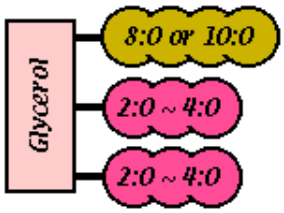
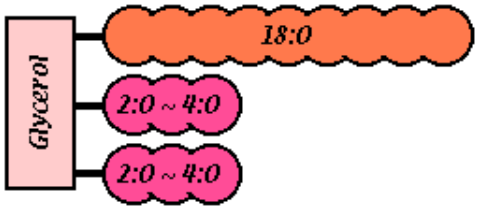
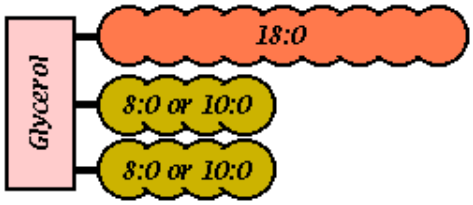
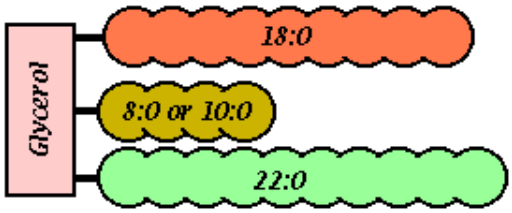
# TEST for CHAPTER 5

**Question 1. What of the followings is "Salatrim"?**

1. 


2. 


3. 

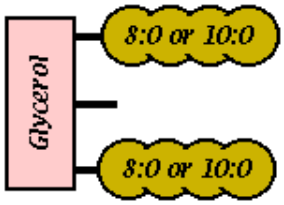

4. 

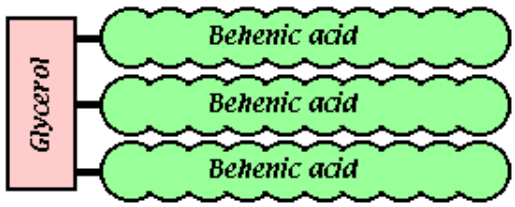

**Question 2. Why are short chain fatty acids necessary for making Benefat™? Choose the correct explanaitons. (There might be one or more correct answers.)**

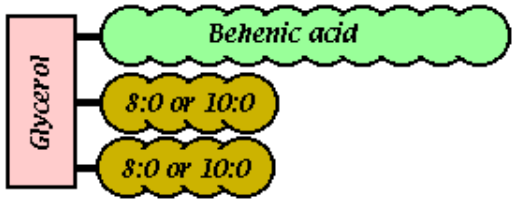
1. Short chain fatty acids have low calories.
2. Short chain fatty acids provide good fravor.
3. Short chain fatty acids soften the TAGs.
4. Short chain fatty acids harden the TAGs.

**Question 3. What of the followings is Caprenin™?**

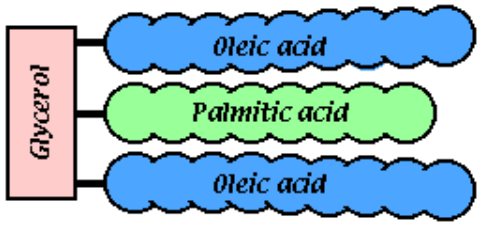
1. 

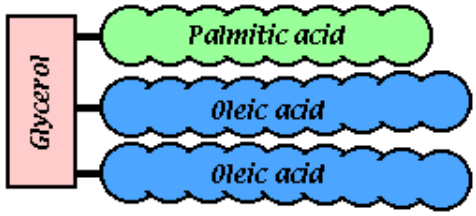

2. 

3. 

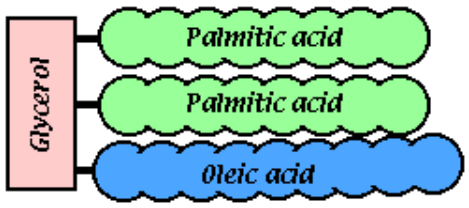

4. 


**Question 4.** What of the followings is Betapol™?

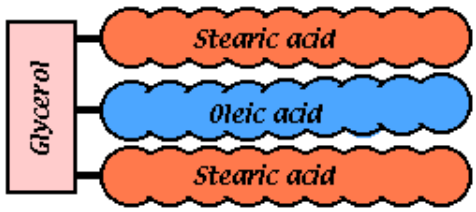
1. 


2. 


3. 

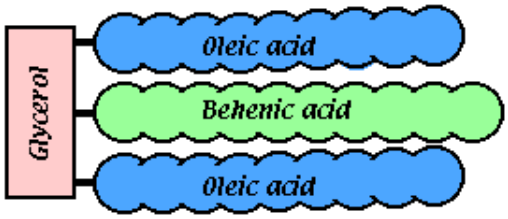

4. 


**Question 5.** What of the followings are related to production of chocolate? (There might be one or more correct answers.)

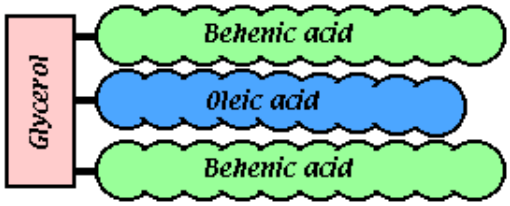
1. 

2.


3.

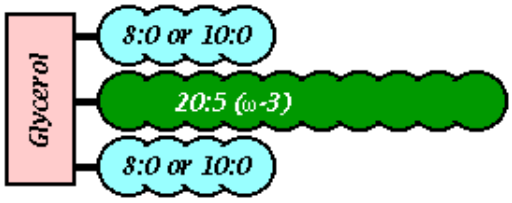



4.

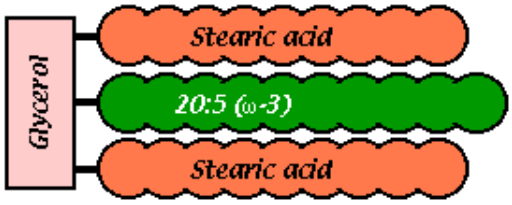



**Question 6.** To design sTAG as an effective carrier of eicosapentaenoic acid, what of the followings is the best structure?

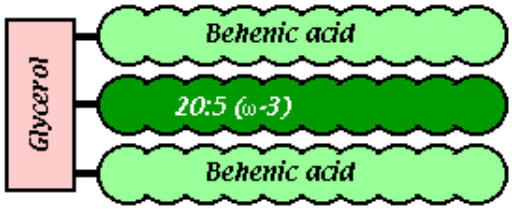
1.



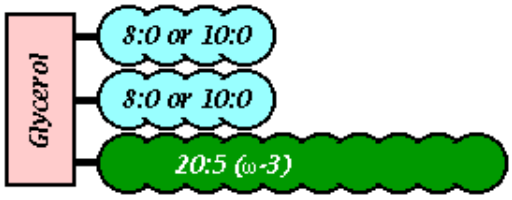

2.




3.




4.



**Question 7. Choose the two substrates necessary for production of Beatapol™ by 1,3-specific lipase-catalyzed acidolysis.**

1. 1,2,3-trioleoylglycerol
2. 1,2,3-tripalmitoylglycerol
3. oleic acid
4. palmitic acid

**Question 8. Choose the two substrates necessary for production of the following TAG by 1,3-specific lipase-catalyzed acidolysis.**


1. arachidonic acid
2. oleic acid
3. 1,2,3-triarachidonoylglycerol
4. 1,2,3-trioleoylglycerol

**Question 9. The following scheme indicates lipase-catalyzed ethanolysis of TAG for the preparation of 2-MAG.**

$$\text{TAG} + 2\ \text{Ethanol} \longrightarrow \text{2-MAG} + 2\ \text{Fatty acid ethylester}$$

**To increase the product yield, the reaction equilibrium should be shifted toward the product formation. What of the followings is effective?**

1. Reduce the pressue
2. Use excess ethanol
3. Use excess of lipase

**Question 10. The following scheme indicates lipase-catalyzed glycerolysis of TAG for the preparation of 1-MAG.**

$$\text{TAG} + 2\ \text{Glycerol} \longrightarrow 3\ \text{1-MAG}$$

**To increase the product yield, the reaction equilibrium should be shifted toward the product formation. What of the followings is effective?**

1. Reduce the pressue
2. Use excess TAG
3. Lower the temperature

**Question 11. The following scheme indicates lipase-catalyzed ester synthesis for the preparation of 1,3-DAG.**

$$\text{Glycerol} + 2\ \text{Fatty acid} \longrightarrow \text{1,3-DAG} + 2\ H_2O$$

**To increase the product yield, the reaction equilibrium should be shifted toward the product formation. What of the followings is effective?**

1. Reduce the pressue
2. Use excess glycerol
3. Lower the temperature

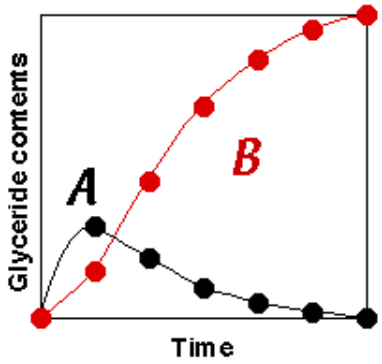
**Question 12. The following scheme indicates lipase-catalyzed acidolysis of TAG for the preparation of symmetrical sTAG.**

$$\text{TAG} + 2\ \text{Fatty acid} \longrightarrow \text{Symmetrical sTAG} + 2\ \text{Fatty acid (released)}$$

**To increase the product yield, the reaction equilibrium should be shifted toward the product formation. What of the followings is effective?**

1. Reduce the pressue
2. Use excess fatty acid
3. Lower the temperature

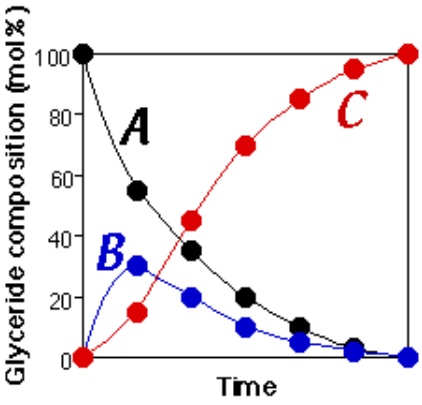
**Question 13. A mixture of 1 molar equivalent of glycerol and 3 molar equivalent of fatty acid was reacted in the presence of 1,3-position-specific lipase under reduced pressure.The following figure shows the time course change of the glyceride composition during the reaction.**




**What does the curve A indicate?**

1. 1(3)-MAG
2. 2-MAG
3. 1,3-DAG
4. 1,2(2,3)-DAG
5. TAG

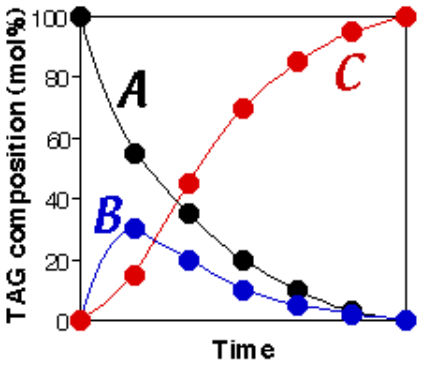
**Question 14.** **The following figure shows typical time course change of the glyceride composition durig ethanolysis of TAG with a 1,3-position-specific lipase.**




1. Curve A
2. Curve B
3. Curve C

A. 1,2(2,3)-DAG
B. TAG
C. 2-MAG

**Question 15.** **A mixture of 1,2,3-tripalmitoylglycerol (1 molar equivalent) and oleic acid (10 molar equivalent) was reacted with 1,3-position-specific lipase. The figure below shows the time course change of the TAG composition during the reaction.**

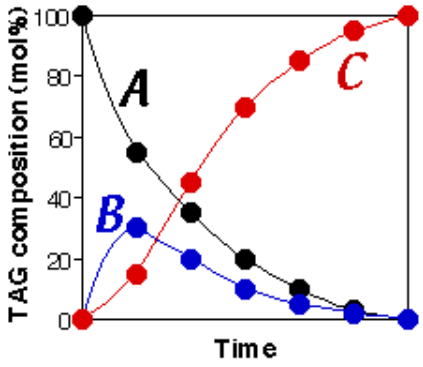


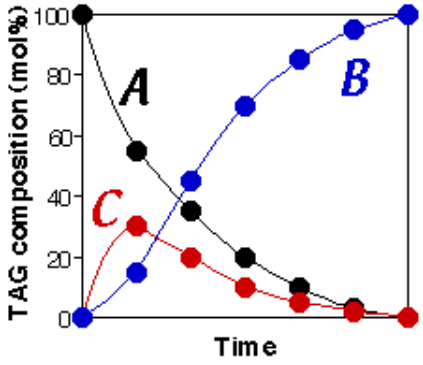

**What does each of the three curves in the figure indicate?**

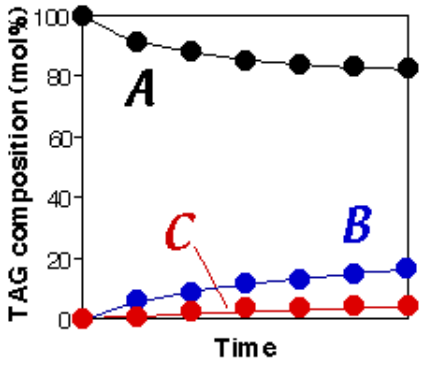
1. Curve A
2. Curve B
3. Curve C

A. 1,2,3-tripalmitoylglycerol
B. 1,3-dioleoyl-2-palmotoylglycerol
C. 1,2(2,3)-dipalmitoyl-3(1)-oleoylglycerol

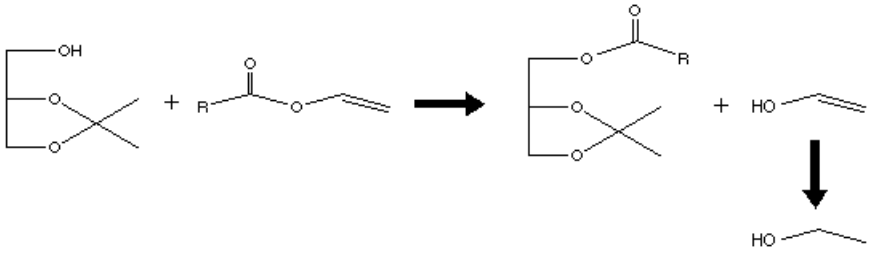
**Question 16.** The reaction in Question 15 was carried out with a mixture of 4 molar equivalent of 1,2,3- tripalmitoylglycerol and 1 molar equivalent of oleic acid. What of the following figures indicates the time course change of the TAG composition?

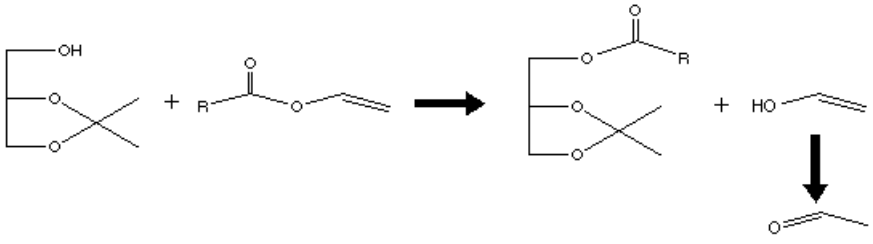
1. 

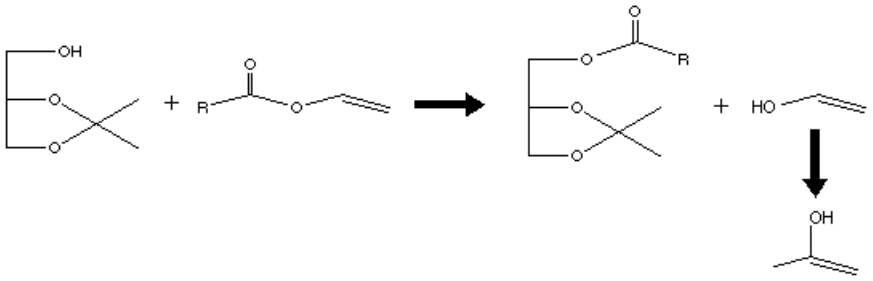

2. 


3. 

**Question 17. Choose the correct scheme for the acylation of 1,2-isopropylideneglycerol with fatty acid vinyl ester.**

1. 

2. 

3. 

4.