

ASSESSMENT

1. Define the following terms:

amino acid –

carbohydrate –

carboxyl group –

disaccharide –

glycerol –

hydroxyl group –

lipid –

monosaccharide –

protein –

2. Determine if the following statements are true or false. If the answer is false, correct the statement to make it true.

'In a carbohydrate, carbon, hydrogen and oxygen generally exist in a 2:1:2 ratio.'

'Dehydration synthesis results in the formation of water in the synthesis of carbohydrates and proteins, but not in lipids.'

'Lipids are composed of the sub-units glycerols and fatty acids.'

'All organic molecules contain carbon, hydrogen, and oxygen.'

'Due to the high hydrogen to oxygen ratio, lipids are the best source of energy.'

3. What two functional groups are present in all amino acids? Name and diagram the functional groups below.

4. Arrange the following in terms of smallest to largest representative size.

triglyceride – disaccharide – carbon atom – protein – carboxylic acid

5. Complete the following:

_____ + 3 fatty acids -----> 1 lipid + _____

6. In this activity, you constructed two simple amino acids, glycine and alanine. Using a reference source, research the structure of six different amino acids and write the name draw the structure of each below.

not glycine or alanine

6 ↓ ↓
1 ↓

7. In the activity, you saw how dehydration synthesis resulted in the production of water during the formation of organic compounds. There is another chemical reaction known as hydrolysis. Research and define hydrolysis below and then create a Venn diagram comparing hydrolysis and dehydration synthesis. Include at least two similarities and two differences in your diagram.

8. You may have heard the saying 'You are what you eat'. Do you believe that this is a valid statement. *Explain* what you think the statement means.

9. The USRDA recommends, based on a 2,000 calorie diet, that you do not exceed 540 calories from fat intake daily. Based on this recommendation, what is the maximum amount of fat you should consume, in grams, in one day. *Hint: fat has 9 calories per gram*
** show your calculation*

10. Complete the following concept map.

