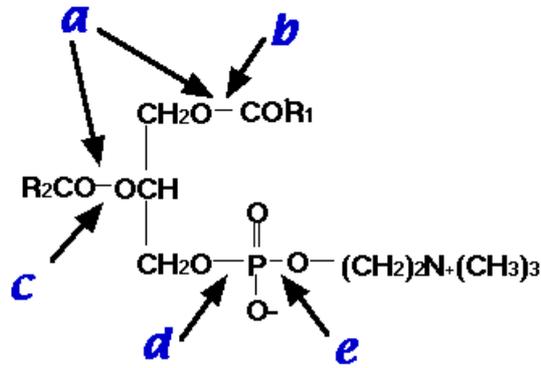


TEST for CHAPTER 6

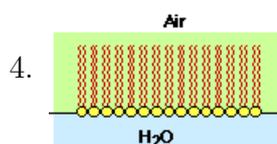
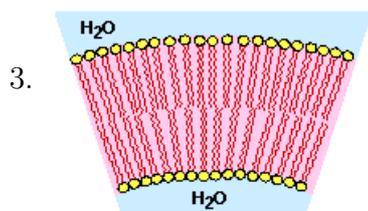
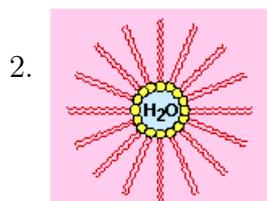
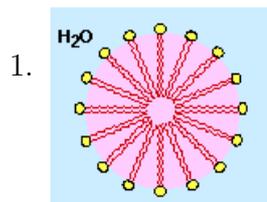
Question 1. The following figure illustrates mode of action of phospholipases.



Choose the correct enzyme that is correspondent to the blank a, b, c, d and e in the figure.

- | | |
|------|---------------------|
| 1. a | A. PLA ₁ |
| 2. b | B. PLA ₂ |
| 3. c | C. PLB |
| 4. d | D. PLC |
| 5. e | E. PLD |

Question 2. Phospholipids form various aggregates with water. Choose the correct name from the right that is correspondent to the figures in the left.



- A. reverse micelle
- B. micelle
- C. monolayer
- D. bilayer

Question 3. Choose the most appropriate application field of lysolecithin.

1. low-calorie fat
2. food emulsifier
3. perfume
4. laundry detergent

Question 4. Fatty acid distribution of a lecithin can be analyzed using PLA₂.

The total fatty acid composition of a lecithin is shown in the row “Total Fatty Acid” of the following table. The row “Lysophospholipid Fraction After PLA₂ Treatment” indicates fatty acid composition of the generated lysophospholipid fraction after hydrolysis of the lecithin with PLA₂. The row “Released Fatty Acid Fraction After PLA₂ Treatment” shows fatty acid composition of the released fatty acid fraction after the PLA₂ treatment.

	Fatty acid A	Fatty acid B	Fatty acid C	Fatty acid D
Total Fatty Acid	30%	40%	25%	5%
Lysophospholipid Fraction After PLA ₂ Treatment	P%	R%	S%	10%
Released Fatty Acid Fraction After PLA ₂ Treatment	Q%	45%	5%	T%

Fill the blanks P, Q, R, S and T to complete the table.

Question 5. Phosphatidylcholine content of a sample can be measured spectrophotometrically by using PLD and other enzymes. Choose the other enzymes necessary for this quantification.

1. catalase
2. choline oxidase
3. peroxidase
4. lipase
5. alcohol dehydrogenase

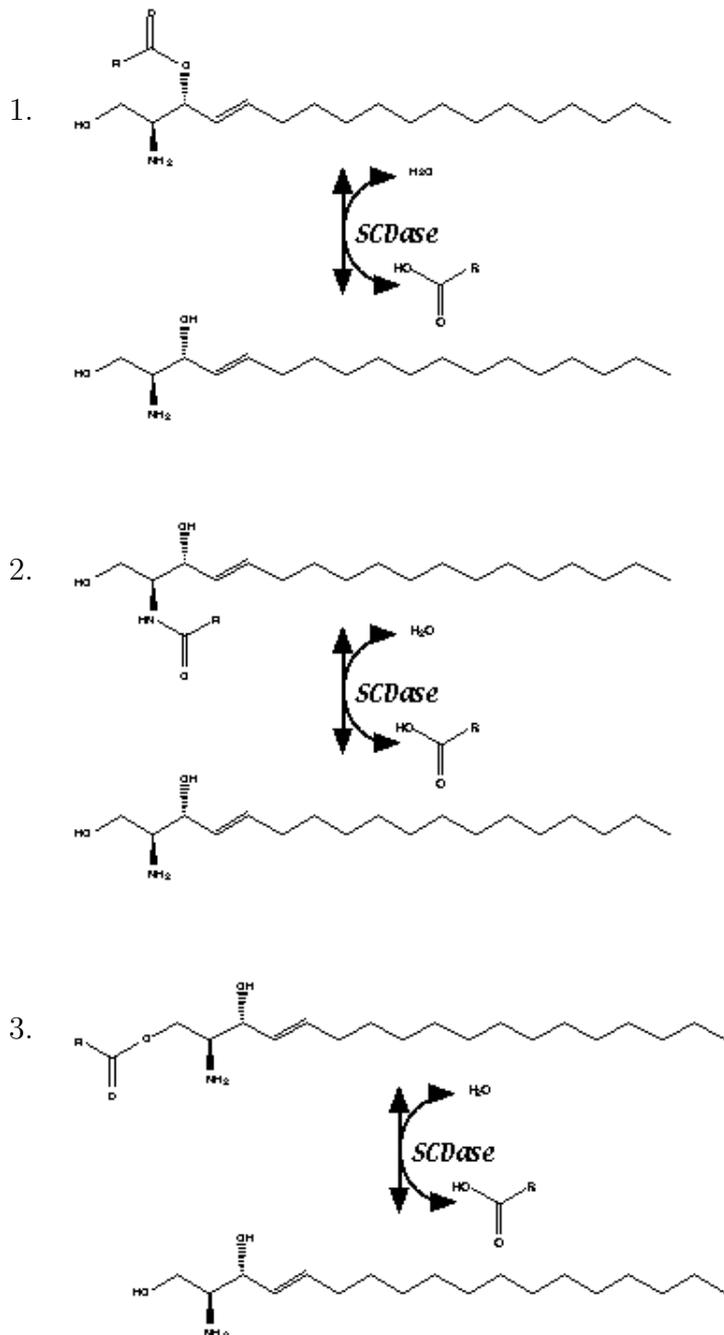
Question 6. Choose the correct starting materials for production of phosphatidylglycerol by transphosphatidylolation (There might be one or more correct answers).

1. glycerol
2. lecithin
3. diacylglycerol
4. glycidol

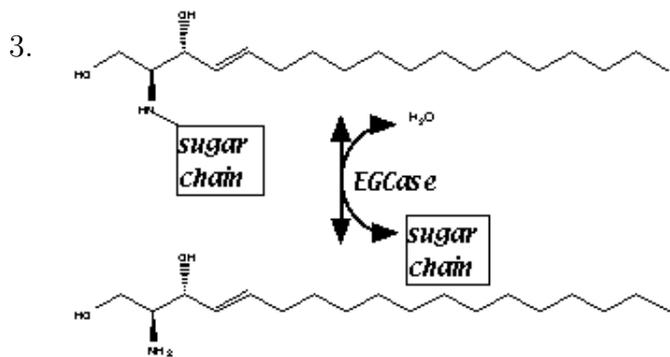
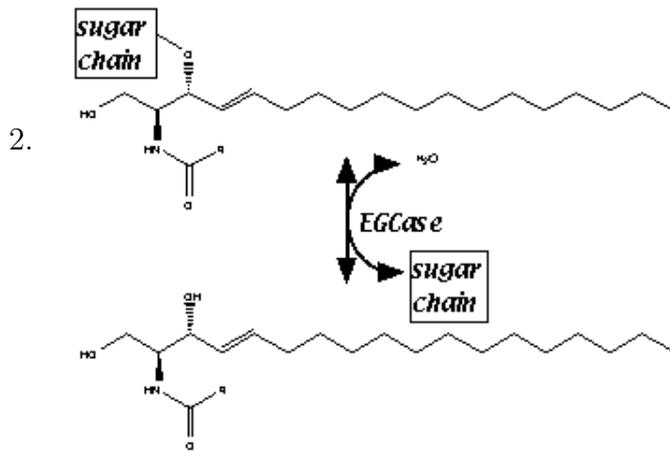
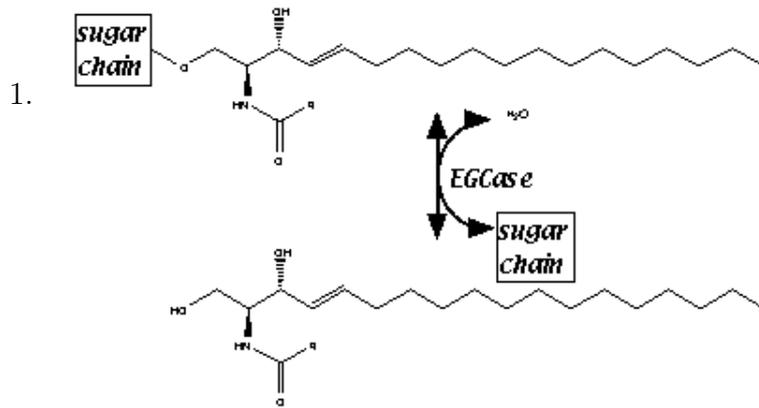
Question 7. What of the followings is believed to have therapeutic effects on several memory-related disorders?

1. phosphatidylethanolamine
2. phosphatidylserine
3. conjugated linoleic acid
4. stigmasterol

Question 8. Choose the correct reaction that is catalyzed by Sphingosine-ceramide-N-acylase.

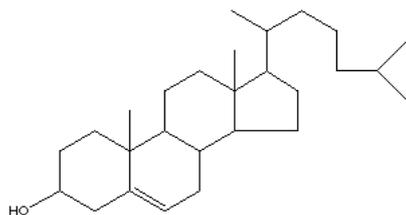


Question 9. Choose the correct reaction that is catalyzed by Endoglycoceramidase.

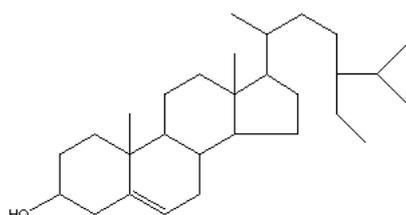


Question 10. What of the following are phytosterols? (There might be one or more correct answers.)

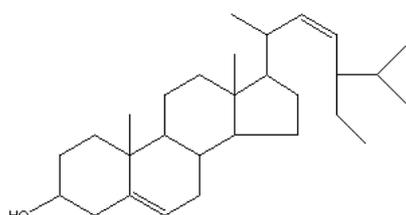
1.



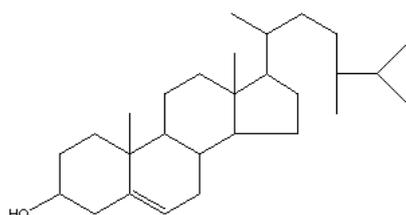
2.



3.



4.



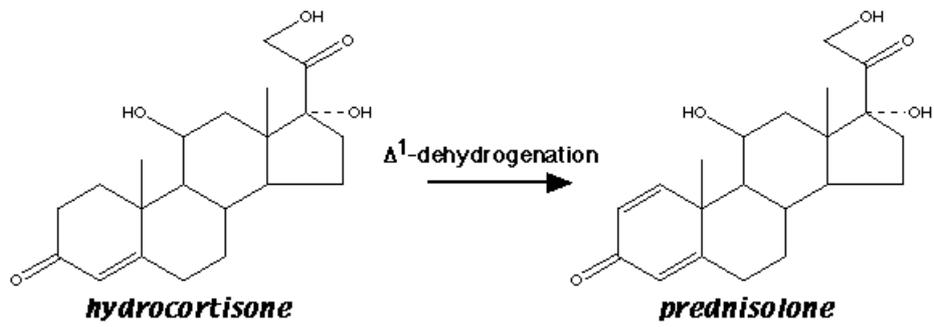
Question 11. Why phytosterols are used for specialty oil products?

1. Because phytosterols are low in calories.
2. Because phytosterols inhibit absorption of cholesterol.
3. Because phytosterols are well-absorbable.

Question 12. What of the followings is currently employed for production of conjugated linoleic acid?

1. Chemical isomerization of linoleic acid
2. Chemical isomerization of linolenic acid
3. Bioconversion of linoleic acid with lactic acid bacteria
4. Bioconversion of linolenic acid with lactic acid bacteria

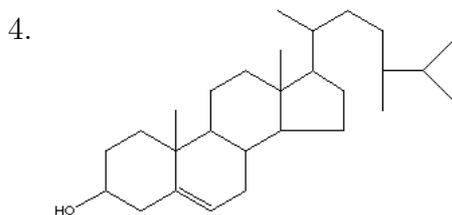
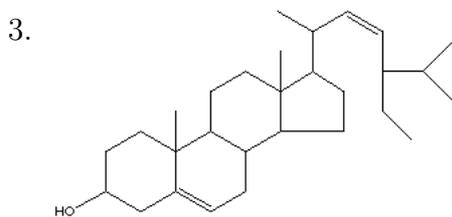
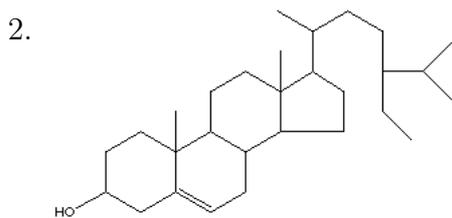
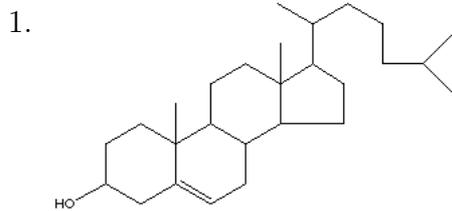
Question 13. The following scheme shows conversion of a steroid.



What of the followings is suitable for this conversion?

1. Resting cell reaction using microbial cells containing the necessary enzyme.
2. Fermentation using microbial cells containing the necessary enzyme.
3. Enzymatic reaction using the necessary enzyme isolated from the microbial cells.

Question 14. What of the following sterols are of animal origin? (There might be one or more correct answers.)



Question 15. What of the followings are the industrial production methods of ceramide? (There might be one or more correct answers.)

1. Fermentation of microorganisms
2. Extraction from plants
3. Chemical synthesis
4. Enzymatic synthesis

Question 16. Choose the possible application field of ceramide. (There might be one or more correct answers.)

1. Cosmetics
2. Food
3. Paint
4. Fuel

Question 17. Phosphatidylcholine is hydrolyzed completely with a PLC, and then completely with a strict 1,3-specific lipase. Assume that non-enzymatic acylmigration is negligible. Choose the expected product.

1. lysophosphatidic acid
2. 2-monoacylglycerol
3. phosphatidic acid
4. 1,2-diacylglycerol

Question 18. Choose the correct isomers of conjugated linoleic acids that are produced by bioconversion of linoleic acid with the resting cells of *Lactobacillus plantarum*. (There might be one or more correct answers.)

1. 9-*trans*, 11-*trans* form
2. 9-*cis*, 11-*trans* form
3. 10-*trans*, 12-*trans* form
4. 10-*trans*, 12-*cis* form