

MINISTRY OF EDUCATION SCIENCE AND TECHNOLOGY



THERESIA SECONDARY SCHOOL

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FORM TWO PRE MOCK EXAM

CHEMISTRY



Time: 2:30 Hrs.

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INSTRUCTIONS

- This paper consists of three sections **A**, **B** and **C** with total of **ten (10)** questions.
2. Answer **all** questions in the space provided
  3. All writings must be in **blue** or **black** ink **EXCEPT** for diagrams which must be in pencil.
  4. Neat work is highly needed

**SECTION A (15 marks)**

**Answer all questions from this section**

1. For each of the item (i) – (x), choose the correct answer from the given alternatives and write its letter in the box provided beside the item number.
  - i. Identify the process used to remove contaminants from water.
    - A. water purification
    - B. Water treatment
    - C. sedimentation
    - D. Contamination
  - ii. The most appropriate method for separating a mixture of Sodium chloride and Ammonium chloride is:
    - A. Chromatograph
    - B. Evaporation from an aqueous solution
    - C. Solvent extraction
    - D. Sublimation
  - iii. Which one of the following statements about hydrogen is wrong?
    - A. Air and pure hydrogen mixture explodes spontaneously
    - B. Hydrogen does not support combustion although it's a good fuel
    - C. water is the oxide of hydrogen only
    - D. 100% pure hydrogen gives a 'pop' sound with a burning splint.
  - iv. What type of displacement is done by collecting pure hydrogen in the laboratory;
    - A. Downward displacement of water
    - B. Downward displacement of air
    - C. Upward displacement air
    - D. Upward displacement of air
  - v. Sea water contains various salts. Which one is present in the largest proportion?
    - A. Calcium sulphate
    - B. Sodium chloride
    - C. Magnesium chloride

D. Magnesium sulphate

vi. Which one of the following represents the chemical combination of substances result into the formation of water?

A. Magnesium + oxygen  $\longrightarrow$  magnesium oxide

B. Lead (II) oxide + hydrogen  $\longrightarrow$  lead + water

C. Hydrogen + oxygen  $\longrightarrow$  water

D. Silver oxide + hydrogen  $\longrightarrow$  silver + water

vii. A certain liquid dissolves copper (II) sulphate to form blue solution. This is likely to be

A. Hydrochloric acid

B. Liquefied oxygen

C. Water

D. Nitric acid.

viii. Classification of fuels based on the state include.....

A. Solid, gaseous and molten fuels

B. Solid, gaseous and liquid fuels

C. Solid, frozen and liquid fuels

D. Solid, gaseous and steam fuels

ix. The process of chlorination in water treatment aims at:-

A. Making syrup

B. Removing bad odor

C. Killing micro-organism

D. Forming suspension

x. Addition of potash or Aluminum alum during urban water treatment is purposely for

A. Killing germs

B. Identifying impurities present in water

C. Coagulating solid particles

D. Improving taste of water

2. Match the items in **LIST A** with a correct response in **LIST B** by writing the letter of the correct response below the corresponding item number in the table below it.

LIST A	LIST B
i. A uniform mixture of two or more substances.	A. Residue
ii. A uniform of two or more liquids.	B. Suspension
iii. Heterogeneous mixture of two immiscible liquids where one of the liquid forms droplets which spread throughout the other.	C. Miscible
iv. Insoluble substance formed during filtration.	D. Immiscible
v. Heterogeneous mixture of two or more substances that the other substance is evenly distributed in the other substance	E. Mixture
	F. Emulsion
	G. Compound
	H. Solution

**SECTION B (70 Marks)**

Answer all questions from this section

3. (a) Describe the energy transformations that take place in each of the following cases

i. Energy from the sun is used to generate electricity for lighting a house

.....

ii. Mechanical energy from the waterfalls is used to generate electricity.

.....

iii. A bicycle wheel is used to turn a dynamo. The electric energy from the dynamo is used to nitrate and power a bulb to produce light

.....

(b) Swaumu was surprised as she saw her mother using gas in cooking instead of charcoal. Talk to Swaumu on why her mother prefers gases in cooking over charcoal (four (4) points)

i. ....

ii. ....

iii. ....

iv. ....

4. (a) What is

i. Fuel

.....

.....

ii. Destructive distillation of coal

.....

.....

(b) Mr. Shamba asked form two students to propose fuels to be used in the school kitchen. As a form two student, what factors or characteristics would you consider in proposing a good fuel to be used? Any four points

i. ....

.....

ii. ....

.....

.....

iii. ....

.....

iv. ....

.....

5. (a) Define the following terms;

i. Water treatment

.....

.....

ii. Water purification

.....

.....

(b) Name impurities that can be found in water

i. ....

.....

ii. ....

.....

iii. ....

.....

iv. ....

.....

(c) State any two methods of domestic water treatment.

i. ....

ii. ....

6. Assume you have visited the chemistry laboratory at your school and you noted that the materials available are

**CHEMICALS:**

Water, manganese (IV) oxide and hydrogen peroxide

**APPARATUS:**

Dropping funnel, delivery tube, flat bottomed flask, gas jar beehive shelf, stand and trough

i. As a form two student, what can you prepare from the materials above?

.....

ii. Draw a diagram to show how you can assemble your experiment

iii. Write any two uses of what you would obtain from the above experiment

.....

.....

iv. Write a word chemical equation for the reaction in an arranged experiment

.....

7. In an experiment, two pieces of iron X and Y were used where by painting was applied on piece of iron X, then the two pieces of iron were placed in a moisture (wet) place for about a month and a mass of each piece of iron was determined.

i. What was the aim of the experiment?

.....

.....

ii. Which of the two pieces of iron would be heavier?

.....

iii. Give reason to support your answer

.....

.....

iv. Give and define the suitable chemical name describing what happened on piece of iron named in 7 (ii) above.

.....

.....

.....

8. (a) Petroleum products such as petrol, diesel and kerosene can be separated by fractional distillation, draw the diagram for the fractional distillation when separating components with different boiling points.

(b) Describe using three points to show how the separation of mixture is important

i. ....

ii. ....

iii. ....

9. (a) A laboratory technician advised students to use non- luminous flame when heating chemicals in the laboratory. As a form two student, briefly explain three (3) reasons why he encouraged students to use this kind of flame?

- i. ....
- ii. ....
- iii. ....

(b) Some people in the society believe that solving problems by using scientific procedure is the wastage of time and money. By using the knowledge of chemistry that you have, convince these people by using four points

- i. ....
- ii. ....
- iii. ....
- iv. ....

**SECTION C 15 marks**  
**ANSWER THIS QUESTION**

10. (a) Define the heat value of a fuel

.....

(b) Explain how the heat value of a fuel can be used as a factor to consider when choosing for good fuel

.....

(c) Differentiate between burning velocity and Pyro metric burning effect of a fuel

.....

(d) To boil 20 litres of water, 250 cm<sup>3</sup> of kerosene as a fuel were completely burnt. Determine temperature in Celsius from which water started to boil to 121.5 °C. Given that Density of water = 1000kg/m<sup>3</sup>  
Density of kerosene = 810 kg/m<sup>3</sup>  
Heat value of kerosene = 42430 KJ/Kg  
Specific heat capacity of water C = 4.18 KJ/Kg/K\_\_