LEARNING CONTRACT AND TASK

FOUNDAMENTAL CHEMISTRY I

CODE KIMS119110

By:

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CHEMISTRY EDUCATION STUDY PROGRAM

FACULTY OF MATHEMATICS AND NATURAL SCIENCES

UNIVERSITAS PENDIDIKAN GANESHA

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LEARNING CONTRACT AND TASK

I. SUBJECT MATTER IDENTITY

Departement : Chemistry
Study Program : Chemistry Education
Subject Matter : Fundamental Chemistry I
Subject Code : KIMS119110
Semester : I
Weight : 3(1) 5 hr/w

II. CONTRACT

1. Students should attend the class minimum 75%.
2. Students should sign their attendance before seating in the classroom.
3. Students should follow the lesson actively and complete all given tasks.
4. Assessment is done based on learning process (60%) and learning product (40%).
5. Learning process consists of participation (20%) and task (40%).
6. Participation includes attendance (score 75), classroom activity (score 25), absence (score -10), and permission (score -5).
7. Learning product consists of middle exam (15%) and final exam (25%).

III. TASKS

No	Task Name	Task Content	Time allocation
1	Task 1. Glassware	Describing glassware and the way to use glassware in experiment.	5 hrs.
2	Task 2. Chemicals	Describing chemicals and making solutions of solid and liquid materials.	5 hrs.
3	Task 3. The Structure of Matters	Describing macroscopic and microscopic phenomena of mattes as well as the symbol used to represent them.	5 hrs.
4	Task 4. The Properties of Matters	Verifying the properties of electrolyte and nonelectrolyte solutions, and acid and base solutions through experiment.	5 hrs.
5	Task 5. The Periodic Table of Elements	Describe the periodical properties of element and compounds.	5 hrs.
6	Task 6. Chemical Bonding	Describe chemical bonding of compound and the properties of polar and nonpolar covalent compounds.	5 hrs.

Task 1. Glassware

Choose ten glassware available at laboratory and describe each of them including name, material made, function, and the way to use for its main function as follows!

No.	Ficture	Description
1		
2		
3		
4		
5		

6		
7		
8		
9		
10		

Task 2. Chemicals

Task 2.1 Describing Chemical

Choose ten different chimicals available at laboratory and describe each of them including name, chemical formula, relative molecular mass, and state as follows!

No.	Ficture	Description
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Task 2.2 Making Solutions from solid materials

List equipment used and describe the way how to make 100 mL of 0.1 M NaCl solution!

Equipments			
No.	Name	Specification	Amount
Materials			
No.	Name	Formula	Amount
Procedure			
Calculation			

Taks 2.3 Making solution from liquid materials

List equipment used and describe the way how to make 100 mL of 0.01 M HCl solution!

Equipments			
No.	Name	Specification	Amount
Materials			
No.	Name	Formula	Amount
Procedure			
Calculation			

Task 3. The Structure of Matters

Task 3.1 Observing Macroscopic Phenemena of Matters

Observe the material provided carefully and write down your observation results, both in Indonesia and English!

No.	Matters	Hasil Pengamatan	Observation Results
1	Tap water		
2	Coconut oil		
3	Table Salt		
4	Sugar		

Task 3.2 Observing Mixtures

Observe the following mixtures carefully, write down the results and expalin why it is happened!

No.	Mixtures	Observation Results	Explanation
1	Oil is dropped into water.		
2	Water is droped into oil.		
3	Salt is added into water.		
4	Sugar is added into water.		

5	A mixture of salt and water is stirred.		
6	A mixture of sugar and water is stirred.		
7	More sugar is added into small amount of water.		
8	More salt is added into small amount of water.		

Task 3.3 Symbol of Particles

Write down all particles available in the following matters!

No	Names of Matters	Name of Particles	Particles Symbol
1	Water		
2	NaCl solution		
3	HCl solution		

Task 4. The Properties of Matters

Task 4.1 Electrolyte and Nonelectrolyte Solutions

Write experiment procedure to verify the properties of electrolyte and nonelectrolyte solutions and conduct experiment to prove them!

Title			
Equipments			
No.	Name	Specification	Amount
Materials			
No.	Name	Formula	Amount
Procedure			
Result			
Discussion			
Conclusion			
References			

Task 4.2 Acid and Base Solutions

Write experiment procedure to verify the properties of acid and base solution and conduct experiment to prove them!

Title			
Equipments			
No.	Name	Specification	Amount
Materials			
No.	Name	Formula	Amount
Procedure			
Result			
Discussion			
Conclusion			
References			

Task 5. The Periodic Table of Elements

Task 5.1 The Periodical Properties of Elements

Write down the electronic structure of the following elements and describe their periodical properties!

No	Elements	Electronic Structure	Periodical Properties
1	Li		
	Na		
	K		
	Fr		
	Cs		
2	Na		
	Mg		
	B		
	C		
	O		
	F		
	Ne		

Task 5.2 The Periodical Properties of Acid and Base Compounds

Describe the strength of the following base and acid!

No	Compounds	Acid and Base Strength
1	HF, HCl, HBr, and HI	
2	LiOH, NaOH, and KOH	

Task 6. Chemical bonding

Task 6.1 Chemical Bonding of Compounds

Explain the chemical bonding own by the following compounds!

No.	Compounds	Chemical Bonding
1	CO_2	
2	H_2O	
3	NaCl	
4	HCl	
5	$CaCO_3$	
6	$FeSO_4$	
7	$Zn(OH)_2$	

Task 6.2 The Properties of Polar and Nonpolar Covalent Compounds

Conduct the following experiment and discuss the experiment results!

Title	The Effect of Electrical Field towards Polar and Nonpolar Compounds		
Equipments			
No.	Name	Specification	Amount
1	Biuret	50 mL	1 piece
2	Stative and clamp	-	1 set
3	Beaker glass	50 mL	2 pieces
4	Plastic ruler	30 cm	1 piece
5	Wool material	30 x 30 cm	1 piece
Materials			
No.	Name	Formula	Amount
1	Water	H_2O	50 mL
2	Ethanol 70%	C_2H_5OH	50 mL
3	Carbon tetrachloride	CCl_4	50 mL
4	Benzene	C_6H_6	50 mL

Procedure

1. Provide equipment needed and set them!
2. Fill biuret with 50 mL water!
3. Rub plastic ruler on wool materials in one direction!
4. Open the tap of biuret to allow the water come out and place the ruler close to the water!
5. Observe what is happened and write the results!
6. Repeat step 2 to 5 using different materials!

Result	Experiment	Results

Discussion

Conclusion

References