



#	Ans	Workings/Remarks
1	D	Refer to the periodic table, Atomic no. : 19.
2	D	All sodium salts are soluble.
3	B	Molecules with the same relative molecular mass diffuse at the same rate.
4	D	<p>Diamond has a high melting point because it has strong covalent bonds between carbon atoms.</p> <p>Diamond does not conduct electricity because it does not have mobile ions or electrons.</p>
5	B	$2Z^{3+} + 3O^{2-} \rightarrow Z_2O_3$
6	A	X and Y form <u>ionic</u> compound with chlorine. Only covalent compound has a molecular structure.
7	B	Metal conducts electricity because it has a sea of mobile delocalised electrons.
8	B	$3\text{Fe} + 2\text{O}_2 \rightarrow \text{Fe}_3\text{O}_4$ No. of mole of $\text{Fe}_3\text{O}_4 = \frac{116}{56(3)+16(4)}$ $= 0.5$ No. of mole of Fe $= 0.5 \times 3$ $= 1.5$
9	C	In molten form, sodium ion is the only positive ion that presents, therefore it is discharged at cathode.
10	B	Copper electrodes are reactive electrodes, which dissolve to give copper (II) ions that replace copper (II) ions in electrolyte that have been discharged.
11	B	
12	B	
13	B	Acid is used up and no more Hydrogen is produced.
14	C	Sodium oxide is soluble and basic.
15	A	Oxidation state of sulfur increases from +4 in SO_2 to +6 in SO_3 . Oxidation state of oxygen increases from 0 in O_2 to -2 in SO_3 .
16	B	$\text{CO}_2 + \text{C} \rightarrow 2\text{CO}$
17	B	
18	C	
19	B	Copper and silver do not react with acid because they are less reactive than hydrogen.





20	C	Cracking of oil produces hydrogen.
21	A	
22	B	
23	B	$2\text{Cs} + 2\text{H}_2\text{O} \rightarrow 2\text{CsOH} + \text{H}_2$
24	C	
25	D	Sodium carbonate does not decompose on heating.
26	B	Iron reacts with steam to give iron oxide and hydrogen.
27	D	Zinc is more reactive than iron and does not react with water.
28	D	
29	B	Hydrogen and sulfur dioxide are not found in air, neither are they produced in the blast furnace reaction. Steam is not produced in the blast furnace reactions.
30	D	Zinc oxide is amphoteric.
31	A	
32	A	Carbon monoxide and nitrogen dioxide react to form harmless carbon dioxide and nitrogen.
33	B	
34	D	Glucose : $\text{C}_6\text{H}_{12}\text{O}_6$ Ethanol : $\text{C}_2\text{H}_5\text{OH}$
35	C	
36	C	Empirical formula is the simplest ratio of the elements found in a compound. Since addition polymerisation does not change the percentage composition of the compound, the empirical formula remains unchanged.
37	A	
38	D	<p>Pentanoic acid + butanol → butyl pentanoate</p> $ \begin{array}{ccccccc} \text{H} & \text{H} & \text{H} & \text{H} & \text{O} & & \text{H} & \text{H} & \text{H} & \text{H} \\ & & & & & & & & & \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{C} & \text{OH} & + & \text{HO}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\ & & & & & & & & & \\ \text{H} & \text{H} & & \text{H} & \text{H} & & \text{H} & \text{H} & \text{H} & \text{H} \end{array} $ <p style="text-align: center;"> </p>
39	A	Alkenes (C=C bonds) decolourise bromine, carboxylic acids (COOH bond) react with carbonate to give carbon dioxide.
40	A	Elements found in terylene (polyester) are carbon, oxygen and hydrogen.

