UNITED NATIONS SCHOOL I.E.D.

PEI: COMPREHENSIVE TRAINING OF COMPETENT ENTREPRENEURIAL LEADERS, WITH DEMOCRATIC, TECHNOLOGICAL, CULTURAL AND SPORTS PRINCIPLES

MOTTO: "EDUCATION, SCIENCE, CULTURE AND SPORT TO TRANSCEND"

PREPARATION WORKSHOP FOR THE SECOND PERIOD

CHEMISTRY

TENTH GRADE

TEACHER HEISEL QUESADA

The preparation workshop must be carried out in the Chemistry notebook as a requirement to take the competency test

Delivery date: JULY 15

USE THE FOLLOWING INFORMATION FOR QUESTIONS 1 TO 5

The balancing of equations is nothing more than a consequence of Lavoisier's law of conservation of mass, so the mass of the reactants must be equal to the mass of the, this implies that the quantity and variety of atoms present in the reactants must be maintained in the products, (the only thing that varies is the way they are combined); It consists of balancing the reagents and products of the formulas, for this, coefficients are only added when required but the subscripts are not changed.

1. From the text, write 3 statements that are true and 3 that are false. Write the fake ones correctly
2. Explain why a chemical equation should be balanced
3. Lists the steps to follow to perform a chemical calculation from a chemical equation
4. Explain what the coefficients mean in a balanced equation and what their importance is
5. To balance an equation, can the subscripts (number of atoms) of substances be changed? Justify your answer

USE THE FOLLOWING INFORMATION FOR QUESTIONS 6 TO 11

$$Fe_2O_3 + CO \longrightarrow Fe + CO2$$

6. Write down the coefficients for each reagent and each product (number of moles)

7. If you have 40 grams of Fe2O3 and you want to know the number of moles of Fe produced, write down what is the first thing to do after balancing the equation. Solve the exercise

8. If 9 moles of CO react, calculate the amount of moles of CO2 produced. Describes the steps used to troubleshoot the exercise

9. If 80 grams of Fe are produced, calculate the number of grams of Fe2O3 needed. Describes the steps used to troubleshoot the exercise

10. If you have 4 moles of Fe2O3, calculate the amount of moles of CO2 produced
11. Propose an exercise with statement, procedure and response based on the equation

USE THE FOLLOWING INFORMATION FOR QUESTIONS 12 TO 20

Las sustancias P y J reaccionan de acuerdo con la siguiente ecuación

$$P + J \longrightarrow 2X$$

Adicionalmente la sustancia X reacciona con la sustancia R de acuerdo con la siguiente ecuación

$$X + R \longrightarrow Q + J$$

Químicamente la sustancia R no reacciona con las sustancias P y J

En la siguiente tabla se presentan algunas características de las sustancias mencionadas

Todas las sustancias son líquidas a 20 ºC

Sustancia	Masa molar (g/mol)	Temperatura de ebullición (°C)
P	50	215
J	?	50
X	30	180
R	?	100
Q	40	200

12. Based on the information, it calculates the molecular weights of J and R
13. Write the reactants and products in each equation
14. Write down the boiling temperatures of the substances in ascending order
15. Which of the substances would go into a gaseous state first? Justify your answer
16. Which of the substances would first go into a solid state? Justify your answer
17. Perform the ratio in moles for each equation
18. Perform the gram ratio for each equation
19. Organizes substances from highest to lowest molecular weight
20. Calculate the moles of J produced from 400g of R

USE THE FOLLOWING INFORMATION FOR QUESTIONS 21-30

A continuación se muestran la ecuación balanceada que describe la oxidación del hierro (Fe) y la masa molar de cada uno de los reactivos y del producto.

$$4\,Fe + 3\,O_2 \longrightarrow 2\,Fe_2O_3$$

Reactivo o producto	Masa molar (g/mol)
Fe	56
O_2	32
Fe_2O_3	160

21. Write down the reactants and products of the equation
22. According to the information, if 280 g of Fe react with 96 g of O2, calculate the limit reagent
23. What would be the excess reagent? Perform the procedure
24. From the limit reagent, it calculates the moles of Fe2O3 produced
25. From the limit reagent, calculate the grams of Fe2O3 produced
26. Calculates the amount in grams of overreactive reactant that is left over
27. Discuss what would happen if you miscalculated the limit reactant
28. It poses a situation at the industrial level where the limit reagent and the reagent are used in excess
29. It poses a situation of everyday life where the limit reagent and the reagent are used in excess
30. Why the use of limit and excess reagents is important in Chemistry