Organic Molecules Worksheet

LOOK at the molecules on the next page and answer the following questions:

1. *Identify by letter (or letters) each of the following:*

a.	Triglyceride	E	f.	Polypeptide	G
b.	Fatty acid	A & I	g.	Disaccharide	F
c.	Lipid	A, E, H & I	h.	Polysaccharide	C
d.	Carbohydrate	B, C, F & J	i.	Amino acid	D
e.	Monosaccharide	B & J	j.	Phospholipid	H

2. *Answer the following questions by supplying the correct letter(s) or name(s):*
   Which molecule(s) (identify by letter) would produce monosaccharides if hydrolyzed completely to monomers? C & F

   What would be the product(s) if Molecule E was hydrolyzed completely? Glycerol & 3 fatty acids

   What would be the product(s) if Molecule G was hydrolyzed completely? 8 amino acids

   Which molecule (identify by letter) would produce glycerol, fatty acids and phosphate if hydrolyzed completely? H

3. Look at the triglyceride molecule on the next page,
   Is it saturated or unsaturated ? Saturated
   Would it likely be liquid or solid at room temperature? Solid
   Is it probably made by a plant or an animal? Animal
   Alter the drawing (preferably in pencil) to change it to the other type of triglyceride.
   (shown in pink)

4. Circle and label one example of each of the following functional groups on the drawings on the next page: hydroxyl, phosphate, carboxyl, amino, sulfhydryl (a few examples shown in red)

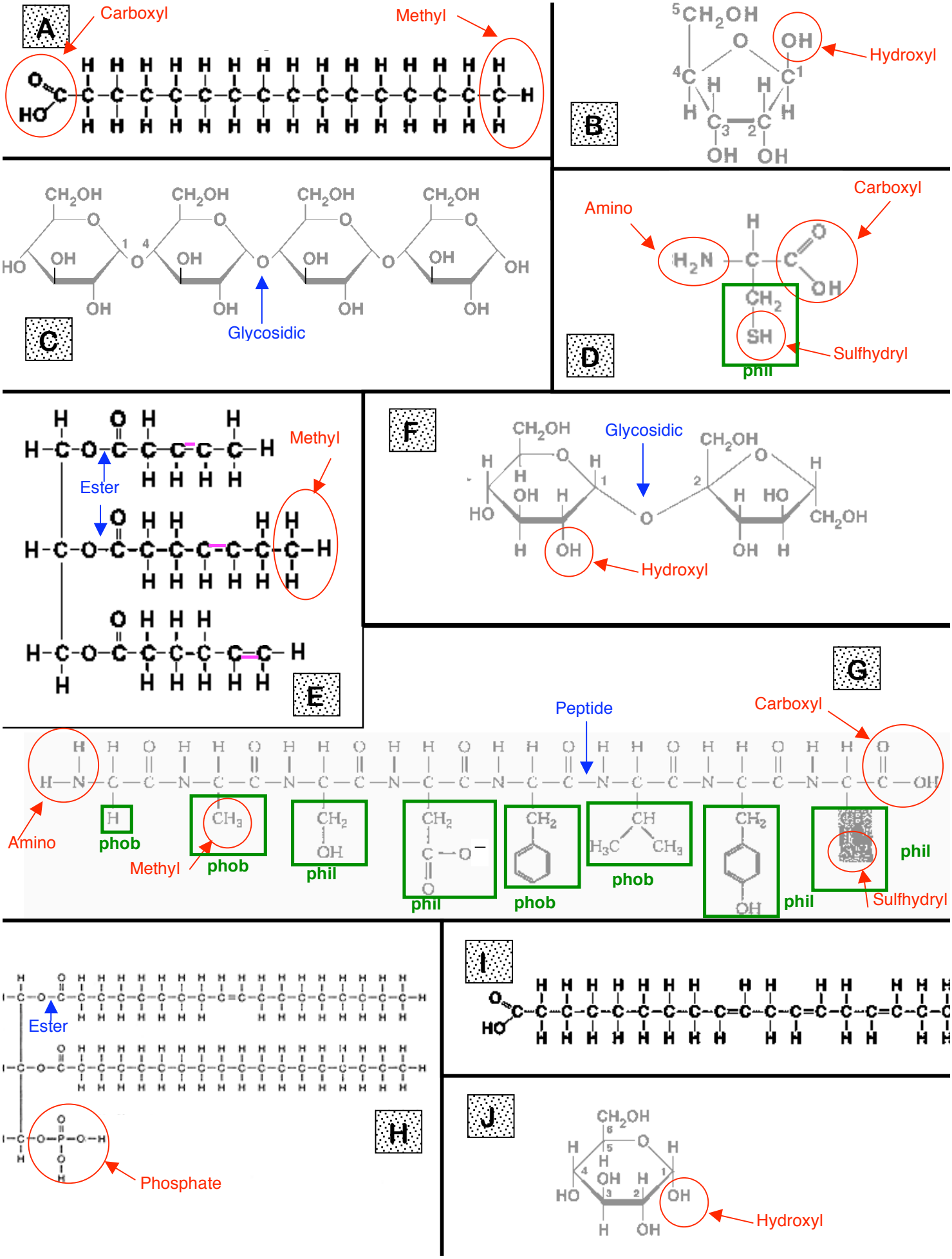
5. Label one example of each of the following linkages on the drawings: peptide, ester, glycosidic (a few examples shown in blue)

6. Look at the polypeptide and amino acid on the next page. Put a BOX around their R groups. Label if they would be hydrophilic or hydrophobic. (shown in green) ("phil"=hydrophilic; "phob" = hydrophobic)

7. What is the empirical formula of Molecule B? $C_5H_{10}O_5$

8. What kind of linkage is shown in Molecule C? Glycosidic

9. What kind of reaction is shown below? dehydration synthesis
   Name the reactants (type of molecules) amino acids
   Name the products (type of molecules) dipeptide and water


A
Carboxyl
Methyl
B
Hydroxyl
C
Glycosidic
D
Amino
Carboxyl
Sulfhydryl
phil
E
Ester
Methyl
F
Glycosidic
Hydroxyl
G
Peptide
Carboxyl
Amino
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Sulfhydryl
H
Ester
Phosphate
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J
Hydroxyl