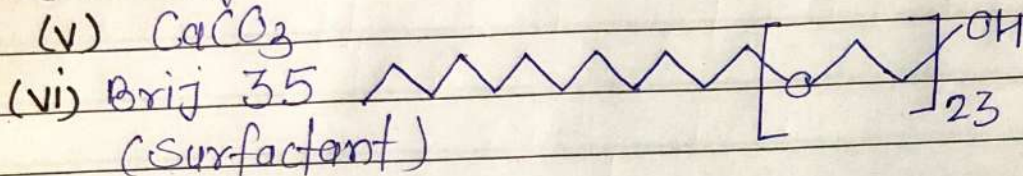
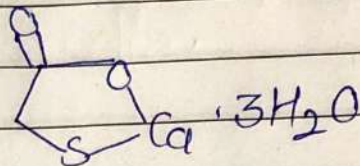


Aim: To prepare hair removing cream.

Requirements:

1. Chemicals:

- (i) calcium thioglycolate
- (ii)  $\text{Ca}(\text{OH})_2$
- (iii)  $\text{Sr}(\text{OH})_2$
- (iv) Cetyl alcohol ( $\text{C}_{16}\text{H}_{34}\text{O}$ ) (Hexadecan-1-ol)
- (v)  $\text{CaCO}_3$
- (vi) Brij 35 (Surfactant)
- (vii) Perfume
- (viii) Distilled water



2. Apparatus:

- (i) Two beakers (150 mL and 250 mL)
- (ii) Hot Plate
- (iii) Stirrer
- (iv) Thermometer.

Theory: There are two methods of hair removal.

Methods

Temporary

- This method provide hairless skin for 1-3 days or a longer time (1-3 weeks)
- There are two different types of temporary hair removal.

- i) Depilation
- ii) Epilation.

Permanent

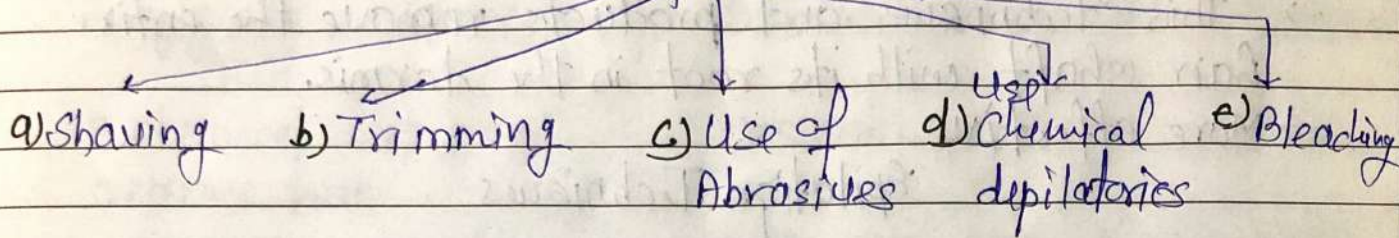
- This method provide hairless skin for years



## (i) Depilatory Techniques:

- This techniques and products remove only part of hair shaft, which protrude above the skin surface.
- Pain free technique, if there is no skin damage.

### Different types of Depilatory Techniques



#### (a) Shaving:

- frequently used method.
- fast
- easy
- Painless
- Effective
- Relatively inexpensive
- It requires shaving tools (razor)

#### (b) Trimming:

- This is performed by using ~~tin~~ scissors.

#### (c) Use of Abrasives:

- Physical removal of skin hair by using pumic stone or gloves made of fine sandpaper.
- Highly irritating method.
- Rarely used.

#### (d) Use of Chemical Depilatories:

- These chemicals dissolve hair fibres causing hair to break, which can be easily washed away from the skin.
- Products include gels, creams, lotions and aerosols.



(e) **Bleaching**: is often referred to as a hair removal technique.

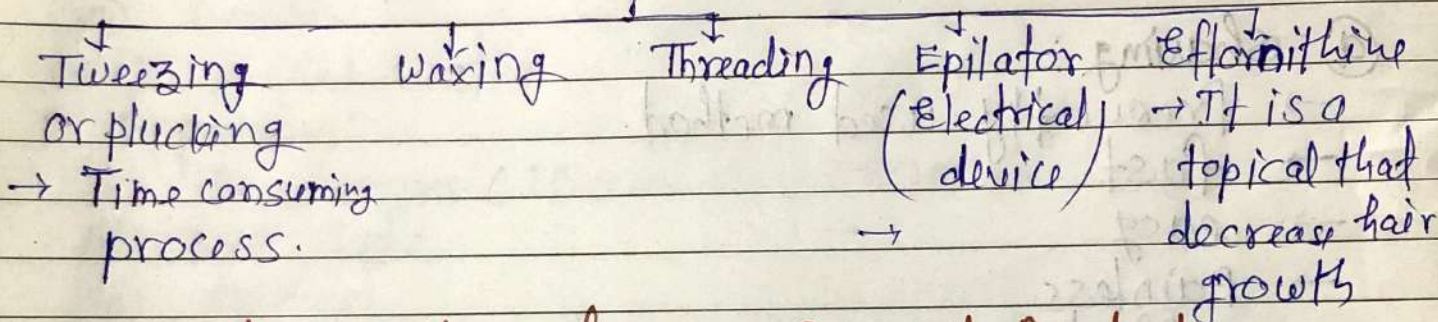
→ It does not remove any part of the hair shaft but changes its color.

## (ii) **Epilatory Techniques**:

→ This techniques and products remove the entire hair shaft with its root in the dermis.

→ More effective

### Epilation Techniques



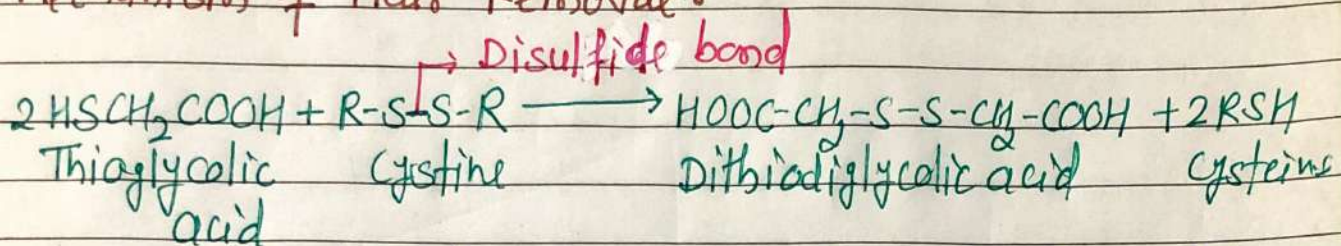
## Required Qualities of Hair Removal Products:

1. Good lubricant properties for skin protection against razor.
2. Hydrating properties to soften the skin and hair.
3. Well-tolerated, non-irritating with pleasant odors.
4. Easy removal from the razor and skin.
5. Creaminess
6. Relatively pain-free
7. Pre-treatment products: make hair removal easier and remove oil and sweat from the skin.
8. After treatment products: hydrate and cool the skin alleviate pain and redness and prevent infections.
9. Long-term stability with appropriate texture.
10. Foaming products: appropriate foam structure, foam density, foam viscosity and foam stability.
11. No leakage from aerosol cans.



12. Appropriate  $p^H$
13. Dermatological safety.

## Mechanism of Hair Removal:



A chemical depilatory is a cosmetic product used to remove hair from skin.

- Common active ingredients are salts of thioglycolic acid and thiolactic acids.
- These compounds break the disulfide bond in keratin and also hydrolyze the hair so that it is easily removed.
- $\text{Ca}(\text{OH})_2$  and  $\text{Sr}(\text{OH})_2$  maintain a  $p^H$  of about 12.
- Depilation does not destroy the dermal papilla and the hair grows back.
- Chemical depilatories are available in gel, cream lotion, aerosol.
- Common brands include Nair, Magic Shave and Veet.

**Procedure:** Mix thoroughly calcium thioglycolate (5.4, %w/w)  $\text{Ca}(\text{OH})_2$  (10, %w/w) and  $\text{Sr}(\text{OH})_2$  (3.40, %w/w) in water (53.0, %w/w). Add  $\text{CaCO}_3$  (22.40, %w/w) cetyl alcohol (4.30, %w/w), Brij 35 (1.20, %w/w) with constant stirring and perfume in the end. Store the product in collapsible plastic container.

**Result:** The yield of the prepared Hair Removing Cream formulation = ..... g.