



Weekly assignment

Chapter 4: Lesson (1) Biotechnology in energy development

1. The gas that is often produced in the process of biological

Choose the correct answer

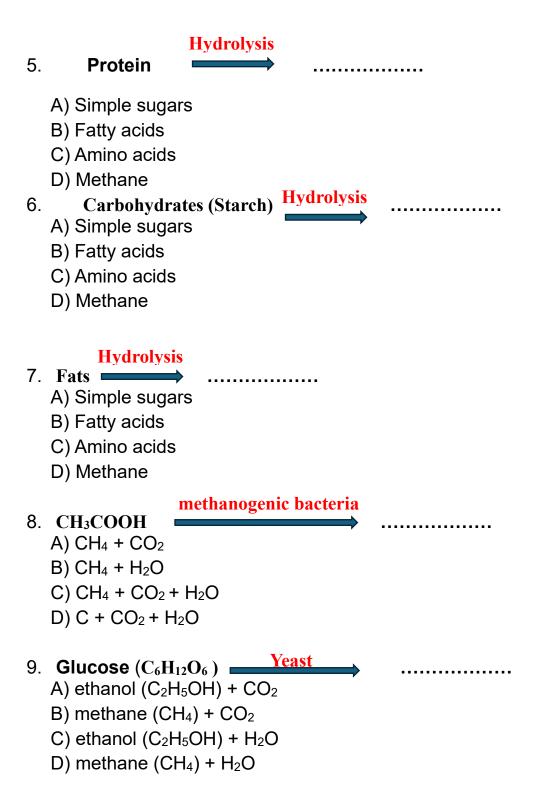
A) AcidogenesisB) AcetogenesisC) Hydrolysis

D) Methanogenesis

decomposition is

	A) Carbon dioxide B) Methane C) Oxygen D) Nitrogen
2	The first step of the biological decomposition process is
	A) Acidogenesis B) Acetogenesis C) Hydrolysis D) Methanogenesis
3	3. The step at which, acidophilic bacteria convert the sugars and amino acids into short-chain fatty acids or alcohol, along with producing gases such as carbon dioxide and hydrogen.
	A) Acidogenesis B) Acetogenesis C) Hydrolysis D) Methanogenesis
4	The stage at which, bacteria perform an additional process to convert the fatty acids and gases produced in the second stage of

biodegradation into acetic acid, hydrogen, and carbon dioxide.



10. Oil + ethano A) biodiesel + glycerin B) methanol + glycerin C) methane + biodiese D) methane + water	
11. What can be convert process?	ted into ethanol during the fermentation
A) Vegetable oilsB) SugarsC) Natural gasD) Coal	
•	with alcohol in the presence of sodium st to produce
A) Ethanol B) Glycerin C) Methane D) Carbon dioxide	

Second: Essay Questions

Answer the following:

1.	How can the efficiency of energy production be improved using biotechnology?
2.	Compare: The production of bioethanol and biodiesel in terms of raw materials used and chemical equation
3.	How you obtain methane from: -
	First: acetic acid CH ₃ COOH (write the chemical equation) Second: carbon dioxide gas and hydrogen gas (write the chemical equation)