 Wave Process when completing these revision packs.



1. Complete the questions without assistance
(Can't answer a question? Leave it and move on)
2. Use your notes to fill any gaps after step 1
3. Use the mark scheme to fill in any remaining gaps.

1. Having gaps after step 1 is normal, that's why we are doing revision!

2. If your notes don't help during step 2, they are not good enough!
(Change your note taking method and try to understand the problem)
3. If you don't understand why the mark scheme answer is correct, **see Andy**.



If you struggle with the questions in the pack, **STOP!** and complete some more revision.



If you come to a complete dead-end, **STOP!** and speak to **Andy** asap.

Question	Answers		Additional Comments/Guidance	Mark
08.1	<p>This question is marked using Levels of Response. Examiners should apply a 'best-fit' approach to the marking.</p>		<p>Indicative chemistry content. Contradictions (eg molecules, IMFs, covalent bonding,) negate statements.</p>	6
	<p>Level 3 5-6 marks</p>	<p>All stages are covered and the explanation of each stage is generally correct and virtually complete.</p> <p>Answer is communicated coherently and shows a logical progression from stage 1 to stage 2 and then stage 3.</p> <p>Coherent communication requires that there is a comparison between the types of bonding and that the bonding is correct for each substance.</p>	<p><u>Stage 1- Na</u></p> <p>1a) Na has metallic bonding</p> <p>1b) there is attraction/ bonding between the positive nucleus/ ion and the <u>delocalised</u> electrons in Na</p> <p>1c) Na has a giant/lattice structure</p>	
	<p>Level 2 3-4 marks</p>	<p>All stages are covered but the explanation of each stage may be incomplete or may contain inaccuracies</p> <p>OR two stages are covered and the explanations are generally correct and virtually complete.</p> <p>Answer is mainly coherent and shows some progression from stage 1 to stage 2 and then stage 3.</p>	<p><u>Stage 2 – NaBr or NaI</u></p> <p>2a) Ionic bonding in NaBr and/or NaI</p> <p>2b) There is attraction/ bonding between the + and – ions in NaBr and/or NaI</p> <p>2c) NaBr and/or NaI have a giant/lattice structure</p>	
<p>Level 1 1-2 marks</p>	<p>Two stages are covered but the explanation of each stage may be incomplete or may contain inaccuracies</p> <p>OR only one stage is covered but the explanation is generally correct and virtually complete.</p> <p>Answer shows some progression between two stages</p>	<p><u>Stage 3 - comparison of bonding</u></p> <p>3a) The ionic bonds are stronger (or wtte) than the metallic bonds</p> <p>3b) there is stronger attraction (or wtte) between the + and – ions in NaBr than in NaI</p> <p>3c) since the Br⁻ ion is smaller than the I⁻ ion</p>		

07

The melting point of XeF_4 is higher than the melting point of PF_3

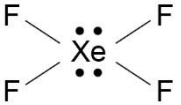
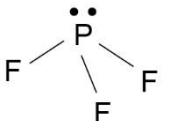
Explain why the melting points of these two compounds are different.

In your answer you should give the shape of each molecule, explain why each molecule has that shape and how the shape influences the forces that affect the melting point.

[6 marks]

*Do not write
outside the
box*



Question	Answers	Additional comments/Guidelines	Mark
07	<p>This question is marked using levels of response. Refer to the Mark Scheme Instructions for Examiners for guidance on how to mark this question.</p> <p>Level 3 5–6 marks All stages are covered and the description of each stage is generally correct and virtually complete. Answer is communicated coherently and shows a logical progression from stage 1 to stage 2 and stage 3.</p> <p>Level 2 3–4 marks All stages are covered but the description of each stage may be incomplete or may contain inaccuracies OR two stages are covered and the explanations are generally correct and virtually complete. Answer is mainly coherent and shows progression from stage 1 to stage 2 and/or stage 3.</p> <p>Level 1 1–2 marks Two stages are covered but the description of each stage may be incomplete or may contain inaccuracies, OR only one stage is covered but the explanation is generally correct and virtually complete. Answer includes isolated statements and these are presented in a logical order.</p> <p>Level 0 0 marks Insufficient correct chemistry to gain a mark.</p>	<p>Indicative chemistry content</p> <p>Stage 1 electron pairs 1a XeF₄ 4BP and 2LP around Xe 1b PF₃ 3BP and 1LP around P</p> <p>Stage 2 explanation of shapes 2a XeF₄ is square planar Or</p>  <p>2b PF₃ is pyramidal (allow tetrahedral) Or</p>  <p>2c Electron pairs repel as far as possible or Lone pair repels more than bonding pairs</p> <p>Stage 3 IMF The relative strength of the intermolecular forces in the molecules must be explained to gain maximum marks. 3a XeF₄ has vdw forces and PF₃ has dipole-dipole forces (and vdw) 3b Stronger/more intermolecular forces in XeF₄ 3c Due to larger <i>M_r</i> or more electrons or larger molecules or packs more closely together</p>	6