

B.O.T TERM II 2019
S.3 CHEMISTRY
TIME: 1 HOUR

INSTRUCTIONS

- **Attempt all questions.**

1. (a) Name;
 - (i) the component of air which can be obtained by heating ammonium nitrite.
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 - (ii) the process by which the component is obtained in industry.
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 - (b) Write an equation for the decomposition of ammonium nitrite.
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.....
 - (c) Name the component of air which is a useful plant nutrient.
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.....
 - (d) Write the name and formula of the product of the reaction of the component named in (c) and Magnesium metal.
Name:.....
Formula.....
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2. An element X has atomic number 20 while Y has atomic number 8.
 - (a) Write the electric configuration of;
 - (i) X.....
 - (ii) Y.....
 - (b) To which group and period in the periodic table does;
 - (i) X belong?
Group.....
Period
 - (ii) Y belong?

Group.....

Period

(c) Write down the most common formula of the most common ion of element

(i) X.....

(ii) Y.....

(d) What type of bond would be formed when X and Y react?

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3. A hydro carbon X contains carbon and hydrogen in the ratio 3: 1 respectively and its vapour density is 8. (C = 12, H = 1)

(a) Work out the empirical formula of the hydrocarbon.

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(b) (i) Determine its molar mass.

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(ii) Calculate its molecular formula.

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4. Dilute sulphuric acid was added to copper (II) carbonate and the gas evolved passed through aqueous calcium hydroxide solution as shown in figure below. The addition of sulphuric acid was continued until there was no further change.

(a) State what was observed in the conical flask.

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(b) Write equations (s) for the reaction (s)

(i) Between sulphuric acid and copper (II) carbonate.

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(ii) That took place in the boiling tube.

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END