



TERTIARY AND VOCATIONAL EDUCATION COMMISSION

NVQ Level 5 Semester I Examination – 2020/21

Diploma in Cosmetology **Cosmetic Products for Skin, Nail and Hair Services - O93C001M05**

Answer any **five (05)** Questions.

Time: 3 Hours

Total Marks: 100

Q01.

Skin surface lipid film is a mixture of sebum and keratinocyte membrane lipids, protecting skin from environment. Its composition is unique for the high percentage of long chain fatty acids, and of the polyterpenoid squalene, absent in other human tissues, and in non-human Primates sebum. The cellular-derived component of skin surface lipids consists of phospholipids derived from the plasma membrane of corneocytes, also contributing as the unique component of ceramides characterizing cell envelope.

- A. Briefly explain the harmful environmental stresses for human skin. (04 marks)
 - B. Write down four components of Natural Moisturizing Factors (NMF). (04 marks)
 - C. State the three reasons to use cleansing agents for skin surface. (05 marks)
 - D. What is the major chemical ingredient of a cleansing product? Explain the activity of this molecule in the process of cleansing. (07 marks)
- (20 marks)**

Q02.

No matter what your skin type is, a daily skin care routine can help you to maintain overall skin health and improve specific practices like removal of acne, scarring, and dark spots.

- A. Explain associated benefits of three natural products used for dry skin in daily skin care routine (06 marks)
 - B. Write down three important concerns which should be in your mind when selecting the synthetic skin care products? (06 marks)
 - C. Briefly discuss the potential health hazardous associated with some of skin whitening agents. (08 Marks)
- (20 marks)**

Q03.

Sunburn is red, painful skin that feels hot to the touch. It usually appears within a few hours after too much exposure to ultraviolet (UV) light from sunshine or artificial sources, such as sunlamps. Home remedies can usually provide sunburn relief, but sunburn may take days to fade.

- A. State the most harmful component/components of ultraviolet (UV) radiation, which is responsible for sunburn of the skin. (04 marks)
- B. Sunscreens contain UV filters to protect the skin from sunburn. Define the term “UV filter”. (06 marks)
- C. State the two groups of UV filters based on their mechanism of action and briefly explain those mechanisms separately. (10 marks)
- (20 marks)**

Q04.

To achieve a permanent color, many hair dyes work using a system of ammonia (or ethanolamines in the case of some ammonia-free products), hydrogen peroxide, and p-phenylenediamine. The ammonia pulls apart layers of the hair’s proteins, so that the dye can access the hair shaft. Next, hydrogen peroxide bleaches the hair and helps p-phenylenediamine, one of the primary coloring agents, to become trapping in the hair.

- A. Salon workers are more exposing to hair coloring chemicals as they may perform multiple hair dying sessions in a day. What is the known health risks associated with Ammonia containing products? (06 marks)
- B. Hair dying systems divided into four main categories based on the color durability after the application on hair strands. Write down those categories and compare them using a table. (08 marks)
- C. Discuss the challenges you have to face as a hair stylist when performing a hair color service. (06 marks)
- (20 marks)**

Q05.

Personal image, as it relates to external beauty, has attracted much attention from the cosmetic industry, and capillary aesthetics is a leader in consumption in this area. There is a great diversity of products targeting both the treatment and beautification of hair. Among them, hair straighteners stand out with a high demand by costumers aiming at beauty, social acceptance and ease of daily hair maintenance. However, this kind of treatment affects the chemical structure of keratin and of the hair fiber, bringing up some safety concerns.

- A. Define the virgin hair and discuss the chemical properties of virgin hair surface. (08 marks)
- B. Briefly explain the change of the hair fiber resulted with the application of straightening lotion. (06 marks)
- C. What is the function of neutralizer products in hair straightening process? (06 marks)
- (20 marks)**

Q06.

The Manicure will soak your hands in warm soapy water to soothe and soften dead skin cells. Then, the nail technician will file and buff, clean the cuticle, and massage your hands with a hand cream. Painting the base coat, color, and top coat is next and then a cuticle oil is applied.

- A. Write down two chemical properties of nail polish removers. (04 marks)
- B. What are the ingredients in cuticle remover? (05 marks)
- C. Briefly discuss the functions of nitrocellulose, film modifiers, plasticizers and thixotropic agents in nail polishes. (08 marks)
- D. Discuss the differences between top coats and base coats in nail care products. (03 marks)
- (20 marks)**

Q07.

- A. Discuss the importance of the Materials Safety Data Sheet (MSDS) of a cosmetic product. (06 marks)
- B. What is the shelf life of a cosmetic product? (04 marks)
- C. State an example compound used as hydrating agent in cosmetic products. (04 marks)
- D. Briefly explain the formation of an emulsion in cosmetic product formulation. (06 marks)
- (20 marks)**