

EXPERIMENT PROCEDURES



FOUNDAMENTAL CHEMISTRY I

CODE KIMS119110

By:

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Introduction

There are seven experiments that should be conducted in this learning processes. The aims of experiment are to improve student's knowledge about chemistry concepts and to enhance student's skills in conducting experiment as a chemistry teachers' candidate. These experiments are:

- 1) Experiment 2.1 Making Solutions from Solid Materials
- 2) Experiment 2.2 Making Solution from Liquid Materials
- 3) Experiment 3.1 Observing Macroscopic Phenomena of Matters
- 4) Experiment 3.2 Observing Mixtures Behaviors
- 5) Experiment 4.1 Electrolyte and Nonelectrolyte Solutions
- 6) Experiment 4.2 Acid Base Solutions
- 7) Experiment 6.1 The Properties of Polar and Nonpolar Covalent Compounds

General Instruction

- 1) All students should conduct all experiment in pairs!
- 2) Prepare your experiment in advance (before hands)!
- 3) Consult your experiment procedure with lab assistant or lecturer!
- 4) Conduct your experiment carefully after having approval from lab assistant or lecturer!
- 5) Write report of each experiment.

Experiment 2.1 Making Solutions from solid materials

- 1) List equipment used and describe the way how to make 100 mL of 0.1 M NaCl solution!
- 2) Conduct experiment after having approval from lab assistant or lecturer!

Equipments			
No.	Name	Specification	Amount

Materials			
No.	Name	Formula	Amount

Procedure

Calculation

Experiment 2.2 Making solution from liquid materials

- 1) List equipment used and describe the way how to make 100 mL of 0.01 M HCl solution!
- 2) Conduct experiment after having approval from lab assistant or lecturer!

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

Experiment 3.1 Observing Macroscopic Phenomena 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		

Experiment 3.2 Observing Mixtures Behaviors

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

No.	Mixtures	Observation Results	Explanation
1	Oil is dropped into water.		
2	Water is dropped 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.		

Experiment 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			

Experiment 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			

Experiment 6.1 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 ₂ O	50 mL
2	Ethanol 70%	C ₂ H ₅ OH	50 mL
3	Carbon tetrachloride	CCl ₄	50 mL
4	Benzene	C ₆ H ₆	50 mL
Procedure			
<ol style="list-style-type: none">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			