Draw structures for:

Sodium Acetylide
Sodium Methoxide

Which of these two compounds is “Organometallic”

Why is this compound considered to be “Organometallic”

Why is the OTHER compound NOT considered to be “Organometallic”

Why are organometallics useful compounds for the Synthetic Organic chemist?

Section 14.1

What is the take-away from this section?

Answer Problem 14.1 draw both structures and suggest names for them
Section 14.2

What is the point of this section?

What is Figure 14.2 trying to show?

Section 14.3 (mechanisms not required)

When you make an organo Lithium compound:

what kind of organic compound do you start with?

What is the source of the Lithium?

Write the chemical equation for the preparation of Ethyl Lithium

When you make Grignard Reagent:

what kind of organic compound do you start with?

What is the source of the Magnesium?

Write the chemical equation for the preparation of Phenyl Magnesium Bromide
What does “anhydrous” mean?

Why is it important that the solvent be ANHYDROUS when working with Organometallic compounds?

**Problem 14.2** – write chemical equations for preparing both compounds.

Section 14.4

what is the take-away lesson of this section?

Chapter 1 has a table of pKa values – what are the page numbers?

**Problem 14.3**: draw all the structures and show the mechanism
Chapter 14 Organometallic Compounds

Section 14.5

What is the main synthetic application of Grignard reagents and organolithium reagents?

Why is acid added in the second step of the reaction?

What would happen if you added the acid first?

Problem 14.4

a)

b)

c)
Section 14.6

What kind of organometallic do you use to make an Acetylenic Alcohol?

How do you make a Sodium Acetylide?

How is this different from the reaction to form a organolithium or Grignard reagent?

Section 14.7

(Hint: this is probably the MOST important section in Chapter 14)

What is the point of this section?

Section 14.8

Iodomethylzinc iodide is also known as the Simmons-Smith Reagent

How do you make it?

What is it used for?
**Problem 14.6**

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**Section 14.9**

How is bonding by transition metals different from bonding by Li, Na or Mg?

What is the 18-electron rule? Why 18 electrons?

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**Section 14.10**

How do you make an Organo Cuprate? How is this different from the Lithium and Magnesium compounds?

How many organic groups are attached to each Copper?

When is Elimination a problem?

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**Problem 14.13**