YEAR 11 CHEMISTRY

Preliminary Mid-Course Examination 2009

EXAMINATION MARKING GUIDE

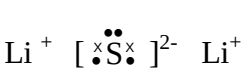
PART A: MULTPLE CHOICE

1	B	**21**	D
2	C	**22**	D
3	C	**23**	B
4	D	**24**	B
5	B	**25**	C
6	C	**26**	B
7	D	**27**	A
8	A	**28**	C
9	A	**29**	A
10	A	**30**	D
11	B	**31**	A
12	D	**32**	D
13	C	**33**	C
14	A	**34**	B
15	B	**35**	A
16	C		
17	A		
18	B		
19	D		
20	B		

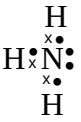
PART B: SHORT ANSWER AND EXTENDED REPONSE QUESTIONS

36.* (a)

(b)



(c)



37. **Oxidation:** $Fe(s) \rightarrow + Fe^{2+} + 2e^-$
Reduction: $Cu^{2+} + 2e^- \rightarrow Cu(s)$

38. **i) (a)(b)** No reactions observable for both Magnesium and Copper in Cold Water
ii)(a) Fizzing, bubbling, containing heating, production of gas
Equation: $Mg(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + H_2(g)$
(b) No reactions observable for Copper in Hydrochloric Acid

39. **i)** Tin
ii) Bronze: harder, corrosion resistant
Copper: malleable, soft, ductile etc.

40. – The first electron shell can hold a maximum of 2 electrons and will only allow the second shell to be filled once this maximum is achieved, therefore (1, 3) would be correctly be represented as (2, 2)
– The second shell can hold a maximum of 8 electrons and will only allow the third shell to be filled once this maximum is achieved, therefore (2, 7, 4) would correctly be represented as (2, 8, 3)

41. **a)** 6 valence electrons
b) -2 valency
c) Non-metal
d) G^{2-}

42. – The observations that could be made when a chemical reaction has occurred may include:

- Formation of a gas such as hydrogen
- Warming of container which test substances
- Solid, such as metal dissolving
- Change in colour
- Formation of bubbles on metal
- Odor, such as smell produced
- Formation of a precipitate (solid different from the reactants)

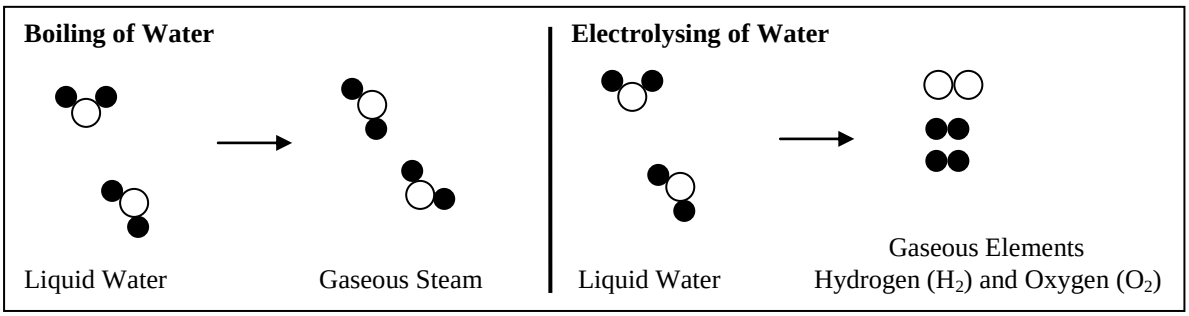
43.a) $Ca(s) + 2H_2O(l) \rightarrow Ca(OH)_2(aq) + H_2(g)$
b) $4Al(s) + 3O_2(g) \rightarrow 2Al_2O_3(s)$
c) $3Pb(NO_3)_2 + 2Cr(s) \rightarrow 2Cr(NO_3)_3(aq) + 3Pb(s)$

44. **i)** Separation Method:

- Filtration
- Evaporation
- Crystallisation

ii) Sand – insoluble, particle size
Salt – soluble, higher boiling point than water

45. – Boiling water merely only changes the state of particles from liquid to gas, but the bonds between molecules are kept connected, therefore it is only a physical change.
– However, electrolysing water breaks these bonds between oxygen and hydrogen and separates them into their elements, therefore it is a chemical change



46. – Aim (1 mark)
– Method (3 marks)
– Safety Risks (4 marks)

* Note that there may be more than 1 correct answer for part a, b, c of question 36. Teacher to check each alternative to examine its accuracy