

0	1
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1
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 What is the concentration (in mol/dm<sup>3</sup>) of 0.5 mol of silver nitrate in 0.25dm<sup>3</sup> of solution? [1 mark]

.....

0	1
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2
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 How many moles are there in 25 cm<sup>3</sup> of 0.5 mol/dm<sup>3</sup> of KI solution [2 marks]

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0	1
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3
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 Find the volume in cm<sup>3</sup> of 0.1 mol of a 0.25 mol/dm<sup>3</sup> solution of HCl [2 marks]

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0	2
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1
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 What is the concentration in mol/dm<sup>3</sup> of a 2.9 g/dm<sup>3</sup> solution of NaCl? Give your answer to 2 decimal places. [3 marks]

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0	2
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2
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 Find the concentration in mol/dm<sup>3</sup> of a solution of 49g of sulphuric acid in 500cm<sup>3</sup> of solution? [3 marks]

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.....

0	3
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 A student dissolved 1.71g of aluminium sulfate into 250cm<sup>3</sup> of water?

0	3
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1
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 Find the concentration in mol/dm<sup>3</sup> of the solution of aluminium sulphate solution the student made. [3 marks]

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.....

0	4
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 A teacher did a titration experiment using 20 cm<sup>3</sup> of sodium hydroxide solution with a concentration of 0.18 mol/dm<sup>3</sup>.

0	4
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1
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 Calculate the mass of sodium hydroxide dissolved in this solution. [3 marks]

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.....

.....

(Total 17 marks)

**End of Question (See next page for Data Sheet)**

1		2		3		4		5		6		7		0					
7	<b>Li</b> lithium 3	9	<b>Be</b> beryllium 4	11	<b>Na</b> sodium 11	12	<b>C</b> carbon 6	13	<b>Al</b> aluminium 13	14	<b>N</b> nitrogen 7	15	<b>P</b> phosphorous 15	16	<b>O</b> oxygen 8	17	<b>F</b> fluorine 9	18	<b>Ne</b> neon 10
19	<b>K</b> potassium 19	20	<b>Ca</b> calcium 20	23	<b>Sc</b> scandium 21	24	<b>Cr</b> chromium 24	25	<b>Mn</b> manganese 25	26	<b>Fe</b> iron 26	27	<b>Co</b> cobalt 27	28	<b>Ni</b> nickel 28	29	<b>Cu</b> copper 29	30	<b>Zn</b> zinc 30
37	<b>Rb</b> rubidium 37	38	<b>Sr</b> strontium 38	39	<b>Y</b> yttrium 39	40	<b>Zr</b> zirconium 40	41	<b>Nb</b> niobium 41	42	<b>Mo</b> molybdenum 42	43	<b>Tc</b> technetium 43	44	<b>Ru</b> ruthenium 44	45	<b>Rh</b> rhodium 45	46	<b>Pd</b> palladium 46
55	<b>Cs</b> caesium 55	56	<b>Ba</b> barium 56	57	<b>La</b> lanthanum 57	58	<b>Ce</b> cerium 58	59	<b>Pr</b> praseodymium 59	60	<b>Nd</b> neodymium 60	61	<b>Pm</b> promethium 61	62	<b>Sm</b> samarium 62	63	<b>Eu</b> europium 63	64	<b>Gd</b> gadolinium 64
87	<b>Fr</b> francium 87	88	<b>Ra</b> radium 88	89	<b>Ac</b> actinium 89	90	<b>Th</b> thorium 90	91	<b>Pa</b> protactinium 91	92	<b>U</b> uranium 92	93	<b>Np</b> neptunium 93	94	<b>Pu</b> plutonium 94	95	<b>Am</b> americium 95	96	<b>Cm</b> curium 96
133	<b>Cs</b> caesium 133	137	<b>Ba</b> barium 137	138	<b>La</b> lanthanum 138	139	<b>Ce</b> cerium 139	140	<b>Pr</b> praseodymium 140	141	<b>Nd</b> neodymium 141	142	<b>Pm</b> promethium 142	143	<b>Sm</b> samarium 143	144	<b>Eu</b> europium 144	145	<b>Gd</b> gadolinium 145
223	<b>Fr</b> francium [223]	226	<b>Ra</b> radium [226]	227	<b>Ac</b> actinium [227]	228	<b>Th</b> thorium [228]	229	<b>Pa</b> protactinium [229]	230	<b>U</b> uranium [230]	231	<b>Np</b> neptunium [231]	232	<b>Pu</b> plutonium [232]	233	<b>Am</b> americium [233]	234	<b>Cm</b> curium [234]
209	<b>Bi</b> bismuth 209	210	<b>Po</b> polonium [210]	211	<b>At</b> astatine [211]	212	<b>Rn</b> radon [212]	213	<b>Fr</b> francium [213]	214	<b>Ra</b> radium [214]	215	<b>Ac</b> actinium [215]	216	<b>Th</b> thorium [216]	217	<b>Pa</b> protactinium [217]	218	<b>U</b> uranium [218]
81	<b>Tl</b> thallium 81	82	<b>Pb</b> lead 82	83	<b>Bi</b> bismuth 83	84	<b>Po</b> polonium [84]	85	<b>At</b> astatine [85]	86	<b>Rn</b> radon [86]	87	<b>Fr</b> francium [87]	88	<b>Ra</b> radium [88]	89	<b>Ac</b> actinium [89]	90	<b>Th</b> thorium [90]
204	<b>Tl</b> thallium 204	207	<b>Pb</b> lead 207	208	<b>Bi</b> bismuth 208	209	<b>Po</b> polonium [209]	210	<b>At</b> astatine [210]	211	<b>Rn</b> radon [211]	212	<b>Fr</b> francium [212]	213	<b>Ra</b> radium [213]	214	<b>Ac</b> actinium [214]	215	<b>Th</b> thorium [215]
49	<b>In</b> indium 49	50	<b>Sn</b> tin 50	51	<b>Sb</b> antimony 51	52	<b>Te</b> tellurium 52	53	<b>I</b> iodine 53	54	<b>Xe</b> xenon 54	55	<b>Cs</b> caesium 55	56	<b>Ba</b> barium 56	57	<b>La</b> lanthanum 57	58	<b>Ce</b> cerium 58
115	<b>In</b> indium 115	119	<b>Sn</b> tin 119	120	<b>Sb</b> antimony 120	122	<b>Te</b> tellurium 122	123	<b>I</b> iodine 123	124	<b>Xe</b> xenon 124	125	<b>Cs</b> caesium 125	126	<b>Ba</b> barium 126	127	<b>La</b> lanthanum 127	128	<b>Ce</b> cerium 128
112	<b>Cd</b> cadmium 112	118	<b>Pt</b> platinum 118	119	<b>Au</b> gold 119	120	<b>Hg</b> mercury 120	121	<b>Tl</b> thallium 121	122	<b>Pb</b> lead 122	123	<b>Bi</b> bismuth 123	124	<b>Po</b> polonium [124]	125	<b>At</b> astatine [125]	126	<b>Rn</b> radon [126]
65	<b>Zn</b> zinc 65	69	<b>Cu</b> copper 69	70	<b>Ni</b> nickel 70	71	<b>Cd</b> cadmium 71	72	<b>Ag</b> silver 72	73	<b>Pd</b> palladium 73	74	<b>Pt</b> platinum 74	75	<b>Au</b> gold 75	76	<b>Hg</b> mercury 76	77	<b>Tl</b> thallium 77
79	<b>Se</b> selenium 79	80	<b>Br</b> bromine 80	81	<b>Kr</b> krypton 81	82	<b>Rb</b> rubidium 82	83	<b>Sr</b> strontium 83	84	<b>Y</b> yttrium 83	85	<b>Zr</b> zirconium 85	86	<b>Nb</b> niobium 85	87	<b>Hf</b> hafnium 85	88	<b>Ta</b> tantalum 85
73	<b>Ge</b> germanium 73	74	<b>As</b> arsenic 74	75	<b>Se</b> selenium 74	76	<b>Br</b> bromine 76	77	<b>Kr</b> krypton 76	78	<b>Rb</b> rubidium 78	79	<b>Sr</b> strontium 78	80	<b>Y</b> yttrium 78	81	<b>Zr</b> zirconium 80	82	<b>Nb</b> niobium 80
31	<b>Ga</b> gallium 31	32	<b>Ge</b> germanium 32	33	<b>As</b> arsenic 33	34	<b>Se</b> selenium 34	35	<b>Br</b> bromine 35	36	<b>Kr</b> krypton 36	37	<b>Rb</b> rubidium 37	38	<b>Sr</b> strontium 37	39	<b>Y</b> yttrium 37	40	<b>Zr</b> zirconium 37
119	<b>Sn</b> tin 119	120	<b>Sb</b> antimony 120	122	<b>Te</b> tellurium 122	123	<b>I</b> iodine 123	124	<b>Xe</b> xenon 124	125	<b>Cs</b> caesium 125	126	<b>Ba</b> barium 126	127	<b>La</b> lanthanum 127	128	<b>Ce</b> cerium 128	129	<b>Pr</b> praseodymium 129
204	<b>Tl</b> thallium 204	207	<b>Pb</b> lead 207	208	<b>Bi</b> bismuth 208	209	<b>Po</b> polonium [209]	210	<b>At</b> astatine [210]	211	<b>Rn</b> radon [211]	212	<b>Fr</b> francium [212]	213	<b>Ra</b> radium [213]	214	<b>Ac</b> actinium [214]	215	<b>Th</b> thorium [215]
4	<b>He</b> helium 2	20	<b>Ne</b> neon 10	40	<b>Ar</b> argon 18	84	<b>Kr</b> krypton 36	131	<b>Xe</b> xenon 54	222	<b>Rn</b> radon 86	223	<b>Fr</b> francium 87	226	<b>Ra</b> radium 88	227	<b>Ac</b> actinium 89	228	<b>Th</b> thorium 90

1	<b>H</b> hydrogen 1
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**KEY**

1	→	relative atomic mass
<b>H</b>	→	atomic symbol
hydrogen	→	name
1	→	atomic number