

Graduate School of Medicine, Akita University
Entrance Examination (Master Course)
(Second time)

English

10:00~11:40

December 18, 2025

You have five QUESTION SHEETS and three ANSWER SHEETS.

Write all your answers on your ANSWER SHEETS.

Submit only your ANSWER SHEETS.

Do not open the questions until the supervisor gives instructions.

I Read the following article and answer the questions in English.

(Text omitted)

(Text omitted)

(Text omitted)

(Text omitted)

(Text omitted)

<Sandy Ong. “What can you absorb through your skin?”. BCC Future. 12 March, 2024. <https://www.bbc.co.uk/future/article/20240306-what-can-you-absorb-through-your-skin>, excerpted with partial modifications>

- Q1 Explain the relationship between the rise of social media and the growing trend of ingredient-focused skincare in 70 words.
- Q2 Explain what kinds of molecular properties allow substances to penetrate the skin barrier, and describe the strategies cosmetic companies employ to overcome its limitations in 100 words.
- Q3 Explain what potential risks may arise when the ingredients of skincare products penetrate into the dermis in 100 words.
- Q4 Explain the meaning of “less is more” approach to skincare in 100 words.

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Sample Answer, Point Allocation

Q1 Explain the relationship between the rise of social media and the growing trend of ingredient-focused skincare in 70 words.

[Point Allocation] 20 points

[Sample Answer]

When social media influencers introduce skincare products containing trendy ingredient combinations, the information spreads rapidly, leading to increased purchases that focus on those specific ingredient names. Search trends in the United Kingdom and purchasing data from the United States also indicate this growing ingredient-oriented tendency. (45 words)

Q2 Explain what kinds of molecular properties allow substances to penetrate the skin barrier, and describe the strategies cosmetic companies employ to overcome its limitations in 100 words.

[Point Allocation] 30 points

[Sample Answer]

To pass through the skin, a molecule must have a molecular weight of less than 500 Daltons, be highly lipophilic, and have a slightly acidic pH of around 4.6 to 5.5. To overcome these limitations, companies attempt to enhance skin penetration by converting large molecules into nanoparticles or by using liposomal encapsulation techniques that surround hydrophilic compounds with lipids. Methods employing microneedles have also been developed. (66 words)

Q3 Explain what potential risks may arise when the ingredients of skincare products penetrate into the dermis in 100 words.

[Point Allocation] 20 points

[Sample Answer]

To pass through the skin, a molecule must have a molecular weight of less than 500 Daltons, be highly lipophilic, and have a slightly acidic pH of around 4.6 to 5.5. To overcome these

limitations, companies attempt to enhance skin penetration by converting large molecules into nanoparticles or by using liposomal encapsulation techniques that surround hydrophilic compounds with lipids. Methods employing microneedles have also been developed. (66 words)

Q4 Explain the meaning of “less is more” approach to skincare in 100 words.

[Point Allocation] 30 points

[Sample Answer]

Healthy skin is more than capable of looking after itself, and excessive skincare may actually do harm. For those with healthy skin, using a gentle cleanser and a good moisturizer suited to the skin type, together with sunscreen containing vitamin C or other antioxidants, is sufficient. The key is not to overdo it—dermatologists recommend a “less is more” approach by using products with fewer ingredients to minimize irritation. (69 words)