

PRODUCTION OF TRIGLYCERIDES – TOPIC TEST 1

QUESTION 1

An ester link results from:

- A. a condensation reaction between a carboxylic acid and an amino functional group
- B. an addition reaction between a carboxylic acid and an amino functional group
- C. an addition reaction between a carboxylic acid and an alcohol functional group
- D. a condensation reaction between a carboxylic acid and an alcohol functional group

QUESTION 2

Fats are sometimes referred to as triglycerides because:

- A. they are formed from three glycerol molecules and a fatty acid molecule
- B. they are formed from a glycerol molecule and three fatty acid molecules
- C. they are formed from three glycerine molecules and a fatty acid molecule
- D. they are formed from a glycerol molecule and a fatty acid molecule

QUESTION 3

The hydrolysis of triglycerides in the small intestine produces:

- A. Amino acids
- B. Glycerol only
- C. Adipose tissue
- D. Fatty acids and glycerol

QUESTION 4

The reaction that produces lipids is known as

- A. Ester linkage
- B. Condensation
- C. Hydrolysis
- D. Respiration

QUESTION 5

The difference between a fat and a fatty acid is

- A. Fatty acids are larger molecules
- B. Fats are building blocks for fatty acids
- C. Fatty acids are soluble in water and fats are insoluble
- D. Fatty acids are building blocks for fats

QUESTION 6

The hydrolysis of 2 mole of a triglyceride requires

- A 1 mole of water
- B 2 mole of water
- C 4 mole of water
- D 6 mole of water

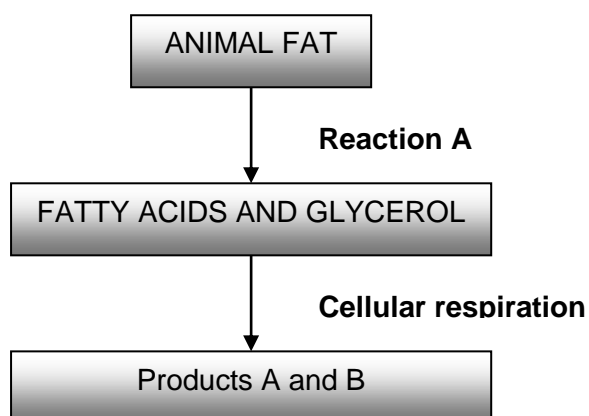
QUESTION 7

When comparing one mole of a saturated triglyceride with one mole of an unsaturated triglyceride containing the same number of carbons, it is true to say that

- A the saturated triglyceride will react with hydrogen but the unsaturated triglyceride will not
- B the unsaturated triglyceride will have the higher boiling point
- C the saturated triglyceride will have a higher molar mass
- D the saturated triglyceride is more likely to be made from a vegetable oil

QUESTION 8

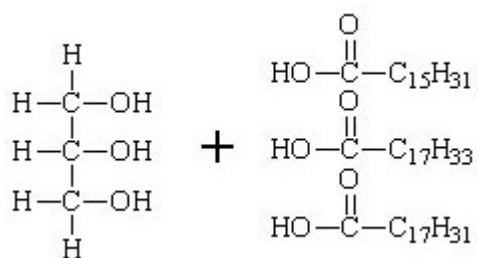
The following flow chart shows some of the different events that occur when a fat is digested.



- (a) Identify the name of reaction A.
- (b) What 2 chemicals are required for process A?
- (c) Give the molecular formulae for products A and B.

QUESTION 9

- (a) Use semi-structural diagrams to show the formation of a triglyceride from the reactants below.



- (b) Is the triglyceride saturated or unsaturated?
- (c) Circle and name the functional groups in the reactants and products.

SOLUTIONS

QUESTION 1 Answer is D

QUESTION 2 Answer is B

QUESTION 3 Answer is D

QUESTION 4 Answer is B

QUESTION 5 Answer is D

QUESTION 6 Answer is D

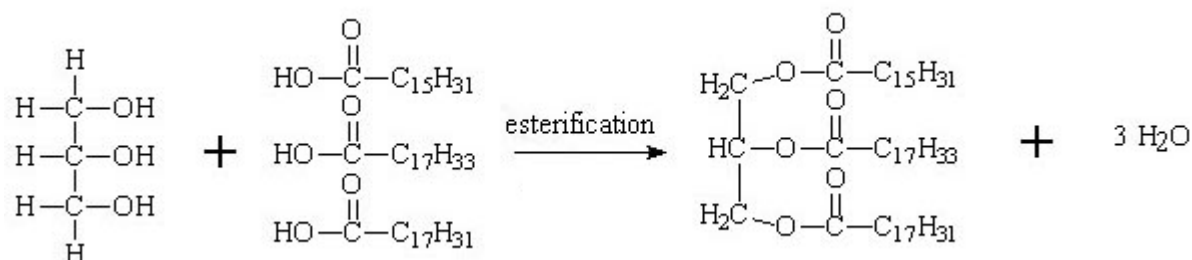
QUESTION 7 Answer is C

QUESTION 8

- (a) hydrolysis
- (b) Enzymes and water
- (c) CO₂ and H₂O

QUESTION 9

(a)



(b) Unsaturated

(c)

