Multiple Choice Questions

| | |
|---|---|
| 1 | B |
| 2 | C |
| 3 | C |
| 4 | C |
| 5 | B |
| 6 | D |
| 7 | A |
| 8 | B |
| 9 | A |
| 10 | A |
| 11 | A |
| 12 | A |
| 13 | D |
| 14 | C |
| 15 | C |

1 a i Bung at the top of the fractionating column
ii fractionating column
iii separates the components
iv turns vapour to liquid
b i 141
ii propanoic acid
iii temperature rises

2 a i C
ii D
iii B
iv A
v D
b i 20
ii consists of two atoms only

iii atoms of the same elements having the same number of protons but different number of neutrons

c 17

$^{37}Cl$

20

35

46

$^{85}Rb^{+}$

3 a M – hydrochloric acid

N – Manganese dioxide

R – sulfuric acid

b 3

c upward delivery

4 a number of shells corresponds to period number and number of outermost electrons correspond to group number

b 2,8

c i sharing of 2 pairs of electrons

ii Since Mr of $N_2$ (28) is smaller than Mr of $O_2$ (32), nitrogen will diffuse faster than oxygen

5 a Two Na atoms lose 1 electron each. These electrons are transferred to 1 oxygen atoms.

b In molten $Na_2O$, the ions are mobile whereas in solid state ions can only vibrate about fixed positions.

c The ionic bonds in MgO are stronger than in $Na^2O$ due to higher charge in $Mg^{2+}$

d i spreading of particles from a region of high concentration to a region of low concentration

ii at higher temperature, particles gain kinetic energy and move faster

iii They have different molecular masses

6 a Chromatography

b To prevent the colourings from dissolving in the solvent

c The pen also contains coloured inks

d S

e R and T

f $R_f = \frac{distance\ travelled\ by\ spot}{distance\ travelled\ by\ solvent}$

g The value must be less than 1

h All spots are coloured