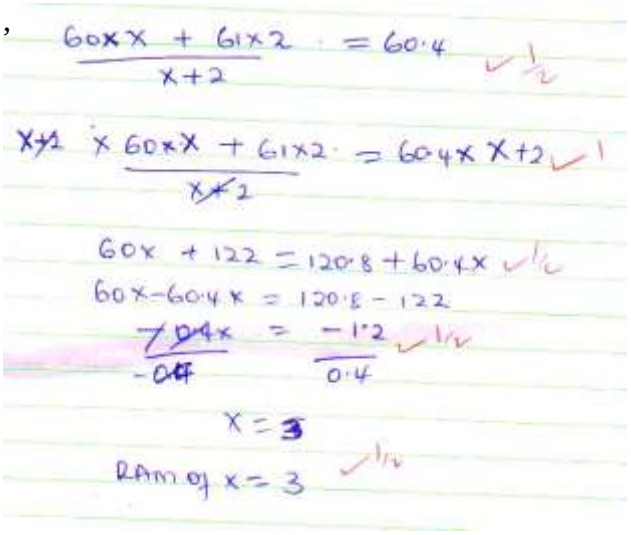
FORM 2 CHEMISTRY 2019 TERM 2 EXAM
MARKING SCHEME

1. (a) Smallest particle of an element that can take part in a chemical change. √1
   (b) Atomic number is the number of protons in the nucleus of an atom. While mass number is the sum of the protons and neutrons in an atom of an element. √1
   Both must be correct to score
2. Protons √1
   Neutrons √1
   Electrons √1
3. ,



4. (i) $\frac{24}{3}$ =8hrs √1

   The student is to take 1 tablet after every 8hrs. √1

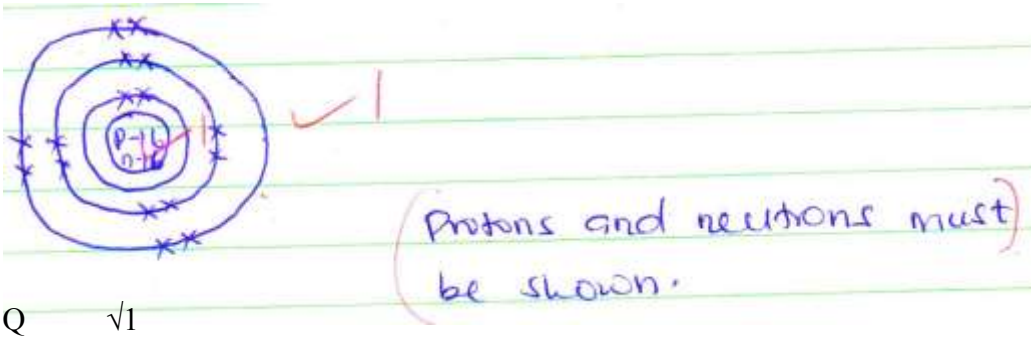
   (ii) 7:00 hrs
   8:00
   15:00 hrs √1
   8:00
   23:00 hrs √1
5. (a) Sublimation√1
   (b) fractional/ distillation √1
   (c) simple distillation/ crystallization/ evaporation √1
6. (i) NaCl √1
   (ii) Fe_2O_3 √1
   (iii) Alluminium (III) Hydroxide √1
7. (i) Do not run in the laboratory √1
   Never taste /eat anything in the laboratory to avoid poisoning √1
   Label all the chemicals you are using to avoid confusion. √1
   (ii) For easy making of observation because they are transparent √1

Enables one to determine the level of liquids held there in √1
Easy to clean √1

8. (a) put anhydrouse copper (ii) sulphate /cobalt (ii) chloride in a dry test tube $\sqrt{1}/_{2}$
   - Add two drops of the liquid $\sqrt{1}/_{2}$
   - anhydrouse copper (ii) sulphate changes from white to blue or blue cobalt (ii) chloride turns pink. $\sqrt{1}/_{2}$
   - This proves the colourless liquid is water. $\sqrt{1}/_{2}$

   (b) put the liquid in a boiling tube $\sqrt{1}/_{2}$
   - heat the liquid to boiling and determine the boiling point $\sqrt{1}/_{2}$
   - if the boiling point is sharp, the liquid is pure otherwise its impure. $\sqrt{1}/_{2}$

9. (a)(i) Y √1
   (ii) X √1
   (b)



10. (i) Q √1
    (ii) R-√1 An oxide of sodium is basic hence turns red litmus paper blue √1
    (iii) P-√1 An oxide of sulphur is acidic hence turns litmus paper red. √1
11. (a) prescription drugs are drugs that can only be obtained and used on a doctors advise. √1while over the counter drugs are drugs which are bought from a chemist or retail shops without a doctors prescription. √1
    (b) bhang $\sqrt{1}/_{2}$
    Khat $\sqrt{1}/_{2}$
    Alcohol
    (c) Hallucination √1
    Depression √1
    Memory loss
12. (a) (i) R $\sqrt{1}/_{2}$ S $\sqrt{1}/_{2}$ T$\sqrt{1}/_{2}$ U$\sqrt{1}/_{2}$
    (ii) L$\sqrt{1}/_{2}$ R$\sqrt{1}/_{2}$
    (iii) S$\sqrt{1}/_{2}$ M$\sqrt{1}/_{2}$
    (IV) K$\sqrt{1}/_{2}$ W$\sqrt{1}/_{2}$
    (v) P$\sqrt{1}/_{2}$ U$\sqrt{1}/_{2}$
    (b) Alkali metal- because their oxides dissolve to form alkaline solution.

(c)(i) Atomic radius of P is smaller√1 than the atomic radius of U because down the group there is addition of energy levels. √1

(ii) Atomic radius is larger than √1 ionic radius because it reacts by loosing electrons hence the ion formed has one energy less than its atomic radius. √1

(iii) Atomic radius of U is smaller √1 than its ionic radius because U reacts by gaining more repulsion in the energy level resulting to enlargement of energy level outwards. √1

13. (a) G- solvent front √1

H- baseline √1

(b) Ethanol/ propanone √1

(c) A√1 C√1 D√1

(d) B√1

(e) solubility of the substance on the chromatogram. √1

- stickness/ adsorption of the substance onto the chromatogram √1

(f) used in pharmaceutical industry to test purity of drugs. √1

- used in food industry to identify contaminants in food and drinks. √1

Any two appropriate

14. (a) (i) Gas X – Oxygen √1

(ii) Gas Y- Argon √1

(iii) -196^{o}C √1

(b) (i) Process A – Electrostatic precipitation. √1

(ii) Reagent B- Concentrated sodium hydroxide or concentrated potassium hydroxide√1

(iii) Substance C- Copper (II) Oxide √1

(iv) Process D Fractional distillation √1

(c) To cool the air to a liquid. √1

(d) $2Cu_{(s)} + O_{2(g)} \longrightarrow 2CuO_{(s)}$ √1

15. (i) (a) forms an ion by losing electrons hence effective pull increases √1

(b) forms ion by gaining electrons hence incoming electrons are repelled. √1

(ii) increases √1

Metallic bond strength increases from A to C. √1

(iii) Has a giant atomic structure which has very strong covalent bond. √1

(iv) Has higher number of protons hence very high nuclear charge. √1