KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

SACHO HIGH SCHOOL

CHEMISTRY

PAPER 1

MARKING SCHEME

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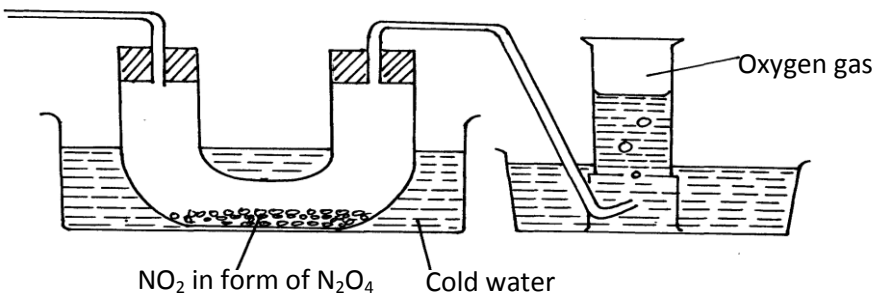
SACHO HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016
QUESTION PAPER 1
MARKING SCHEME

1. (a) Is the existence of two or more atoms with the same atomic number but different mass numbers. √(1mk)
   (b) Ration1:1 √(½mk) or 50% eachV
   $\frac{(107 \times 1) + (109 \times 1)}{2} = 108$ √(1mk) √(½mk)
2. (i) –Reaction with bromine water – it decolourizes √(½mk)
   - or $H^+/KmNO_4$- decolourizes – pressure of C = C √(½mk)
3. (a) – Red-brown fumes √(1mk)
   - Silvery grey solid √(1mk) (any one)
   (b)



4. (a) Has unstable nucleus √(1mk)
   (b) Alpha √(1mk)
   (c) T, P √(1mk)
5. SO_4^{2-} √(1mk) receives a proton √(1mk)

6. $\frac{TO_3}{TCO_2} = \frac{\sqrt{RMM\ O_3}}{\sqrt{RMMCO_2}}$

$\left(\frac{96}{TCO_2}\right)^2 = \left(\frac{\sqrt{48}^2}{\sqrt{44}}\right)$

$\frac{9216}{TCO_2^{\ 2}} = \frac{48}{44}$

$(TCO_2^{\ 2}) = \frac{44 \times 9216}{48}$

$TCO_2 = 8448$

= 91.913seconds √(1mk)

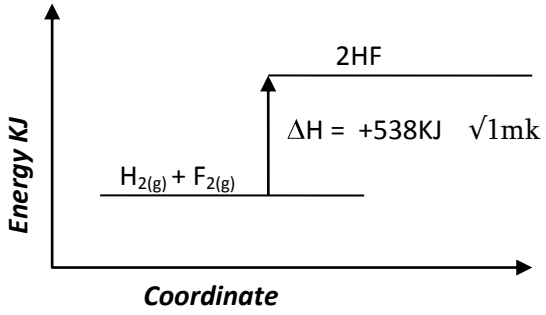
7. Al^{3+} √(1mk) or Mg^{2+} √(1mk)
   Anion – SO_4^{2-} √(1mk)

8. A is more reactive than B √(1mk) – A loses valence electrons readily than B. √(1mk)

9. - Heat √(1mk) the mixture in boiling tube
   - Iodine will sublime and solidify or undergoes deposition on the cooler parts. √(1mk)
   - Iodine is scrapped off while $BaSO_4$ remains at the bottom √(1mk)

10. Add dil. HCl to the samples √(1mk) separately in Na2D a gas with a smell of rotten eggs will be produce while in Na_2CO_3 a gas is produced which is odourless. √(1mk)

11. (a)



(b) $\frac{+538}{2}$ = + 269KJ/mol √1mk

12. The heat √(1mk)from burning Magnesium decomposes √(1mk) SO_2 to S and O_2. The O_2 √(1mk) formed supports burning of Magnesium.

13. Mass = $\frac{R.A.M \times Q}{C \times F}$

$0.44 = \frac{88 \times (32 \times 60 + 10) \times 0.5}{C \times 96500}$ √(1mk)

$C = \frac{84480}{96500 \times 0.44}$ √(½mk)

$= \frac{8448}{42460}$

$= 1.989$

$\approx +2$ √(1mk)

14. (a) Black precipitate is formed √(1mk)

(b) $H_2S_{(g)} + CuSO_{4(aq)} \longrightarrow H_2SO_{4(aq)} + CuS_{(s)}$ √(1mk)

15. (a) U.V light

(b) (i)C-H √(½mk) Cl – Cl √(½mk)

(ii) C – Cl √(½mk) H – Cl √(½mk)

16. Aluminium chloride is covalent while $MgCl_2$ is ionic √(1mk)

17. (i) Yellow √(1mk) (ii) White √(1mk)

(iii) Red-brown √(1mk) (iv) Yellow √(1mk)

18. $1cm^3 = 10.8g$

$100cm^3 = \frac{1000 \times 1.8}{1}$

= 1800g/l √(½mk)

1800g/l = 100%

$\frac{72.5 \times 1800}{100}$ = 72.5%

= 1305g/l √(½mk)

$M = \frac{g/l}{R.FM}$

$= \frac{1305}{98}$ √(½mk)

= 13.316M

19. (a) Intensity of yellow colour will increase reverse reaction is favoured. √(1mk)
(b) Shifts to the left √(1mk)

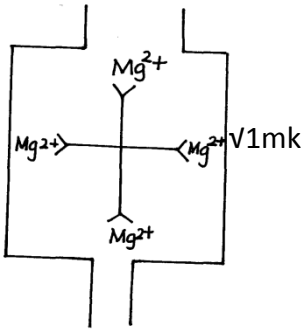
20. 34g √(½mk) = 98KJ
8.5g = $\frac{8.5 \times 98}{34}$
= 24.5KJ
24.5 = $\frac{100 \times 4.2 \times \Delta T}{1000}$ √(½mk)
$\Delta T = \frac{24.5 \times 1000}{100 \times 42}$
= $58.5^{o}V$ √(1mk)

21. Liquid √(1mk) - Its boiling point is above $25^{o}C$ √(½mk)

22. Detergent A √(1mk) - Presence of a carboxylate end √(1mk)

23. Add $NaOH_{(aq)}$ √(1mk) to the solution of Fe^{2+} and Fe^{3+} separately until in excess.
Fe^{2+}- dirt green ppt. is formed insoluble in excess. √(1mk)
Fe^{3+} - yellow red-brown ppt. formed insoluble in excess √(1mk)

24. (i)



√1mk

(ii) By adding concentrated brime from the top. √(1mk)

25. (a) Copper has higher thermal conductivity than stainless steel. √(1mk)
(b) Since steel has higher tensile strength than aluminium hence greater resistance to breaking. √(½mk)
(c) – It is less costly / cheaper √(1mk)
- Less high electrical conductivity √(1mk)