CHEMISTRY CAT 6TH NOVEMBER

Questions Responses 6 Settings Total points: 100

6 responses

Accepting responses

Summary Question Individual

2 of 6

77 of 100 points *Score released Dec 28 11:34 AM*

CHEMISTRY CAT 6TH NOVEMBER

Rules
1.start with capital letter when writing answers
2.dont space when writing chemical equations
3.in chemical equations, use (/) as the arrow between reactants and products
4. On equations, make sure you bracket the states I. E (aq)
5.dont space after your answers, and don't use a full stop after your answers.
Attempt all questions.
MR OUMA 0721342959

* Required

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NAME * / 0

Loise Macharia

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SCHOOL * / 0

Kangubiri Girls High School

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GENDER * / 0

- ○ M
- ◉ F

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CLASS * / 0

- ○ 2
- ○ 3
- ◉ 4

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✓ Define the following: Element (1mk) * 2 / 2

- ○ Two or more substances which are chemically combined
- ○ the smallest particles of an element which can chemically react
- ◉ Is a pure substance that can not be splitted further by chemical means ✓
- ○ a pure substance that can exist freely and separately

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✓ Ion (1mk) * 1 / 1

- ○ is a charged cation
- ○ is a charged anion
- ◉ is a charged atom which has reacted. ✓

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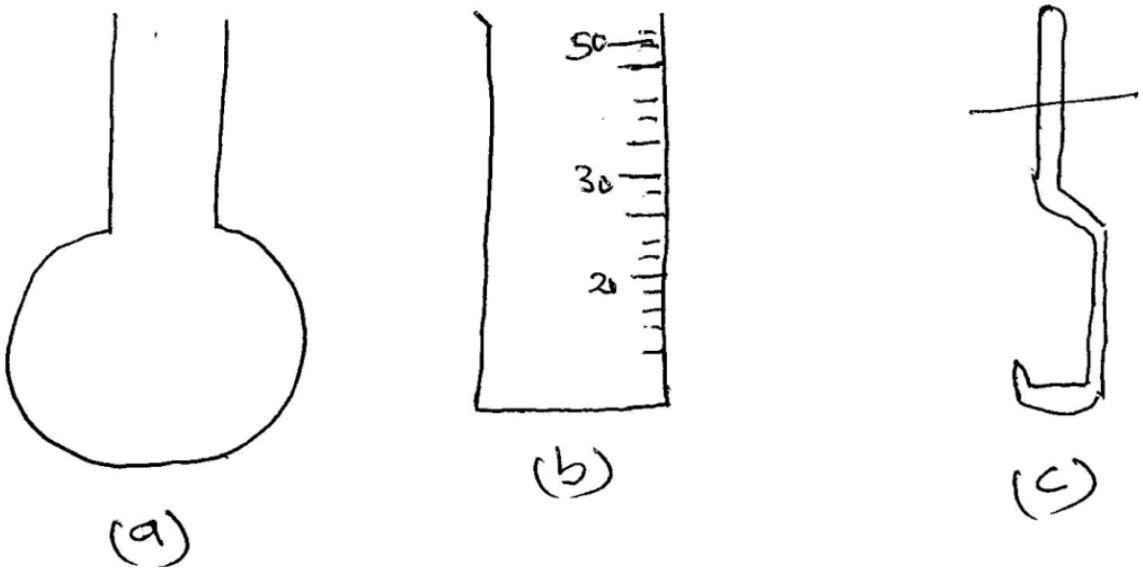
✗ i) Identify the following apparatus and give a use for each (3mks) (use (/) to separate the name of the apparatus and the use. Do not space) * 0 / 3



a) ……..Use……

a) round bottomed flask/heat liquid substances for equal heat distribution b) Measuring Cylinder/for measuring volume of liquids approximately c)deflagrating spoon/for holding substances while burning ✗

Correct answers

a) round bottomed flask/heating liquid substances

b) Measuring cylinder/Measuring volume of liquids

c) Spatula/Scooping solid substances from containers

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✗ State four sources of heat in a laboratory? * 4 / 4

Bunsen burner,stove,gas cooker, ✗

Correct answers

Bunsen burner

Gas stove

Portable burner

Candle

Electric heater

Kerosene stove

spirit lamp

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✓ Which materials is most laboratory apparatus made of? * 1 / 1

- (●) Glass ✓
- ( ) Plastic
- ( ) Metals

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ii) Name another apparatus that can be used in place of (b) (1mk) 0 / 1

Conical flask

Correct answers

Burette

syringe

Beaker

Add individual feedback

Give four reasons why most apparatus are made of glass (4mks) 0 / 4

*

- [x] They can be easily cleaned
- [ ] the glasses are catalyst to the reactions
- [x] they cannot be oxidised
- [x] the glasses do not react with most of the chemicals
- [x] they are transparent and therefore visible
- [ ] glasses are cheaper

Correct answer

- [x] They can be easily cleaned
- [x] the glasses do not react with most of the chemicals
- [x] they are transparent and therefore visible
- [x] glasses are cheaper

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1 / 1

Define the following terms

Isotope (1mk)

*

- These are atoms of the same elements in different forms but with same physical forms
- These are similar forms of an element with different physical state
- this are atoms of an element with same atomic number but different mass number ✓
- these are atoms of same element with same neutron numbers but different protons number

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1 / 1

Ionization energy (1mk)

- The maximum amount of energy required by an atom to lose or to gain it's valency number
- the minimum amount of energy that is required to remove an electron in the outermost energy level of an atom in gaseous state ✓
- the maximum amount of energy that is required to remove an electron in the outermost energy level of an atom in gaseous state

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0 / 0

Electron affinity is the ability of an atom to gain or to lose electron from it's outermost energy level. true or false (1mk)
*

- ○ true
- ◉ False

Correct answer

- ◉ true

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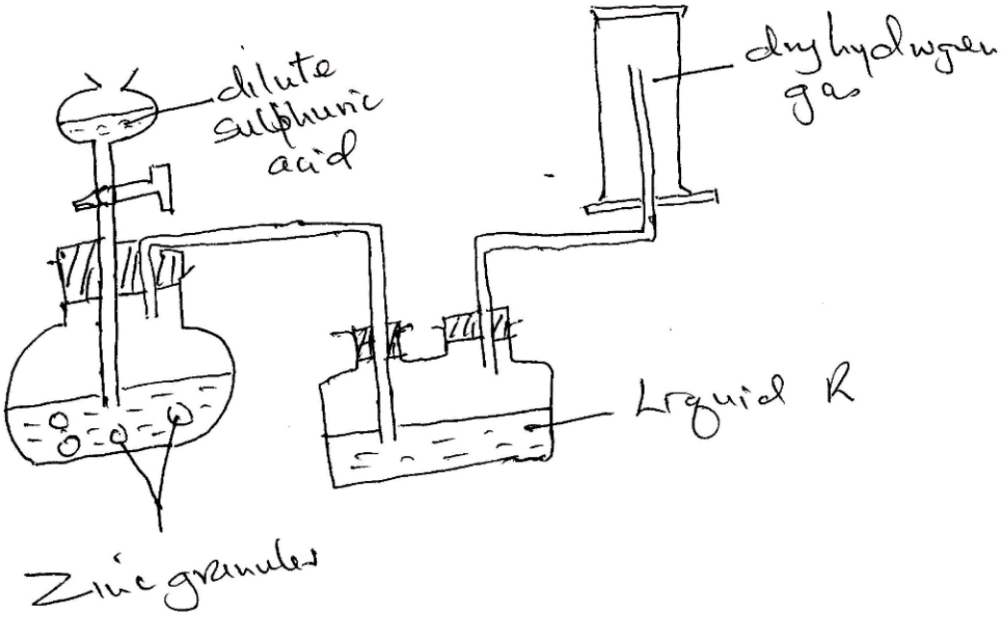
✕ Hydrogen gas was prepared in the lab. Using the following set up 2 / 2

Write an equation for the reaction taking place and balance it (2mks)

*

5. Hydrogen gas was prepared in the lab. Using the following set up



a) Write an equation for the reaction taking place and balance it (2mks)

Zn(s) + H2SO4(aq) → ZnSO4(aq) + H2O(l) ✕

Correct answer

Zn(s)+H2SO4(aq)/ZnSO4(aq)+H2(g)

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✓ Name the method used to collect the gas and give a property of hydrogen that enables it to be collected through the method respectively. (2mks) 2 / 2

*

- ○ over water method, soluble in water
- ○ over water method , insoluble in water
- ◉ upward delivery, less denser than water ✓
- ○ downward delivery, denser than water

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✓ Name liquid R and state its function in the set up (2mks) 2 / 2

*

- ○ Sulphuric (VI) acid
- ◉ Conc. Sulphuric (VI) acid ✓
- ○ Anhydrous calcium chloride

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✓ Explain why it is not advisable to use sodium metal in place of zinc metal (2mks) 2 / 2

*

- ◉ Reaction would be explosive/dangerous because sodium is very reactive ✓
- ○ Reaction wouldn't be possible
- ○ Sodium is poisonous

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✓ State two uses of hydrogen gas (2mks) 2 / 2

*

- ○ hot air balloon, oxyacetylene flame
- ○ hydrogenation, purification of water
- ◉ in harber process, manufacture of mangarine ✓

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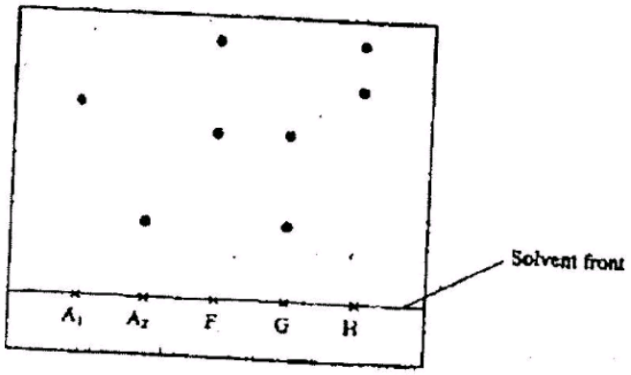
✓ Samples of urine from three participants F, G and H at an international sports meeting were spotted onto a chromatography paper alongside two from illegal drugs A1 and A2. A chromatogram was run using methanol. The figure below shows the chromatogram. 1 / 1

Identify the athlete who had used an illegal drug (1mk)
*



- (●) G ✓
- ( ) H
- ( ) F

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✓ Which drug is more soluble in methanol? (1mk) 1 / 1
*

A1 ✓

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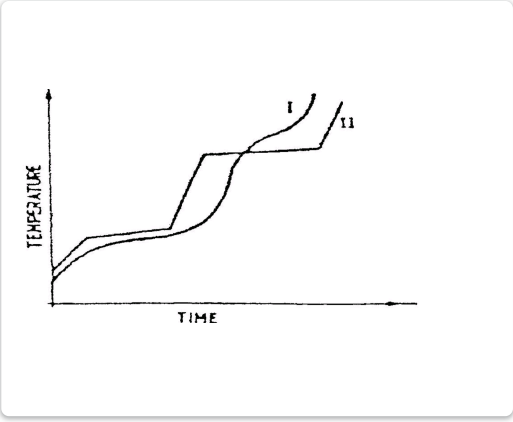
✓ The curve below represents the variation of temperature with time when pure and impure samples of a solid were heated separately. 2 / 2

Which curve shows the variation in temperature for the pure solid? Explain. (2mks)



Option 1

I

II ✓

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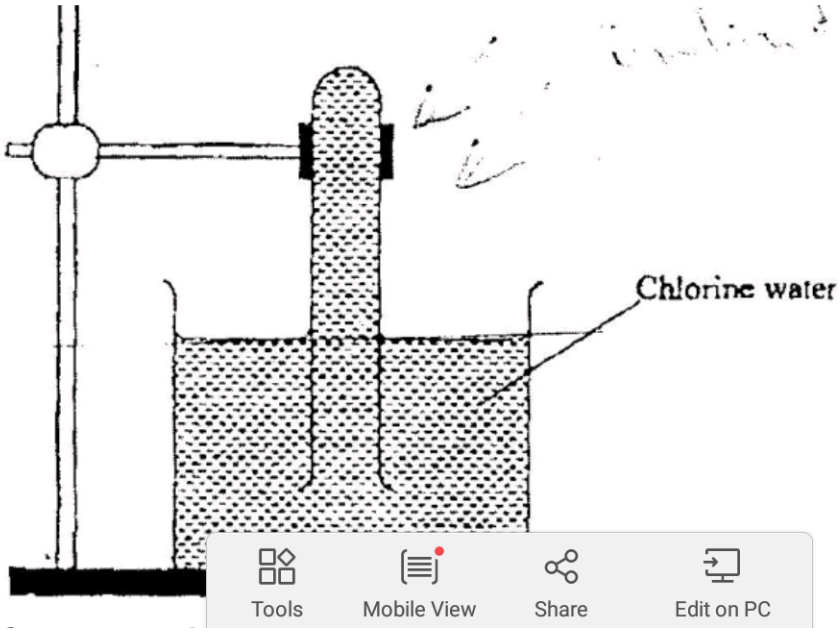
✓ In an experiment, a test-tube full of chlorine water was inverted in chlorine water as shown in the diagram below and the set up left in sunlight for one day. 1 / 1

After one day, a gas was found to have collected in the test-tube
Identify the gas (1mks)



Tools Mobile View Share Edit on PC

- ○ chlorine gas
- ◉ oxygen gas ✓
- ○ hydrogen gas
- ○ nitrogen gas

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✓ 2 / 2

How can the above gas be tested? (2mks)

*

- (●) it rekindles a glowing splint ✓
- ( ) hydrogen with air burns explosively
- ( ) chlorine and ammonia gas forms a white fumes of ammonium chloride
- ( ) Nitrogen gas, insoluble in warm watee

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✗ The table below shows some properties and electronic arrangements of common ions of elements represented by letters P to X. Study the information in the table and answer the questions that follow

2 / 2

Give the atomic numbers of the elements P and Q (2mks)
*

uestions that follow

Element	Ion	Electron arrangement	Atomic radius	Ionic radius
P	P^{2+}	2,8,8	0.197	0.099
Q	Q^{-}	2,8	0.072	0.136
R	R^{+}	2,8,8	0.231	0.133
S	S^{3+}	2,8	0.143	0.050
T	T^{2+}	2,8,8	0.133	0.074
U	U^{2+}	2,8	0.160	0.065
V	V^{+}	2,8	0.186	0.095
W	W^{+}	2	0.152	0.060
X	X^{-}	2,8,8	0.099	0.181

P 20 ;Q 9 ✗

Correct answers

20

9

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✓ Select the most reactive metallic element (1mk) 1 / 1

*

R ✓

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✓ Select 3 elements that belong to the same group of periodic table (2mks) 3 / 3

*

- [x] P ✓
- [ ] Q
- [ ] S
- [x] T ✓
- [x] U ✓
- [ ] V

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✗ Select 3 elements that would react with cold water to evolve hydrogen gas (1mk) 0 / 3

*

- [x] P ✓
- [ ] Q
- [x] R ✓
- [ ] U
- [x] V ✓

Correct answer

- [x] P
- [x] R
- [x] U
- [x] V

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✓ Why is the ionic radius of element X larger than its atomic radius? (1mk) 2 / 2

*

- (●) Form ions by gaining electrons/ Since it is a non-metal/resulting in electron-electron repulsion ✓
- ( ) It has more number of energy levels than the atom
- ( ) It has more number of valence electrons

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✗ Write an equation of the reaction between element S and Oxygen (2mks) / 2

*

4S + 3O2 → 2S2O3 ✗

Correct answer

S(s)+O2(g)-S2O3(s)

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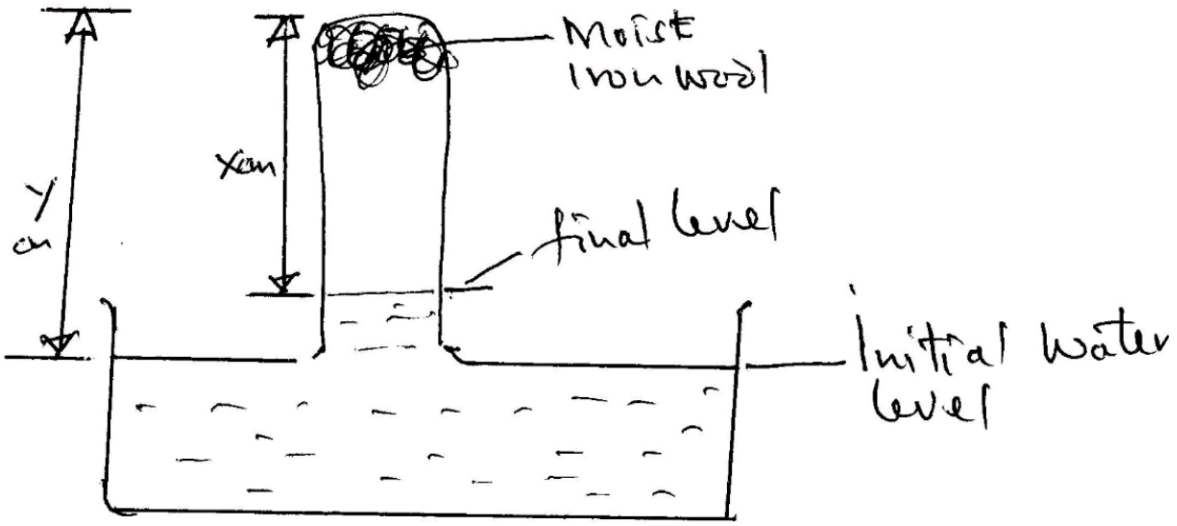
✓ Moist iron wool was inverted over water. The set up was left to stand for 2 days 2 / 2

Explain whether rusting is a physical or chemical reaction (2mks)

*



- (●) chemical ✓
- ( ) physical

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✓ State two similarities between rusting and combustion (2mks) 2 / 2
*

- (●) New substance formed ✓
- ( ) Both are reversible
- ( ) No new substance is formed

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✗ / 2

Observe the equation below
Fe2O3(s) + CO(g) Fe(s) + CO2(g)
Balance the equation (1mk)
*

Fe2O3(s) + 2CO(g) → 2Fe(s) + 2CO2 ✗

Correct answer

Fe2O3(s) + 3CO(g)/2Fe(s) + 3CO2

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✗ Select the following from the above equation / 1
Oxidizing agent (1mk)
*

Fe ✗

Correct answer

Fe2O3

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✓ 2 / 2

Reducing agent (1mk)
*

CO ✓

Add individual feedback

✓ Carbon (IV) sublimes at -78oC. It is called dry ice 1 / 1
Why is it called dry ice? (1mk)
*

- ○ it because it can sublime
- ◉ it is because it sublimes leaving no wetness behind ✓
- ○ it is because it is used in ice venders machines.
- ○ it is because it is changing from solid to gas directly without passing into liquid

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/ 0

It is used for keeping ice cream cold. Why is it preferred to ordinary ice? (2mks)
*

- (○) it is cheaper
- (◉) it sublimes leaving no wetness behind
- (○) it is a subliming substance
- (○) it is not a better coolant

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✓ Name two other substances that behave as dry ice (2mks) 2 / 2
*

- [ ] zinc
- [ ] aluminum (IV) chloride
- [x] ammonium (III) chloride ✓
- [x] benzoic acid ✓

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✗ 0 / 1

Give an industrial application of sublimation (1mk) *

Dry Ice which is a subliming substance,is used by ice cream vendors to prevent the ice cream from melting ✗

Correct answer

Extraction of zinc metal

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✓ 16An element A, has 30 protons and 35 neutrons. What is The mass number of element A? * 2 / 2

- 55
- 65 ✓
- 60
- 70

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The charge on the most stable ion of element A? *

0 / 2

- 4-
- 4+
- 2 ✗
- 3

Correct answer

- 4-

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An element B consists of three isotopes of mass, 28, 29 and 30 and percentage abundances of 92.2, 4.7 and 3.1 respectively. Work out relative atomic mass(4mks) DONT WRITE THE UNITS *

4 / 4

28.109 ✗

Correct answer

28.11

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✓ Elements X and Y have atomic numbers 11 and 17 respectively. Which one of the elements is a metal? (2mks) 2 / 2

*

- (●) X ✓
- ( ) Y
- ( ) Other: .....

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✓ The table below shows the atomic numbers of four elements W,X,Y and Z 2 / 2

Which two elements belong to the same group? (2mks)

*

table below shows the atomic numbers of four elements W,X,Y a

Element	W	X	Y	Z
Atomic number	20	17	19	9

ch two elements belong to the same group?
ıks)

- [ ] W
- [x] X ✓
- [ ] Y
- [x] Z ✓

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✓ Two elements M and N have atomic numbers 17 and 20 respectively. Write the formula of the compound formed when M and N react. (1mk) * 1 / 1

- (●) NM2 ✓
- ( ) N1M2
- ( ) N2M
- ( ) N2M1

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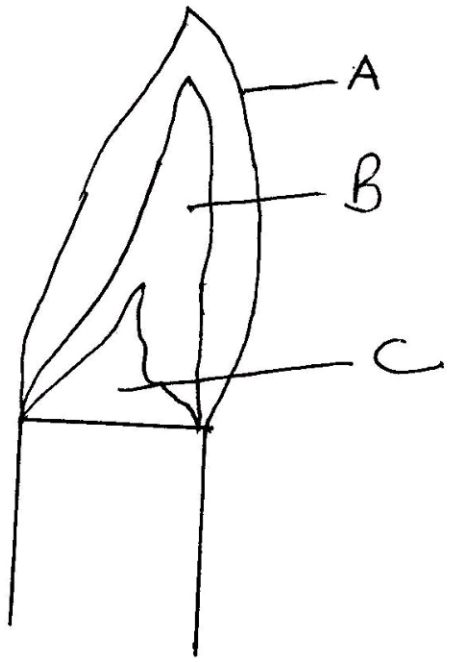
✗ The following diagram represents a non-luminous flame of the Bunsen burnerName the parts of the flame labeled A, B and C respectively, DO NOT INDICATE THE SYMBOLS IN YOUR ANSWER, SPERATE THE ANSWERS WITH COMAS, AND START WITH CAPITAL LETTER (3mks) * / 3



Pale blue zone, Green blue zone, Almost colourless zone ✗

Correct answers

Pale blue zone

Green blue zone

Almost colourless zone

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✓ Which of the parts in (a) above is the hottest? (1mk) * 1 / 1

Pale blue zone ✓

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2 / 2

i) Name the other type of flame produced by a Bunsen burner (1mk) *

Luminous flame

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3 / 3

ii) Under what conditions does the Bunsen burner produce the flame in d(i)? (1mk) *

When the air hole is closed

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Define the following terms as used in medicineDrug (1mk) * 2 / 2

- is a medicinal substance
- anything that alters your mind
- any substance that changes your normal body function
- any substance that alters your body function

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✗ Prescription is the written detailed information on the correct amount and how to use a drug true or false? (1mk) 0 / 1

*

- ○ true
- ◉ false ✗

Correct answer

- ◉ true

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✓ Dosage is the amount of drug required to treat a particular illness, (1mk) 1 / 1

*

- ○ false
- ◉ true ✓

Add individual feedback

/ 0

Drug abuse is the wrong usage of drugs, (1mk)

*

- ◉ true
- ○ false

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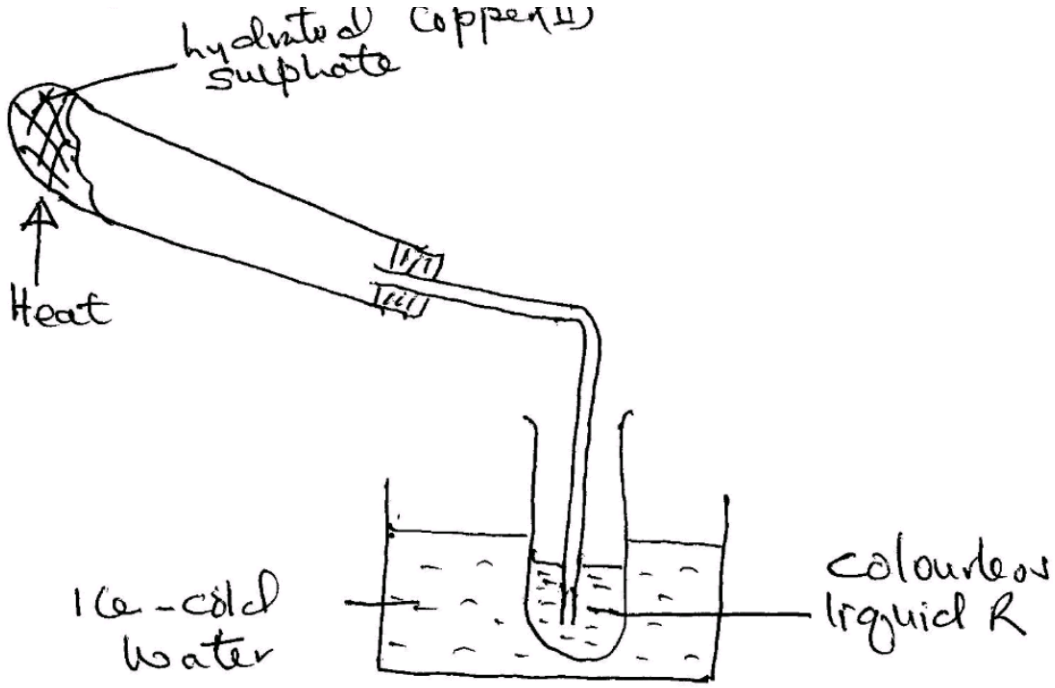
1 / 1

Hydrated Copper (II) Sulphate is heated in a boiling tube as shown.

State the colour of Copper (II) Sulphate before and after heating? (1mk)

*



- [ ] before white,
- [ ] after blue
- [x] before blue
- [x] after white

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✓ 3 WAYS on How can the purity of the colourless liquid be confirmed? (3mks) *

3 / 3

- [x] Testing melting point ✓
- [x] Testing it's boiling point ✓
- [ ] Testing it's volatility
- [x] testing its density ✓
- [ ] Testing it's effect on litmus paper

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✓ Name another substance that can undergo the same change as hydrated Copper (II) Sulphate (1mk)
*

2 / 2

- ( ) calcium sulphate
- ( ) sodium chloride
- ( ) iodine
- (•) cobult (ii) chloride ✓

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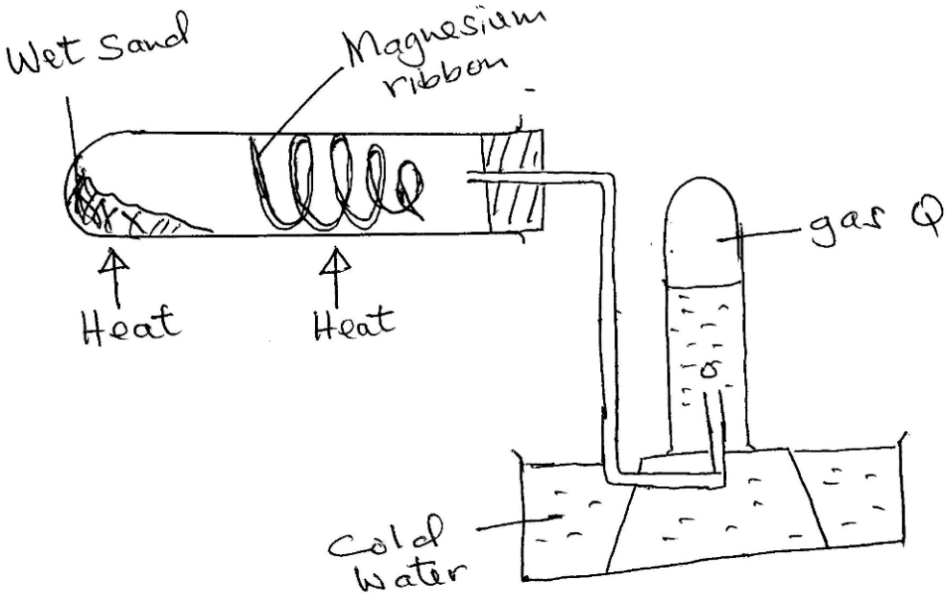
✓ A Magnesium ribbon was cleaned with steel wool and used in the following set up. Wet sand was heated before Magnesium ribbon. 3 / 3

Explain the following:
Sand was heated first before heating Magnesium ribbon (1mk)
*



- ( ) to produce fume
- ( ) to prevent magnesium from finishing up
- (•) to produce steam which would react with magnesium ✓
- ( ) to react with the steam produced

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✓ Magnesium ribbon was cleaned with steel wool , to remove it's oxide layer (1mk) 3 / 3

*

- (●) true ✓
- ( ) false

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✓ Name gas R (1mk) 1 / 1

- (●) Hydrogen ✓
- ( ) oxygen
- ( ) nitrogen
- ( ) carbon dioxide

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ALL THE BEST.!!! WAIT FOR YOUR CERTIFICATE OF PARTICIPATION. AFTER SUBMITTING * / 0

Thank you

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