1. How do you calculate the number of neutrons an atom has? (1)	2. Draw a dot and cross diagram to show the bonding in sodium chloride (4)	3. What does the conservation of mass state about mass during a chemical equation? (2)	4. Draw diagrams of the plum-pudding model and Bohr model of the atom. Compare the models (4)	5. $Mg + HCl \rightarrow MgCl_2 + H_2$ Balance this equation and then state which species have been oxidised and reduced (4)	6. Mendeleev originally ordered the periodic table by atomic mass. What is it now ordered in? (1) Why did he leave gaps in the periodic table? (1)	7. What is a displacement reaction? (2)
8. Explain why ionic compounds: a) Have high melting and boiling points b) Can conduct electricity when molten or in solution (4)	9. Why can carbon be used to extract copper but not to extract potassium? (3)	10. Sketch the energy profile diagram for an exothermic reaction. Include the labels: products, reactants, activation energy, energy releases (5)	11. Describe and explain the trend in reactivity of group 1 metals (5)	12. What does OIL RIG stand for? (2)	13. Why is a polystyrene cup and lid used during a temperature changes practical? (1)	14. Between which types of atoms does covalent bonding occur? (1)
15. Is bond breaking an endothermic or exothermic process? (1)	16. Describe the bonding in a pure iron nail (3)	17. In which case could the mass in a reaction appear to change? Why?(2)	18. Why do simple covalent molecule have low boiling points? (2)	19. Describe and explain the reactivity of group 7 elements (5)	10. Describe and explain the properties of diamond (6)	21. Write the ionic equation for neutralisation. Include state symbols (2)
22. Calculate the number of moles in 16g of Mg (2)	23. What is the difference between strong and weak acids? (3)	24. Describe and explain the properties of graphite (6)	25. During a chemical reaction, a temperature decrease is observed. Is this reaction endothermic or exothermic? (1)	26. Draw an electrolysis cell. How does electrolysis extract sodium from molten sodium chloride? (5)	27. Give 2 advantages of hydrogen fuel cells over traditional batteries (2)	28. Describe how a magnesium atom would form a magnesium ion (2)
29. Draw the electronic structure of sodium (2)	30. How could you ensure that a fruity battery in the lab would produce the largest potential difference possible? (2)	31. Define these words: Element Compound Mixture (3)	32. What are the products during the electrolysis of an aqueous solution of sodium chloride? (4)	33. Calculate the number of moles in $25cm^3$ of 0.1M HCl (2)	34. What is a nanoparticle? Give 3 uses of nanoparticles (4)	Paper 1 (21st June)

Atomic structure & periodic table Bonding Quantitative Chemistry Chemical Changes Energy Changes