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S-CHEMR



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

Scholarship 2013 Chemistry

2.00 pm Saturday 16 November 2013

RESOURCE SHEET

Refer to this sheet to answer the questions in your Question and Answer Booklet.

Check that this sheet is printed on the back.

YOU MAY KEEP THIS SHEET AT THE END OF THE EXAMINATION.

PERIODIC TABLE OF THE ELEMENTS

18

| Atomic number | | Molar mass/g mol ⁻¹ | | | | | | | | | | | | | | | | | |
|---------------|------------|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | |
| H 1.0 | He 4.0 | Li 6.9 | Be 9.0 | B 10.8 | C 12.0 | N 14.0 | O 16.0 | F 19.0 | Ne 20.2 | Na 23.0 | Mg 24.3 | Al 27.0 | Si 28.1 | P 31.0 | S 32.1 | Cl 35.5 | Ar 40.0 | | |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | | |
| K 39.1 | Ca 40.1 | Sc 45.0 | Ti 47.9 | V 50.9 | Cr 52.0 | Mn 54.9 | Fe 55.9 | Co 58.9 | Ni 58.7 | Cu 63.5 | Zn 65.4 | Ga 69.7 | Ge 72.6 | As 74.9 | Se 79.0 | Br 79.9 | Kr 83.8 | | |
| 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | | |
| Rb 85.5 | Sr 87.6 | Y 88.9 | Zr 91.2 | Nb 92.9 | Mo 95.9 | Tc 98.9 | Ru 101 | Rh 103 | Pd 106 | Ag 108 | Cd 112 | In 115 | Sn 119 | Sb 122 | Te 128 | I 127 | Xe 131 | | |
| 55 | 56 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | | |
| Cs 133 | Ba 137 | Lu 175 | Hf 179 | Ta 181 | W 184 | Re 186 | Os 190 | Ir 192 | Pt 195 | Au 197 | Hg 201 | Tl 204 | Pb 207 | Bi 209 | Po 210 | At 210 | Rn 222 | | |
| 87 | 88 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | | 114 | | 116 | | | | |
| Fr 223 | Ra 226 | Lr 262 | Rf 261 | Db 262 | Sg 263 | Bh 264 | Hs 265 | Mt 268 | Ds 271 | Rg 272 | Cn 277 | | Fl 289 | | Lv 292 | | | | |

| | | | | | | | | | | | | | | |
|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Lanthanide Series | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| | La 139 | Ce 140 | Pr 141 | Nd 144 | Pm 147 | Sm 150 | Eu 152 | Gd 157 | Tb 159 | Dy 163 | Ho 165 | Er 167 | Tm 169 | Yb 173 |
| Actinide Series | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 |
| | Ac 227 | Th 232 | Pa 231 | U 238 | Np 237 | Pu 239 | Am 241 | Cm 244 | Bk 249 | Cf 251 | Es 252 | Fm 257 | Md 258 | No 259 |