**Unit Test: Atoms, Elements, and Compounds**

Circle physical or chemical change for the following questions. (8 marks)

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| --- | --- |
| 1) Dissolving hot chocolate powder in hot water | Physical / Chemical |
| 2) Inflating your bicycle wheels | Physical / Chemical |
| 3) Cut apples browning in your refrigerator | Physical / Chemical |
| 4) Lighting a splint over hydrogen gas | Physical / Chemical |
| 5) Getting a hair cut | Physical / Chemical |
| 6) Adding a base to acid | Physical / Chemical |
| 7) Moist air fogging up your car's windshield | Physical / Chemical |
| 8) Cooking an egg | Physical / Chemical |
|  |  |

Draw Bohr diagrams for the following (5 marks each):

9) Si

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|  |

10) He

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11) Cl-

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12) K+

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Given two elements/polyatomic ions, write the proper chemical name and chemical formula for the following (4 marks each):

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| --- | --- | --- |
| Elements/Polyatomic ions | Chemical Name | Chemical Formula |
| 13) Lithium + Hydroxide |  |  |
| 14) Titanium (IV) + Dichromate |  |  |
| 15) Cobalt (III) + Oxygen |  |  |
| 16) Potassium + Phosphorus |  |  |
| 17) Aluminium + Hydrogen Sulphide |  |  |
| 18) Ammonium + Iodine |  |  |
| 19) Molybdenum (III) + Carbonate |  |  |
| 20) Ammonium + Sulphur  |  |  |
| 21) Silver + Perchlorate |  |  |
| 22) Gold (III) + Phosphite |  |  |

**Written Section**

23) Describe how a neutral metal and a non-metal atom form an ionic bond (2 marks).

25) How does the electron configuration of noble gases explain its properties? (2 marks)

26) To create a negatively charged ion of a particular element, electrons are added to atom. Why can't protons be taken away instead? Don't you would still get a negatively charged ion? What is wrong? Explain. (2 marks)

27) What did Niels Bohr add to Rutherford's model of the atom? (1 mark)

29) When you go hiking in the mountains or go somewhere really cold, you might notice that your half-drunken water bottle shrunk. Using the Kinetic Molecular Theory and properties of matter, explain why that happened. (4 marks)

31) Give an example of a substance undergoing a chemical, endothermic change. Is it reversible or irreversible? Provide reasons for your response. (6 marks)