CHEMISTRY FORM 1 MARKING SCHEME

Question	Maximum score	Student's score
1-25	80	

1(a)what is drug abuse (1mk)

-using drugs for the purpose it was not intended

- underdosing or overdosing of drugs

(b) Give two importance of studying Chemistry. (**2mks**)

- career subject

-help in manufacture of food to fight hunger

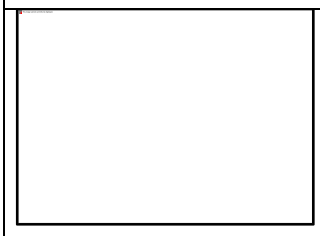
-help in manufacture of medicines to fight diseases

-help in manufacture of cheap fabrics eg nylon

-help in manufacture of plastics such as PVC for roofing, packaging and other domestic uses\

-help in manufacture of detergents such as OMO

2(a). The following are laboratory apparatus used in Chemistry. Name them and give their uses.

Apparatus (Name)	Use
 crucible (½ mk)	**(½ mk)** Used when heating solid substances trhat brequire strong heating

Deflagrating spoon  (½ mk)	**½ mk** Holding substances being burned

(b). Give two reasons why most laboratory apparatus are made of glass. 2mks

-glass is transparent and reaction taking place is visible

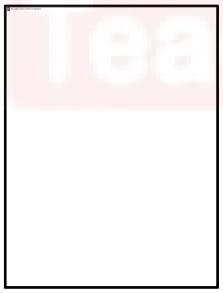
-glass is unreactive

-glass is easy to clean

3.(i) What is a flame? (**1mk**)

-mass of burning gases

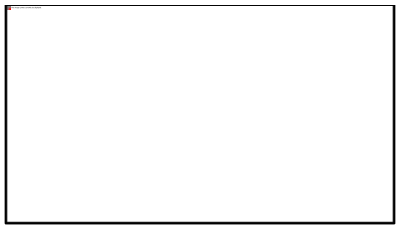
ii) A student from VUKA high school lit a Bunsen burner and got the flame shown below



a) What is the colour of the flame at part labeled A? (1mark)

-pale blue

(b). A wooden splint slipped through region B of the above flame laboratory. The splint was burnt as shown in the diagram below.



Explain why the splint was burnt the way it is shown in the diagram. (**2mk)**

-The flame is hotter at the outer part but less hot on the inner part (almost colourless)

4. Heating solids in a test tube or boiling tube is part of the task a learner is supposed to undertake in a given class experiment. Explain the two precautions a learner should observe

(2mks)

-holding test and boiling tubes with a test tube holder when heating

-never let the open end face you or anybody else because the liquid may spurt into your eyes and cause injury

5. A form one student at wanted to separate and obtain iodine and sodium chloride (common table salt) from a mixture of the two. He set the experimental set up shown below.

(a). The mixture was heated for some time and left to cool. On cooling, shiny black crystals and white residue were observed on the surface of the watch glass and in the beaker respectively. Name:

I. Shiny black crystals **(1mks)**

-iodine

II. White crystals. **(1mks)**

- sodium chloride or salt or common salt

(b). What property of iodine makes it be collected on the watch glass as shown?

-it sublimes (**1mk**)

6. Explain why water is not used as a solvent in extraction of oil from nuts. **2mks**

-oil do not dissolve in water

7.Salt is normally sprinkled on roads during winter in temperate countries

a) State and explain why salt is put on roads during winter

Acts as an impurity hence lower the melting point of ice making it melt (**2mks**)

b) Why is this practice of great concern to motorist (**1mk**)

-salt speed up rusting

8. Substance **A** is highly soluble in propane while **B** has low solubility in propane.

a) Which of the two substances will travel the shortest distance on an adsorbent material during paper chromatography? Explain **2mk**

-B

b) Which other property determine the distance travelled by the substance? **1mk**

-Stickiness or density

c)Give two applications of chromatography **1mk**

-in sports to identify banned substances oin blood or urine

-in pharmaceutical industry , to test purity of drugs

-in food industry to identify contaminants in food and drinks

-in cosmetic industry to identify harmful substances

9. The setup below was used to separate two miscible liquids Q and T

(Boling points; Q =98° C, T=78°C)

(a) Identify any 2 mistakes in the setup above **2mk**

-reversed water flow in the condenser

--no glass beads in the fractionating column

(b) Identify Distillate X **1mk**

-liquid T

10. The laboratory rules that should be applied to prevent the following accidents

a) Mistaking hydrochloric acid to be distilled water **1mk**

-label all chemicals you are using to avoid confusion

b) A student got burnt after secretly lighting up a magnesium ribbon **1mk**

-always consult your teacher before trying any experiment to avoid accidents

c) A student got severe stomach ache after eating some bread during chemistry laboratory session **1mk**

-never eat or drink anything in the lab

11.Name three apparatus that are used to measure accurate volume of liquids. (3mks)

- burette

-pipette

- volumetric flask

12.Name the best method you would use to separate the following mixtures.

a) Kerosene and crude oil (1mk)

-fractional distillation

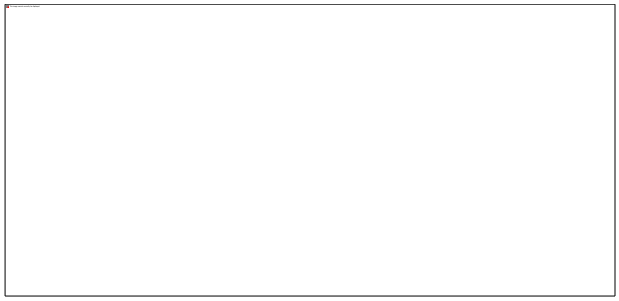
b) Salt and water. (1mk)

-simple distillation

c) Iron fillings and sulphur powder. (1mark)

-use of a magnet

13.The diagram below represents a paper chromatogram for three brands of juices suspected to contain banned food colourings.



The results showed the presence or banned food colourings in L and M only.

a) On the same diagram

i) Circle the spots which show the banned food colourings. (2mks)

-Show the solvent front. (1mks)

14.Classify the following processes as either chemical or Physical process type of change (2mks)

a) obtaining Kerosene from crude oil

-physical

b) Souring of milk.

- chemical

15.a) Give the symbols of the following elements (3mks)

i) Sodium -Na

ii) Calcium- Ca

iii) Phosphorus-P

b) Name the elements presents in the following compounds (2mks)

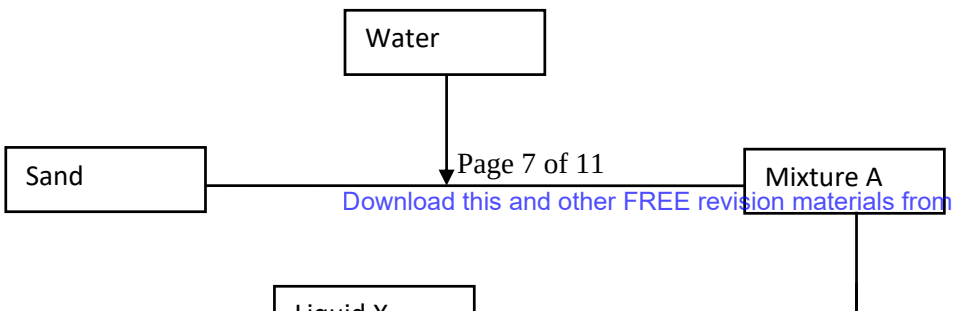
i) Zinc sulphide

-Zinc and sulphur

ii) Sodium oxide.

-sodium and oxygen

17.Study the flow chart below and answer the questions that follows.



Process B

a) Name process B. (1mark)
-filtration

b) Give one reason why it's possible to separate the mixture A above using process B. 1mark)

-sand is insoluble in water

c) Give the name for

i) Liquid X **(**1mark)
-water

ii) Solid Y **(**1mark)
-sand

18.a) If common salt is added to wax, what will be the effect on melting point of wax? (1mark)
-lower the melting point

b) When pure ethanol is heated, it changes to gas at 78.5^0C.

i) What is the name given to this temperature? (1mark)

- boiling point

(ii) What will happen to this temperature if an impurity like water is added to ethanol? (1mark)

-it will increase

19. A student mixed iron fillings with sulphur powder in a watch glass. The mixture was heated and a black solid was formed.

a) Is this a physical or chemical change? (1mark)

-chemical

b) Give two reasons to support your answer in (a) above. (2marks)

- new substance formed
- irreversible

c) Give the chemical name of the substance formed after heating sulphur and iron together? (1mark)

--iron sulphide / iron (ii) sulphide

20.. Write simple word equations for the following reactions.

(i) Magnesium and oxygen. (1mark)

-magnessium + oxygen = magnesium oxide

(ii) Carbon and oxygen (excess) 2mks.

- carbon + oxygen = carbon (iv) oxide

21.Name the process represented by the letter shown below (2mks)

a) U…sublimation……

R…deposition……

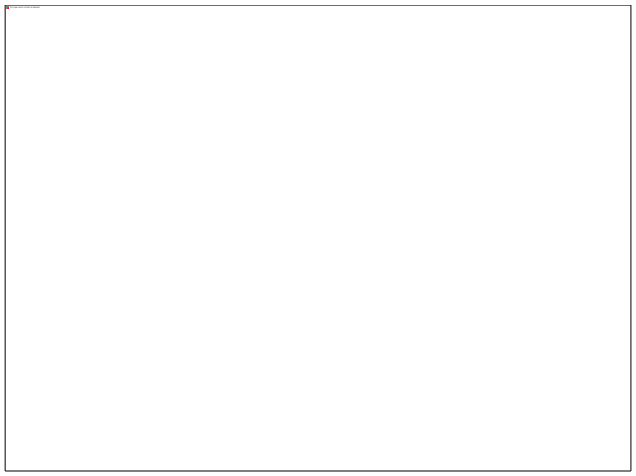
V…melting……

W…freezing/ solidification……

(b) Name two substances which undergo the process represented by R and U (2mks)

- iodine, benzoic acid, dry ice or solid CO_2, iron iii chloride, aluminium chloride

22. The diagram below shows a commonly used apparatus in a chemistry laboratory



a) Give the name of the apparatus and state its use

(2mks)

-*bunsen burner

- source of heat in the laboratory

b) State the uses of parts labeled X and Y (2mks)

X chimney- allow lab gas and air to mix

Y collar – regulate the amount of air entering the chimney

23. In an experiment to separate a mixture of two liquids A and B, a student set up the apparatus as shown below.

a) Name the apparatus. (1mk)

- separating funnel

b) Which property of the liquids make it possilble to be separated as shown(1mk)

- immiscible or different densities

c) Which other method can be used to separate the two liquids. (1mk)

-decantation

24. The graph below is a heating curve for ice. Study it and answer the questions that follow

a) Explain why there is no change in temperature in section NP (1mk)

-heat gained used to break forces of attractions

b) In what state is the water in the region: (2mks)

RS gas

PQ liquid

c) On the same axis sketch a graph that would be obtained if some salt was added to the ice before heating began. (1mk)

25 **Give two** reasons why a luminous flame is not used for heating purposes (2mks)

- less hot

- - produce smoke.