

**Review Test 1**

No	Items	P																														
1	<p>Encircle the letter T, if the statement is true, and the letter F, if it is false.</p> <p>1. T F Atomic size of calcium atom is smaller than that of magnesium atom.</p> <p>2. T F As concentration of reactants increases rate of reactions increase.</p> <p>3. T F When water is electrolyzed at anode hydrogen gas is obtained.</p> <p>4. T F Equal masses of hydrogen and oxygen gases contain equal number of molecules.</p> <p>5. T F Electron configuration of Na atom is <math>1s^2 2s^2 2p^6 3s^1</math>.</p> <p>6. T F Formula of oxide of an element with 14 neutrons is similar to <math>EO_3</math>.</p>	N 0 1 2 3 4 5 6																														
2	<p>Following element symbols are given, which is found in hydrotalcite used as an antacid and in waste water treatments;</p> <p style="text-align: center;"><i>Mg, O, C, H, Al.</i></p> <p>Write down the formulae of the substances by using only elements given above, which have the following characteristics given in the table.</p> <table border="1" data-bbox="161 797 1331 1205"> <thead> <tr> <th data-bbox="161 797 229 869">No</th> <th data-bbox="229 797 1193 869">Characteristics of Substances</th> <th data-bbox="1193 797 1331 869">Chemical Formula</th> </tr> </thead> <tbody> <tr> <td data-bbox="161 869 229 904">1</td> <td data-bbox="229 869 1193 904">Substance formed by ionic bonds</td> <td data-bbox="1193 869 1331 904"></td> </tr> <tr> <td data-bbox="161 904 229 940">2</td> <td data-bbox="229 904 1193 940">In the molecules there are one sigma and one pi bonds.</td> <td data-bbox="1193 904 1331 940"></td> </tr> <tr> <td data-bbox="161 940 229 976">3</td> <td data-bbox="229 940 1193 976">Formed from one of the ion which has an inert gas electron configuration.</td> <td data-bbox="1193 940 1331 976"></td> </tr> <tr> <td data-bbox="161 976 229 1012">4</td> <td data-bbox="229 976 1193 1012">A compound formed from one of the element in alkaline earth metal.</td> <td data-bbox="1193 976 1331 1012"></td> </tr> <tr> <td data-bbox="161 1012 229 1048">5</td> <td data-bbox="229 1012 1193 1048">Substance has a metallic bonds.</td> <td data-bbox="1193 1012 1331 1048"></td> </tr> <tr> <td data-bbox="161 1048 229 1084">6</td> <td data-bbox="229 1048 1193 1084">Compound has hydrogen bonds between molecules.</td> <td data-bbox="1193 1048 1331 1084"></td> </tr> <tr> <td data-bbox="161 1084 229 1120">7</td> <td data-bbox="229 1084 1193 1120">It is a gas lighter than air.</td> <td data-bbox="1193 1084 1331 1120"></td> </tr> <tr> <td data-bbox="161 1120 229 1155">8</td> <td data-bbox="229 1120 1193 1155">It contains atoms which has <math>1s^2 2s^2 2p^6 3s^2 3p^1</math> and has amphoteric character.</td> <td data-bbox="1193 1120 1331 1155"></td> </tr> <tr> <td data-bbox="161 1155 229 1205">9</td> <td data-bbox="229 1155 1193 1205">It is an ionic compound used to obtain methane gas.</td> <td data-bbox="1193 1155 1331 1205"></td> </tr> </tbody> </table>	No	Characteristics of Substances	Chemical Formula	1	Substance formed by ionic bonds		2	In the molecules there are one sigma and one pi bonds.		3	Formed from one of the ion which has an inert gas electron configuration.		4	A compound formed from one of the element in alkaline earth metal.		5	Substance has a metallic bonds.		6	Compound has hydrogen bonds between molecules.		7	It is a gas lighter than air.		8	It contains atoms which has $1s^2 2s^2 2p^6 3s^2 3p^1$ and has amphoteric character.		9	It is an ionic compound used to obtain methane gas.		N 0 1 2 3 4 5 6 7 8 9
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3	<p>Modern application of lead (II) oxide are mostly lead based industrial glass and in computer components. It is produced by the following reaction in an experiment;</p> $PbO_2 + Sb + NaOH \rightarrow PbO + NaSbO_2 + H_2O$ <p>Balance the reaction above indicating the oxidation states of all elements, write down half reactions, and determine oxidation and reduction processes, oxidant and reductant substances.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	N 0 1 2 3 4 5 6 7																														
4	<p>Carbon monoxide is an poisonous oxide of carbon and can be converted into carbon dioxide as follows;</p> $Q + 2CO(g) \rightleftharpoons CO_2(g) + C(s)$ <p><b>A.</b> Write down the equilibrium expression of the reaction above.</p> <p>.....</p> <p><b>B.</b> Write down "increase" or "decrease" for each of the factors when applied to increase the yield of reaction.</p> <p>1. Concentration of carbon monoxide: .....</p> <p>2. Temperature: .....</p> <p>3. Pressure: .....</p>	N 0 1 2 3 4 5																														

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	C. Indicate one field of use for carbon monoxide in industry. .....																									
5	A student tries to perform an experiment with lime stone and calcium chloride mixture. <b>Solve the problem:</b> A 100 g of this mixture reacted with HCl solution, and released 4.48 L of carbon dioxide gas at STP. Calculate the mass percent of calcium chloride in the mixture. Solution: ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... <b>Answer:</b> .....	N 0 1 2 3 4 5 6 7 8 9 10																								
6	Following substances are given; <i>Potassium oxide, sulfuric acid, magnesium oxide, water, sodium chloride</i> Write down reaction equations with respect to given pattern by using <i>one</i> substance above list in each case as I. reactant and II. product.  <b>I. as a reactant;</b> A. .... + ..... → ..... + H <sub>2</sub> O B. .... + ..... → ..... + CaSO <sub>4</sub>  <b>II. as a product;</b> A. .... + ..... → ..... + Cr B. .... + ..... → .....	N 0 1 2 3 4 5 6 7 8																								
7	For each of the statement in column A select one organic substance in column B and write the letter into the blanks with respect to.  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;"><b>A</b></td> <td style="width: 10%;"></td> <td style="text-align: center; width: 50%;"><b>B</b></td> </tr> <tr> <td>..... 1. The simplest member of alkane family.</td> <td></td> <td>a. Aniline</td> </tr> <tr> <td>.....2. Belongs to homologue series with general formula of C<sub>n</sub>H<sub>2n</sub>O.</td> <td></td> <td>b. ethanoic acid</td> </tr> <tr> <td>.....3. All the carbon atoms have sp<sup>2</sup> hybridizations.</td> <td></td> <td>c. methane</td> </tr> <tr> <td>.....4. Can be used in polymerization.</td> <td></td> <td>d. acetone</td> </tr> <tr> <td>.....5. Can be identified with bromine water.</td> <td></td> <td>e. 2-methyl but-1,3-diene</td> </tr> <tr> <td>.....6. Main component of natural gas.</td> <td></td> <td></td> </tr> <tr> <td>.....7. Produced from ethyl alcohol by oxidation.</td> <td></td> <td></td> </tr> </table>	<b>A</b>		<b>B</b>	..... 1. The simplest member of alkane family.		a. Aniline	.....2. Belongs to homologue series with general formula of C <sub>n</sub> H <sub>2n</sub> O.		b. ethanoic acid	.....3. All the carbon atoms have sp <sup>2</sup> hybridizations.		c. methane	.....4. Can be used in polymerization.		d. acetone	.....5. Can be identified with bromine water.		e. 2-methyl but-1,3-diene	.....6. Main component of natural gas.			.....7. Produced from ethyl alcohol by oxidation.			N 0 1 2 3 4 5 6 7
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