Exercise No. 10

Object

Prepare and supply 50 ml Peppermint Spirit B.P.C. 1968.

Synonym

Essence of Peppermint.

B.P.C. formula

Peppermint oil	100 ml
Alcohol (90 per cent) to	1000 ml

Procedure

Dissolve peppermint oil in a small amount of alcohol. To this add more of alcohol to produce the final volume. If the solution is not clear to this add 50 gm purified talc and shake, set aside for sometime and then filter to get the clear liquid.

Alcohol content

78 to 82% v/v.

Storage

It should be stored in a well-closed container and in a cool place to prevent the volatilisation of volatile ingredients.

Dose

0.3 to 2 ml.

Uses

It is used as carminative and flavouring agent.

Explanation

Official peppermint spirit is prepared by solution with maceration process but peppermint spirit B.P.C. is prepared by solution method in which peppermint oil is dissolved in alcohol.

Peppermint oil is obtained by distillation from the fresh flowering tops of *Mentha piperita* family *Labiatae*.

Exercise No. 16

Object

Prepare and supply Belladonna Liquid Extract B.P.C. 1968 by using 100 gm of drug.

B.P.C. formula

Belladonna root, in moderately coarse powder	1000 gm
Alcohol (80 per cent)	a sufficient quantity

Procedure

Exhaust the drug with alcohol by reserved percolation process. Reserve the first 400 ml of percolate, evaporate the subsequent percolate under reduced pressure to the consistency of a soft extract and dissolve it in the reserved portion. Determine the proportion of total alkaloids. To this add sufficient alcohol 80 per cent to produce the extract of required strength. Allow to stand for not less than 12 hours and filter, if necessary.

Alcohol content

48 to 60 per cent v/v of ethyl alcohol.

Storage

It should be stored in a well-closed container, in a cool place and protected from light.

Uses

The use of belladonna liquid tract is due to the presence of its principal alkaloids hyoscyamine and atropine. Therefore this preparation is used to decrease secretions of sweat, salivary and gastric glands. It acts as a powerful spasmolytic in intestinal colic. It is also used for the relief of spasm associated with biliary and renal colic.

Explanation

1. This preparation is prepared by reserved percolation process. The percolation process is already described which involves comminution, imbibation, packing, maceration and percolation.

   Reserved percolation process is a percolation process in which first portion (about 3/4th of final product) of the percolate which contains the maximum amount of active constituents is reserved and subsequent percolation is completed as usual until the drug is exhausted but the last part, about 1/4th of final volume is collected separately. The second dilute part is then evaporated to get a syrupy consistency which is then mixed with the reserved portion of the percolate and the final volume is adjusted by adding more of menstruum.

   Reserved percolation process is used for the preparation of liquid extracts as they are more concentrated preparations as compared to tinctures prepared by simple percolation process. Generally alcohol is used as menstruum for reserved percolation process and first portion of percolate which contains the bulk of dissolved active constituents is reserved and only the last portion which is dilute is subjected to evaporation, the concentrated product of which is mixed with the reserved part.

   Advantages

   (i) The reserved part of percolate which contains the maximum amount of dissolve principles is not subjected to heat treatment for evaporation, only the dilute portion of percolate is evaporated.

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Cosmetic Preparations

From time immemorial, people have used cosmetics to enhance their personal appeal by using different kinds of preparations. The cosmetics which are widely used now a days include tooth pastes, tooth powders, mouth washes, shampoos, nail polishes and polish removers, face powders, cold creams, vanishing creams and talcum powder, etc.

According to Drug and Cosmetics Act, the cosmetics are defined as the articles which are intended to be rubbed, poured, sprinkled, sprayed, introduced in, or otherwise applied to any part of the human body for cleansing, protecting, beautifying, promoting attractiveness or altering appearance.

A cosmetic only cleans, beautifies, alters the appearance, adds fragrance or stops the development of bad odour. It changes, increases or decreases the colour but it does not have any medicinal effect on the body. Thus ordinary toothpastes and toothpowders are cosmetics since they are used to clean the teeth and impart a pleasant feeling to the breath. But if such dentifrices include drugs such as antibiotics, fluorides, ammoniated materials and other substances which bring changes in the oral cavity then these preparations can be called drugs although they may not cease to be cosmetics.

Soap is used by almost everyone and is considered more of a bodily necessity than a cosmetic but toilet and bath soaps are specifically excluded from cosmetics. Similarly preparations such as room deodorants, etc., are not cosmetics but if the same deodorant is applied on the body it is termed as cosmetic. The devices or toilet articles used in applying the cosmetics such as tweezers, razor blades and combs should not be included in cosmetics.

Most cosmetics are safe for use by most people but adverse reactions occur in many cosmetics such as deodorants/antiperspirants, hair removers, hair sprays, eye creams, hair colour/dye lighteners, facial skin creams/cleansers and nail polishes.

The cosmetics are mostly used by women and they are more concerned about the physical characteristics like texture, consistency, colour, odour, packaging and general appearance of cosmetics than chemical characteristics.

Exercise No. 20

Object

Prepare and supply 50 ml Calamine Lotion I.P. 1966.

I.P. formula

Calamine	150 gm
Zinc oxide	50 gm
Bentonite	30 gm
Sodium citrate	5 gm
Liquefied phenol	5 ml
Glycerin	50 ml
Rose water of commerce, sufficient to produce	1000 ml

Procedure

Mix the weighed amount of calamine, zinc oxide and bentonite in a mortar. Triturate it with a solution of sodium citrate in about 700 ml of rose water. Add the required quantity of liquefied phenol and glycerin; mix well. To this add more of vehicle to produce the required volume, mix thoroughly so as to get a uniform preparation.

Storage

Store in a well-closed container.

Uses

This lotion is used as an astringent and protective against sun burn. It acts as a soothening agent and gives relief from itching and pain during skin irritation. It is also used in ringworm infection and eczema.

Explanation

1. Calamine is basic zinc carbonate mixed with suitable amount of ferric oxide to impart pink colour. It is often prescribed by dermatologists to give flesh-like colour to lotion or creams.
2. Zinc oxide has mild astringent, protective and antiseptic action. It is widely used in dusting powders, lotions, and ointments meant for the treatment of skin diseases and infections such as eczema, ringworm, psoriasis (chronic skin disease in which red scaly patches develop) and pruritus (itching).
3. Bentonite is a native colloidal hydrated aluminium silicate. It is insoluble in water but swells up nearly seven times its bulk and forms a magma with desirable viscosity. Hence it is used as suspending agent for the dispersion of insoluble substances like calamine etc.
4. Sodium citrate is added to prevent the lotion from being too viscous. It acts as a buffer and maintains the pH appropriate for skin preparations.
5. Liquefied phenol acts as antipruritic because of its antiseptic properties and also because of its local anaesthetic action.
6. Glycerin acts as a hygroscopic thus keeps the skin moist and has soothening effect on the skin.

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Tablets

Tablets may be defined as the solid unit dosage form of medicament or medicaments with or without suitable diluents and prepared either by molding or by compression. They vary greatly in shape, size and weight which depends upon the amount of medicament and the mode of administration. Most commonly the tablets are disk shaped with convex surfaces but they are also available in special shapes like round, oval, oblong, cylindrical, square, triangular etc. They vary greatly in weight. The tablets for oral administration may weigh from 0.2 to 0.8 gm including the diluents but the tablets meant for administration other than oral route may be lighter or heavier.

Tablets are the most widely used solid dosage form of medicament because they offer a number of advantages to the patient, prescriber, manufacturer and the manufacturing pharmacist. Because of these advantages their popularity is continuously increasing day by day.

There are two types of tablets : (a) molded tablets which are prepared by molding the powders in a mold and (b) compressed tablets which are prepared with the help of tablet-making machine by applying pressure on the granules/powders.

There are three methods by which compressed tablets can be prepared :

1. Direct compression
2. Dry granulation
3. Wet granulation

Here only wet granulation will be described.

Wet granulation

Wet granulation is also known as moist granulation. During wet granulation the medicament or mixture of medicaments are mixed with diluent, if required. The mixed materials are moistened with a suitable liquid excipient until a coherent mass is obtained. The moistened material is passed through sieve No. 6 to 20 and the granules so formed are dried in an oven at a temperature not exceeding 60°C. The dried granules are again passed through a proper sieve to obtain the granules of required size. The granules are then mixed with other excipients like the second portion of disintegrants, lubricants and flavouring agents etc. The blended granules are thus ready for compression

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