

The background of the entire page is a light blue grid. Each square in the grid contains a faint, stylized icon related to chemistry or science. These icons include a molecular structure, a magnifying glass, a beaker, a test tube, a lightbulb, a leaf, a radiation symbol, a flask, and an atom.

## **Chemistry Workbook**

---



# General Chemistry

| GENERAL CHEMISTRY |             |
|-------------------|-------------|
| / M T W T F S S   |             |
| KEYWORDS          | REACTIONS   |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
| EQUATIONS         | EXPLANATION |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
| NOTES             | EXAMPLES    |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |
|                   |             |

## KEYWORDS

Define key terms and concepts for each chapter.

Include important definitions and their meanings.

## REACTIONS

List the types of chemical reactions.

Include the reactants and products of each reaction.

Note the conditions (temperature, pressure, catalysts).

## EQUATIONS

Write down important chemical equations.

Ensure the equations are balanced.

## EXPLANATIONS

Provide detailed explanation of each reaction and equation.

Explain underlying principles and mechanisms.

Describe any anomalies or exceptions.

## NOTES

Highlight any special symbols or notations.

## EXAMPLES

Include real-life examples or applications of the reactions.

Work through sample problems or past exam questions.

Provide step-by-step solutions and explanations.

# Organic Chemistry

| ORGANIC CHEMISTRY<br>/ M T W T F S S |          |       |
|--------------------------------------|----------|-------|
| REACTION                             |          | STEPS |
| MECHANISM                            |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
| STEPS                                | CATALYST |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
| NOTES                                |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
| SUMMARY                              |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |
|                                      |          |       |

## REACTION & MECHANISM

Write down the specific chemical reaction being studied.

Describe the mechanism of the reaction.

Include details about the steps involved in the reaction.

## STEPS

List the individual steps of the reaction mechanism.

Describe what happens at each step.

## CATALYST

Note any catalysts involved in the reaction.

Explain their role and how they influence the reaction.

NAME

List the names of the chemical compounds.

Provide the chemical formula for each compound.

Draw the molecular structure of each compound.

**TOPIC**

## KEY CONCEPTS

## METHOD

Describe the method or procedure used in the experiment. Include step-by-step instructions or a summary of the process.

# Lab Lesson

LAB LESSON

/ M T W T F S S

|      |             |
|------|-------------|
| CUES | LAB VALUES  |
|      | RESULTS     |
|      | CONCLUSIONS |

CUES

Write any important cues, prompts or questions that arise during lab session. This section can be used for jotting down reminders or important points to consider.

LAB VALUES

Record any lab values, measurements, or data collected during the experiment. This section should include numerical data, observations and any relevant units.

RESULTS

Summarize the results of the experiment. This section should include findings and outcomes based on the lab values and observations recorded.

CONCLUSIONS

Write the conclusions drawn from the experiment. Discuss the implications of the results, any patterns observed and how they relate to the key concepts and theories. Include any errors or anomalies encountered and their potential impact on the results.

# Analytical Chemistry

| ANALYTICAL CHEMISTRY |                                        |
|----------------------|----------------------------------------|
| / M T W T F S S      |                                        |
| CUES                 | INTRODUCTION                           |
|                      | FORMULA                      SUBSTANCE |
|                      | CALCULATIONS                           |

## CUES

Write any important cues, prompts, or questions that arise. This section can be used for jotting down reminders or important points to consider.

## FORMULA

Create a list of all relevant formulas needed for your calculations.

## SUBSTANCES

Write down the substances, key properties and characteristics that are relevant to the reaction.

## CALCULATIONS

Show calculations and end result of the reaction by using the relevant formulas and substances.

## RESULT

## KEY TAKEAWAYS

## SUMMARY

Create a summary of what you covered on these pages, examples and trends observed in the reaction through your calculations.



# Bio Chemistry

BIO CHEMISTRY

/ M T W T F S S

INTRODUCTION

| MACRO & MICRO MOLECULES, ENZYMES | DEFINITION AND STRUCTURE |
|----------------------------------|--------------------------|
|                                  |                          |
|                                  |                          |
|                                  |                          |
|                                  |                          |

PURPOSE AND FUNCTION

SUMMARY

## INTRODUCTION

A brief overview of what macro molecules, micromolecules and enzymes are. Define them and give a general idea of their importance in biochemistry.

## MACRO & MICRO MOLECULES, ENZYMES

- Macromolecules: Mention polymers, monomers and examples.
- Micromolecules: List simple structures such as simple atoms or small compounds.
- Enzymes: Describe their active sites and how substrate binding occurs.

## DEFINITION AND STRUCTURE

Define the macro & micro molecules and enzymes and describe their structure.

## PURPOSE AND FUNCTION

Provide a concise recap of the key points discussed.

## SUMMARY

Summarize definitions, structures, and functions. Highlight important takeaways.

# Bio Chemistry

BIO CHEMISTRY

/ M T W T F S S

OVERVIEW OF METABOLIC PATHWAYS

| PROTEINS | LIPIDS | CARBS |
|----------|--------|-------|
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |

PROCESS AND COLLABORATION

SUMMARY

## OVERVIEW

Detail the metabolic pathways of each of these macromolecules.

## PROTEINS, LIPIDS, CARBS

- Proteins: Include processes like translation, urea cycle and gluconeogenesis.
- Lipids: Describe how fatty acids are metabolized and the role of lipids in energy storage.
- Carbs: Explain how carbohydrates are broken down for energy and stored as glycogen.

## PROCESS AND COLLABORATION

Explain how different metabolic pathways interact and collaborate.

## SUMMARY

Provide a concise recap of key points discussed.

## KEYWORDS

## REACTIONS

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## EQUATIONS

## EXPLANATION

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## NOTES

## EXAMPLES

|           |          |       |
|-----------|----------|-------|
| REACTION  |          | STEPS |
| MECHANISM |          |       |
|           |          |       |
|           |          |       |
|           |          |       |
|           |          |       |
|           |          |       |
|           |          |       |
| STEPS     | CATALYST |       |
|           |          |       |
|           |          |       |
|           |          |       |
|           |          |       |

## NOTES

---

---

---

---

---

---

---

## SUMMARY

---

---

---

---

---

---

---



[illegible][illegible]

## KEY CONCEPTS

|             |                    |
|-------------|--------------------|
| <b>CUES</b> | <b>LAB VALUES</b>  |
|             | <b>RESULTS</b>     |
|             | <b>CONCLUSIONS</b> |





---

## RESULT

---

---

## KEY TAKEAWAYS

---

---

## SUMMARY

---

## INTRODUCTION

| MACRO & MICRO MOLECULES, ENZYMES | DEFINITION AND STRUCTURE |
|----------------------------------|--------------------------|
|                                  |                          |
|                                  |                          |
|                                  |                          |
|                                  |                          |
|                                  |                          |
|                                  |                          |

## PURPOSE AND FUNCTION

## SUMMARY

---

**OVERVIEW OF METABOLIC PATHWAYS**

---

| PROTEINS | LIPIDS | CARBS |
|----------|--------|-------|
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |
|          |        |       |

---

**PROCESS AND COLLABORATION**

---

---

**SUMMARY**

---