

QUIZ #4

NAME _____

1. Which of the following types of lipids would be classified as a 'simple lipid'?

- A) triacylglycerol
- B) sterols
- C) phosphatide
- D) cephalin
- E) unsaturated

2. The process of emulsification results in the lowering of the _____ of a liquid.

- A) surface tension
- B) temperature
- C) formula weight
- D) solubility
- E) viscosity

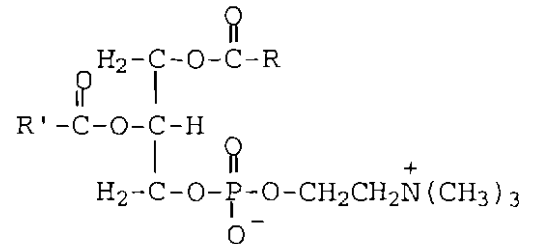
3. Which of the following properties of a lipid will cause it (the lipid) to give a positive saponification test.

- A) cholesterol structure nucleus
- B) insoluble in water
- C) yields a fatty acid upon hydrolysis
- D) degree of unsaturation
- E) yields phosphoric acid upon heating

4. Which of the following is a chemical test used in the evaluation of lipids?

- A) grease spot test
- B) emulsification test
- C) saponification test
- D) solubility test
- E) Both 'B' and 'C' are correct

5. How would you classify the lipid shown at the right?



- A) triacylglycerol
- B) lecithin
- C) saturated
- D) sterol
- E) unsaturated

AACCA

B I O C H E M I S T R Y I

L A B Q U I Z

July 25, 2005

QUIZ #4

NAME _____

1. According to the American Heart Association, what should be the maximum percentage of calories from fat in the American diet?

- A) 10%
- B) 30%
- C) 25%
- D) 15%
- E) 40%

2. Cooking oils are liquids at room temperature because they _____.

- A) are water insoluble
- B) are water soluble at body temperature
- C) have a high percentage of saturated fatty acids
- D) have a high molecular weight
- E) have a high percentage of carbon-carbon double bonds

3. What is the effect of adding lecithin to a mixture of a triacylglycerol and water?

- A) a sterol results
- B) the system has its melting point increased
- C) the triacylglycerol is hydrolyzed
- D) an emulsion forms
- E) the triacylglycerol melts

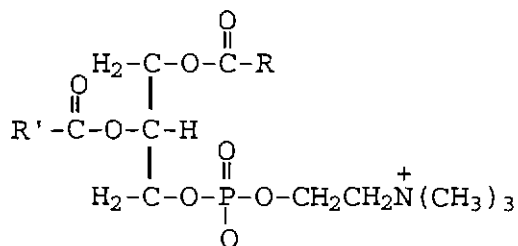
4. If a lipid gives a negative result with the 'bromine test', then one can be certain that the lipid contains _____.

- A) only saturated fatty acids
- B) an agent which prevents emulsification
- C) a polar 'head'
- D) a sterol nucleus
- E) a large number of carbon-carbon double bonds

5. Classify the lipid shown at the bottom of the page.

- A) lecithin
- B) sphingolipid
- C) non-polar fat
- D) sterol
- E) triacylglycerol

B E D A A



B I O C H E M I S T R Y L A B Q U I Z

March 21, 2006

QUIZ #4

NAME _____

- What is the range of 'chain lengths' (number of carbon atoms) demonstrated by most of the fatty acids found in naturally occurring fats and oils?

A) 25 - 27 B) 4 - 6 C) 19 - 23 D) 8 - 12 **E) 14 - 18**
- Which of the following features of a lipid is demonstrated by a positive test with the reagent, $\text{Br}_2/\text{CH}_2\text{Cl}_2$ (bromine-dichloromethane)?

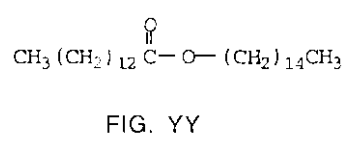
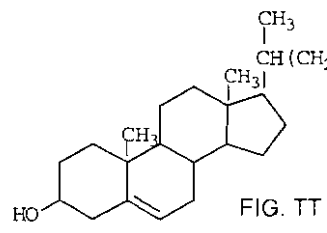
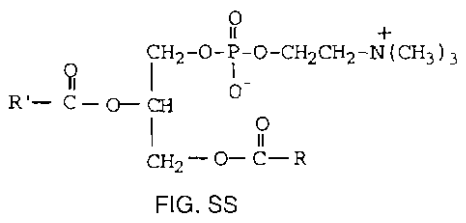
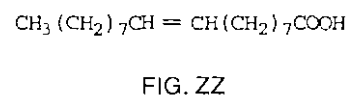
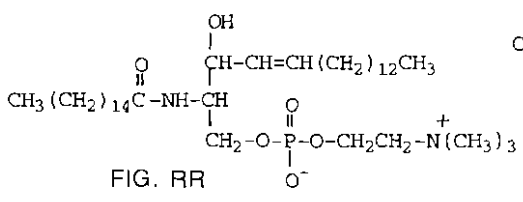
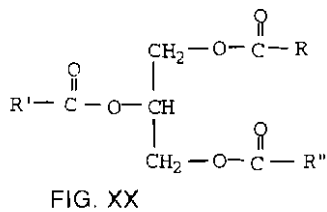
A) sterol content of the lipid
 B) melting point
 C) lipid polarity
D) presence of carbon-carbon double bonds
 E) number of fatty acids present
- Which of the following types of 'lipids' will give a negative saponification test?

A) sterols B) phosphatides C) triacylglycerols D) polar lipids
 E) sphingolipids
- The major difference between 'fats' and 'oils' is in their respective _____.

A) phosphate contents
B) fatty acid contents
 C) melting point ranges
 D) solubilities
 E) reaction to the saponification test
- Which of the items from the display at the bottom of the page could function as an emulsifying agent?

A) Fig. SS
 B) Fig. ZZ
 C) Fig. XX
 D) Fig. YY
E) Both Fig. RR and Fig. SS are correct

EDACE



B I O C H E M I S T R Y I L A B Q U I Z

November 14, 2005

Quiz #4

NAME _____

- The energy content of lipids is about _____ that of carbohydrates.
 - one-half
 - 0.4 times
 - twice
 - 1.25 times
 - three times
- The term 'unsaturated', when referring to fats, implies the presence of one or more _____.
 - carbon-oxygen double bonds in a fatty acid
 - carbon-oxygen double bonds in a sphingolipid
 - carbon-carbon double bonds in a sterol
 - carbon-carbon double bonds in a fatty acid
 - carbon-carbon double bonds in glycerol
- Lecithins, cephalins, and phosphatides are included in the lipid subclassification _____.
 - lecithins
 - compound lipids
 - simple lipids
 - terpenes
 - sterols
- The saponification test for lipids determines if the test lipid will _____ when allowed to react with NaOH.
 - form an unsaturated fatty acid
 - decolorize a solution of bromine in dichloromethane
 - give a positive test for phosphate
 - form a soap
 - result in an emulsion
- One could distinguish olive oil from vegetable fat like Crisco using the reagent _____.
 - sodium hydroxide
 - acetic anhydride/sulfuric acid
 - ammonium molybdate
 - bromine/dichloromethane
 - lecithin

CDBDD

714

B I O C H E M I S T R Y L A B Q U I Z

November 13, 2006

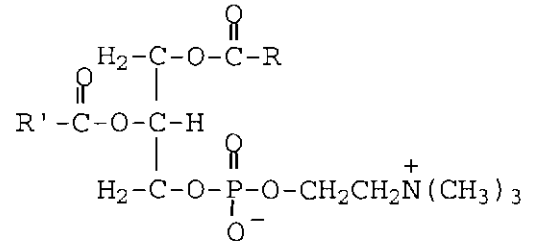
NAME _____

Quiz #4

1. According the lab experiment background information, lipids provide about _____ the energy per gram as carbohydrates.

- A) 1.25 times
- B) one-fourth
- C) three times
- D) one-half
- E) twice

2. Which of the following is the best classification for the lipid shown at the right?



- A) sterol
- B) terpene
- C) compound lipid
- D) simple lipid
- E) lipoprotein

3. Which of the following tests for lipids is based on a physical property of the lipid in question?

- A) emulsification test
- B) saponification test
- C) halogenation test
- D) Lieberman-Burchard test
- E) Both 'B' and 'C' are correct

4. What happens to the reagent, 5% bromine-dichloromethane, when it is added to a system containing a fatty acid which demonstrates one or more carbon-carbon double bonds?

- A) an explosion
- B) the dichloromethane dissolves
- C) the bromine evaporates
- D) the candidate lipid boils
- E) the red bromine color disappears

5. Any lipid which gives a positive ammonium molybdate test (+ for phosphate) is a candidate to function as a(n) _____.

- A) unsaturated fatty acid
- B) triacylglycerol
- C) cholesterol ester
- D) emulsifying agent
- E) sterol

E C A E D