

7

Hair and its Care

7.1 Introduction

“Hair is the mirror of your health”. Hair, maintained well, enhances your personality. Hair is the most important indicator of beauty and health and hence it is worthwhile to spend time and energy to take care of it.

Beautiful hair flatters your features, face and skin. Your hair can create an illusion of width or height to balance the shape of your face.

7.2 Objectives

After reading this lesson, you will be able to:

- Know hair and its composition
- Understand types of hair and the problems associated with it
- Learn the care of hair, and the products associated with it.

7.3 Hair

We read a lot of magazines, look through numerous advertising leaflets and instructions of products all holding out the promise of glamorous hair and in the end, we remain as ignorant as ever! This is because what we are concerned about is our own hair and it is impossible to give it the correct treatment, unless we first get the necessary knowledge about it.

Our hair forms an integral part of our anatomy. As such, let's ask ourselves a few questions

- How does it grow?
- What is its internal structure?
- Of what substance it is made of?
- What causes its particular colour?

To give our hair the treatment that it needs, we must first be able to answer these questions.

Define Hair

Hair is an appendage of the skin. It is a slender, thread-like outgrowth of the skin and scalp of the human body. There is no sense of feeling in the hair of the head or body, due to the absence of nerves in the hair.

The study of the hair is technically called "Trichology".

Composition of Hair

What substance does hair consist of?

Hair consists of keratin, a protein like substance formed by the basic elements in the cortical cells, arranged in long chains.

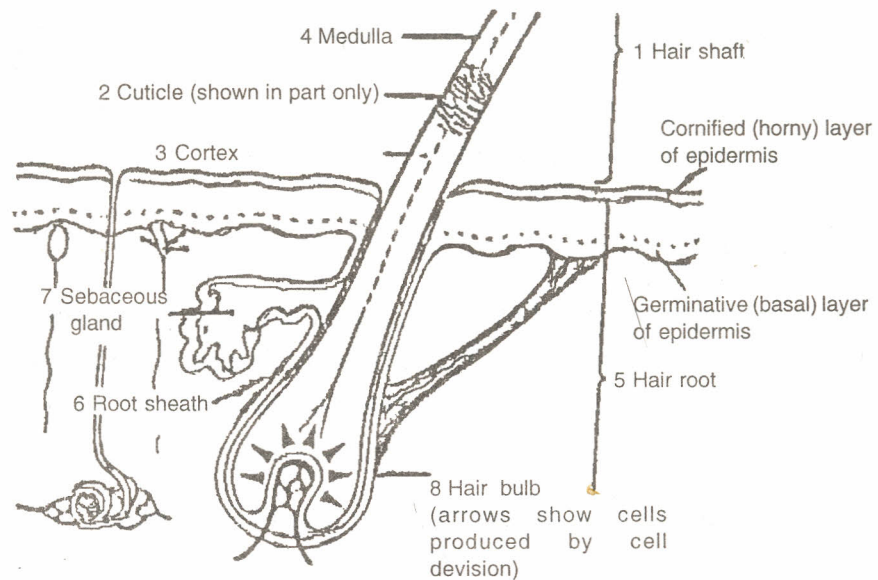
Chemical Composition of Hair

Carbon	50.56%
Hydrogen	6.38%
Nitrogen	17.14%
Sulphur	5.0%
Oxygen	20.85%

The chemical composition varies with the colour of the hair. Light hair contains less carbon and hydrogen and more oxygen and sulphur. Dark hair has more carbon and less oxygen and sulphur.

What is scalp?

The scalp is nothing but skin – The skin or the scalp is particularly rich in two of its constituents – hair and sebaceous glands.



Section through a hair follicle

Division of Hair

Full grown hair, as found on the human body, is divided into two principal part, the hair root and hair shaft.

1. The hair root is that portion of the hair structure found beneath the skin surface. This is the portion of the hair enclosed within the follicle.
2. The hair shaft is that portion of the hair structure extending above the skin surface.

Hair Shaft

Hair extending above the skin surface. Hair is composed of three layers. These layers from the outer surface inwards are

- (a) The cuticle
- (b) The context

- (c) The medulla
- a) **The Cuticle** : The outer layer of the hair is called the cuticle and is made of scales which overlap each other like the tiles on the roof.
 - b) **The Context** : Composed of spindle shaped cells containing elastic fibres. Between and within these cells are very small spaces filled with air. Granules of melanin are found in the cells of the context, giving the hair its characteristic colour. The context forms the bulk of the hair.
 - c) **The Medulla** : In the centre of the hair is a core called the Medulla. In some hairs especially fine ones, there is no medulla, in others it may not be continuous throughout the hair shaft.

Hair Structure

Structures closely associated with the hair root are the hair follicle, hair bulb and hair papilla.

The hair follicle is a tube like depression or pocket in the skin or scalp encasing the hair root. For every hair there is a follicle which varies in depth depending upon the thickness and location of the hair on skin or scalp.

The bottom of this pocket contains finger like projections called the papilla from which the new hair develops. One or more oil glands are attached to each hair follicle.

The hair bulb is a thickened, club shaped structure forming the lower part of the hair root. The lower part of the hair bulb is hollowed out to fit over and cover the hair papilla.

The hair papilla is a small cone shaped elevation found at the bottom of the hair follicle that fits into the hair bulb. Within the papilla is a rich blood and nerve supply, which contributes to the growth and regeneration of the hair. It is through the papilla that nourishment reaches the hair bulb. The papilla has the ability to produce hair cells. It is known as the "mother or productive organ of the hair". As long as the papilla functions, the hair will grow.

Structure of Hair

Structures Connected to Hair Follicles

The arrector pili is a small involuntary muscle attached to the underside of a hair follicle. Fear or cold contracts it, causing the hair to stand up straight. Eye lash and eye brow hair lack an arrector pili muscle.

Sebaceous or oil glands consist of little secular structures situated in the dermis. Their ducts are connected to hair follicles. Secretion of an oily substance, sebum, serves to give luster and pliability to the hair.

Hair Growth

Hair Cycle : If the hair is normal and healthy, each individual hair goes through a steady cycle of events: Growth, Fall and Replacement.

How does Hair Grow?

The actual growth of the hair takes place only in the bulb, where the cells reproduce, the young cells pushing up the old. So hair grows from bottom to top.

At what speed does hair grow?

Hair grows approximately $\frac{1}{4}$ inch per month, i.e. $\frac{1}{16}$ inch per week. These are averages, as the speed of growth varies slightly from person to person. Also it is always greater between the ages of 20 and 30 and faster in summer than in winter.

Hair Dies

Furthermore, the growth of hair is cyclical: after a few years of growth, the hair enters a phase of inactivity, then dies and falls.

Normal Hair Shedding

A certain amount of hair is shed daily. This is nature's method to make way for new hair. The average daily shedding is estimated at 50 to 80 hairs. Hair loss beyond this estimated average indicates some scalp or hair trouble.

Eye brow hair and eye lashes are replaced every four to five months.

Intext Questions 7.1

State whether following statements are True or False

1. Dry hair will leave a large greasy mark.
2. Eyelash and eyebrow have lack an arrector pili muscle.
3. The medulla is the centre and core of the hair.
4. Hair grows faster in winter.
5. Dark hair has more carbon.

7.4 Types of Hair

If your hair does not please you, it will affect the way you look and feel. So the more you'll be able to do with it and less you'll try to expect the impossible thing from it. The first and the most important thing you need to know is what type of hair you have. Is it oily, dry or normal?

Do you have oily, dry or normal hair?

Here is a good way to determine exactly the type of hair that you have

Three days after having washed your hair, and provided you have not used any lacquer or any other product in it, rub the scalp with your finger, then press the finger onto a cigarette paper.

- If your hair is oily, there will be a large greasy mark.
- If the finger mark is very slight, or there is no mark at all, then your hair is dry.
- Your hair is normal if the finger mark on the paper is similar to a perspiration mark.

Does the hair type always remain the same?

For a long time now you have thought that your hair was of the dry type and you have continued to use the same shampoo and the same lotion. Then one day you notice a change-your hair gets greasy quickly. That means that your hair has changed from the dry to oily type. You must therefore change the treatment accordingly.

What are the causes?

The causes can be –

- An endocrinal imbalance. Hormones have a great influence on the state of the hair.
- Shock
- After effects of an operation
- General run down condition

As we have studied earlier, there are three types of hair :

(a) Oily hair:

When oil glands produce more oil than can be absorbed, problems begin.

(b) Dry hair :

It occurs when too little oil is secreted from the glands attached to the hair follicle or the hair shaft. Sometimes bleaching or frequent exposure to the element like wind, sun, salt, chlorinated water, cause natural moisture to evaporate.

(c) Balanced and Normal Hair:

This is the ideal hair condition, one that everyone strives and longs for. Normal hair shining, easy to control and doesn't cry out for washing too frequently. The scalp is clear, the sebaceous glands producing right amount of oil to flow along the shaft and probably the rest of the body in an excellent order.

However, even this type hair won't remain healthy for long if its not given due care and attention. Use a mild shampoo as often as necessary. Always condition and rinse thoroughly. After the hair is exposed to any stress (sun or wind, for instance), give it deep conditioning treatment.

Diseases/Disorder Causes/Remedies of Hair

To keep your hair perpetually in good health is not as easy as one may think. So many diverse factors threaten the health of your hair! Your physical condition – atmospheric elements, your hair style, ill fitting

wigs – colouring or setting products that are too harsh, poor quality cosmetics, etc.

Many hair problems stem from improper care of the scalp; for example, you may think that you have a dry scalp and you fail to wash your hair and scalp often and thoroughly enough. When this happens, oil and dead skin accumulate forming a paste on the scalp that seals the pores and oil glands. As a result the hair appears to be dry.

Various diseases and disorders of hair and their remedy are given below:

OILY HAIR

Problems	Remedies
Your hair is oily if after three days of shampooing you run your fingers over the scalp, press your finger tips firmly on a tissue and greasy finger prints show up.	You can wash exclusively oily hair as often as necessary, daily, if you like. If the scalp is oily, apply a conditioner, but only to the hair. If you wash your hair very often, usually only one application of shampoo is needed each time. A mild shampoo is usually best specially if you use it daily. Take care to rinse thoroughly. Wash your hair comb and brush in warm soapy water twice a week.
If a set will not hold, hair is unmanageable or looks lank with the strands clinging together, it is very likely that the problem is oily hair. The same condition appears if the colour of the hair looks drab because dust is sticking to the hair.	

DRY HAIR

Problems	Remedies
Your hair is dry if, when you run your finger tips along the length of your hair and gently rub, you hear a slight crackle and the hair feels rough. If the hair tends to fly and difficult to control, feels brittle and tends to get tangled, a lack of natural oil is likely to be the problem.	Give your scalp deep penetrating conditioning treatment atleast once a week, if the hair is dry. You can use olive oil or any other vegetable oil as a conditioning, leaving it on over night, before shampooing the following morning. Commercial deep conditioning treatment is usually applied and left on for ½ an hour before rinsing.



Oil Head Massage

SPLIT ENDS

Problems	Remedies
You have split ends if the hair looks fizzy at the tips, feels brittle and is difficult to set. Split ends occur mainly if the hair is dry and out of condition.	A good conditioning rinse will help prevent further damage. Split ends can cause the hair to tangle, but with the conditioner coating the hair shaft, this problems is minimized. Wash hair in cold water and avoid hot rollers or hair dryers. Have the hair trimmed frequently.

POROSITY OF HAIR

Problems	Remedies
Your hair is scruff, if a fine sprinkling of whitish flakes show up. These are dry powdery flakes of dead skin from the scalp. If larger, oily, white flakes appear. It is a more advanced condition of dandruff which is associated with greasy hair.	Keep the scalp from getting too dry by frequent brushing and massaging, wash hair with an anti-dandruff shampoo, rinsing thoroughly to get rid of flakes. Use a conditioner on the hair and scalp to keep it moist. You usually need more conditioner in winter. Prevent the scalp from becoming dry.

DANDRUFF

Problems	Remedies
<p>Dandruff is the presence of small white scales usually appearing on the scalp and hair. Dandruff is also known by the medial term of Pityriasis.</p> <p>There are two types of dandruff-</p> <ol style="list-style-type: none"> 1. Dry type 2. A greasy or waxy type 	<p><i>i) Dry Type</i></p> <p>Frequent scalp treatments and mild shampoos. Regular scalp massage, daily use of antiseptic scalp lotions, application of scalp ointment and electrical treatments will correct this condition.</p> <p>If severe, medical treatment is advisable.</p>



Dandruff

Some non-contagious and non-injectious conditions of skin

<i>Condition</i>	<i>Symptoms</i>	<i>Notes</i>
Psoriasis	Silvered coloured scales. Reddened skin	Inherited condition. Tends to clear up and reoccur.
Dermatitis and eczema	Swelling of skin. Sometimes cracking and weeping of fluid.	Terms are used interchangeably. Contact dermatitis is the major occupational risk to hairdressers
Seborrhea	Greasy hair and skin.	Caused by over-production of sebum. Implicated in acne (see below)
Dandruff (pityriasis)	Flaking of scalp.	Can be dry or oily. Not caused by bacteria. Some people more prone than others.
Acne (acne vulgaris)	'Spots' and 'blackheads' on face.	Not directly caused by bacteria but bacteria are involved, e.g. corynebacterium acne.
Sebaceous cyst (wen)	Appearance of roughly circular 'lumps' on the skin.	Caused by a blockage which prevents release of sebum onto the skin. Sebum accumulates under skin.
Baldness (alopecia)	Hair loss	Most common in 'male pattern' type. Inherited and triggered by male hormone. Other types, alopecia areata an alopecia diffusa have unknown causes. Traction alopecia is caused by physical pulling of hair.

Head lice are contagious and can be transmitted from one person to another by:

- (a) direct head to head contact, e.g. children get them while playing/ swimming which provides a chance for the lice to walk from one

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head to another. This is by far the most frequent method of transmission. Lice cannot jump or fly.

Life Cycle of Head Lice

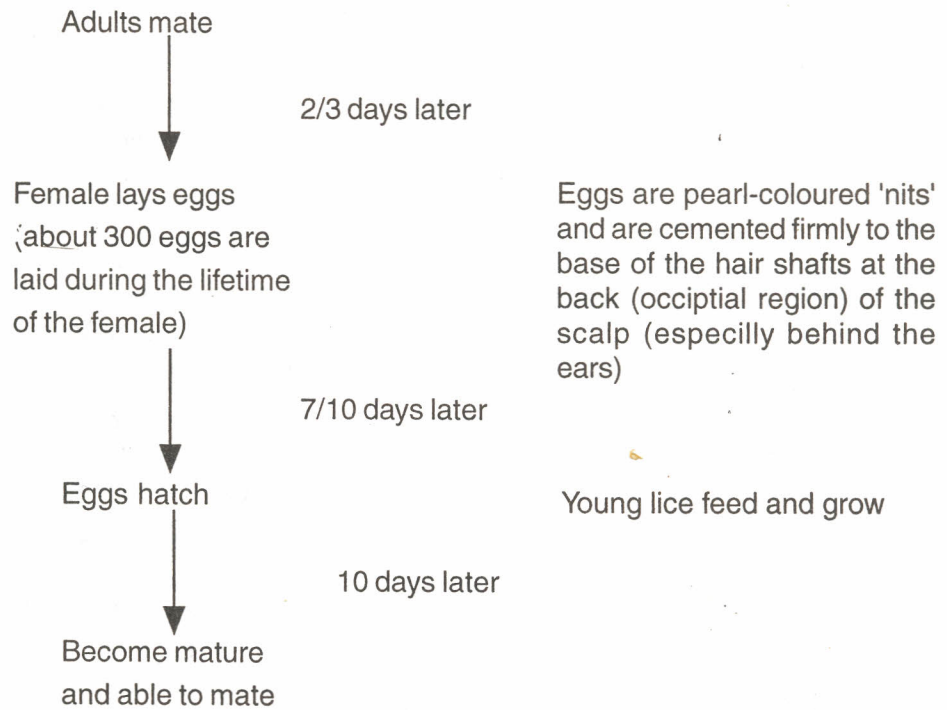


Fig.

The main infections and infestations of skin and scalp

Name of condition	Caused by	Major symptoms operations?	Infections contagious?	Stop hairdressing	Medical advice needed?
Impetigo	Bacteria	Blisters and yellow crust	Yes	Yes	Yes
Boils (furuncles)	Bacteria	Red, raised area in skin. Very tender Central pus.	Yes (if pus released)	Only if boil in scalp area	Yes, if persistent
Barber's itch (sycosis barbae)	Bacteria	Swelling and pus formation in beard hair follicles.	Yes	Yes, on beard area (NB avoid contact in this area)	Yes, if persistent
Ringworm (scalp) tinea capitis	Fungus	Round bald patches (stubble of hair), skin may be inflamed.	Yes (very)	Yes	Yes
Cold sores (herpes)	Virus	Weeping scabs around mouth.	Yes	No, but care to prevent transmission	Not usually, but yes if persistent and extreme
Warts	Virus	Lump in skin (rough or smooth).	Yes	No (but avoid nicking with)	Not usually, yes, if removal wanted
Conjunctivitis	Bacteria or virus	Inflamed eyes, possible weeping of fluid.	Yes	Yes	Yes

Care of Hair by Scalp Massage

The purpose of scalp treatments is to preserve the health and beauty of the hair and scalp. They also assist in overcoming diseases of the scalp, such as dandruff and excessive loss of hair.

How to Massage

The object is not to move the fingers on the scalp, but to move the scalp on the skull. Usually, this is quite easy to do. There are two different techniques for such massaging.

One is to put both hands on the head and then to move the skin backwards and forward on the skull. The other is to use one hand only and with the fingers perpendicular to the scalp, pull the skin, then release it.

Shampooing

The primary purpose of a shampoo is to cleanse the hair and scalp. A shampoo should be treated as a very important service. The bottles and jars together with a clean towel should be displayed in front of the client. She/He must be told what they are and what the solutions are being used for. Modern shampooing is generally carried out at what is



termed "the back-wash basin", which usually has a curved opening, or sometimes a form of tray, so that the client can lean back in a reclining chair and allow her neck to rest on the edge of the basin. She is thus able to look up while her hair is being washed and she does not suffer the discomfort of having shampoo and water running into her eyes or over her face. An alternative method is the "front-washing basin" but where the operator is concerned, there is little difference. The method here described may be considered the standard way of

giving a professional shampoo.

The client should be seated comfortably and the covering gown put on.

It is very wise to give the hair a thorough brushing before shampooing is actually under taken.

At least two towels should be available and it is often an advantage to have a face towel as well. One of the heavy Turkish towels should be placed around the neck and over the shoulders and trucked well in.

The temperature is tested with the hand and regulated by manipulating the tap. When the temperature is right, and not before, the water is poured over the head.

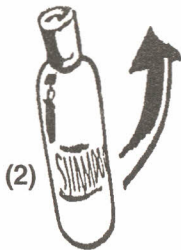
The hair must be soaked thoroughly with plenty of warm water before the shampoo is applied. The hair is lifted with the fingers to make certain that every part, including the thickest and longest parts, is well wetted. The vessel containing the shampoo (this, if it is not of a very concentrated or creamy form, in winter time should be warmed) is taken in the left hand and with the right hand over the scalp (the operator will, of course, be standing on the right) a little of the cream or liquid shampoo is poured or worked into the hair and scalp.

Next comes a gentle rubbing and kneading with the tips of the fingers, using both hand and a firm, but not heavy, pressure. Let the fingers of the one hand operate in opposition to those of the other so that the client's head is not buffeted from side to side. This action is vitally important. The operator must search through the thickest parts of the hair with the tips of the fingers to make certain that every portion of the scalp and length of the hair is thoroughly massaged and that the shampoo is worked into a good lather. More shampoo is added as necessary, cupping the hand to hold it, rubbed into the part of the scalp nearest the basin. When this has been done the hair is rinsed well and the method repeated.

If the hair is very greasy a third soaking may be necessary. This is followed by rinsing which must be done thoroughly. When rinsing is finished the fingers are run down the length of the hair, squeezing it. If the hair is clean and free of shampoo it will give a faint squeak.

The length and ends of the hair are squeezed to remove the surplus

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Hair Care and Shampooing

moisture; the client's head is lifted using the ends of the towel so that the moisture does not run. The balls of the fingers and not the palm of the hand must be used in wiping and drawing the hair back. Rubbing starts at the nape of the neck because most of the moisture will concentrate here; it is the part of the scalp which may become chilled.

When the hair is rough dried so that the water is no longer dripping, the towel is wrapped neatly around and a dry towel is put over the customer's shoulders, she is taken to the dressing table. It is often necessary while the client has her head in the basin to apply a rinse or a reconditioning cream. These are applied generally after the final rinse, by swilling through the head or if a cream, by massaging through the head like a shampoo, and if the directions require for it, thoroughly rinse it out. It is essential to rinse out reconditioning cream thoroughly, and not use too much cream and waste unnecessary rinsing time in trying to get it out.

Brightening shampoos

There is a wide range of these so called shampoos that give a certain amount of colour to the hair. Principally used for brightening the roots of faded hair and to add warm tones to dull colours, or to give a little colour to grayish hair without resorting to more complete colouring.

Generally they are not recommended for bleached, or very bleached, hair. Usually the hair is washed over once with the colour shampoo and rinsed out. The second application is given, and the lather is allowed to remain on the hair for a period up to five or ten minutes.

Medicated Shampoos

Some medicaments are supplied directly to the scalp, and others are mixed with the shampoo. Medicated shampoos may be incorporated into various hair treatments.

Olive-oil, palm-oil, and pine-oil shampoos are useful for dry scalps, and will, in addition to cleansing, give back some of the natural oil or grease to the scalp.

Oil Shampoos

One of the most important duties of the hair-dresser is to care for the hair itself.

The application of hot oils to the hair is a good method of treating dry hair or dandruff scales. The best oil of all for this is pure oil of almonds, which, after it has been warmed, is applied to the scalp generally with a piece of cotton wool. The hair is well massaged with the oil, and then hot towels or a steamer is used to drive some of the warm oil into the scalp. Finally a good shampoo is required.

Conditioners

Because the hair shaft is dead, it cannot repair itself. It is damaged by factors such as:

- (a) heat
- (b) ultra-violet rays in sunlight
- (c) chemical treatments like perming, bleaching and tinting
- (d) brushing and combing, especially backbrushing and backcombing.

These chemical and physical factors tend to make hair rough and porous. This is mainly due to effects on the hair cuticle, although damage to the cortex can also occur.

There are a wide variety of conditioners marketed, often included in other products, e.g. shampoos. These can be grouped into three basic types:

- (a) oil-based conditioners (or emollients)
- (b) substantive types
- (c) acid types

Oil-based conditioners aim to replace the natural oil which has been removed from the hair. Lanolin is a common ingredient.

Substantive-type conditioners contain chemicals which may link onto

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or be absorbed into the hair. Examples include soapless detergents, polyvinylpyrrolidone and the more controversial protein conditioners, sometimes called restructurants.

Acid conditioners are designed to leave the hair with a pH value of between 4 and 6. In this pH range, the cuticle scales are laid tight to the hair shaft and this makes hair smooth and lustrous.

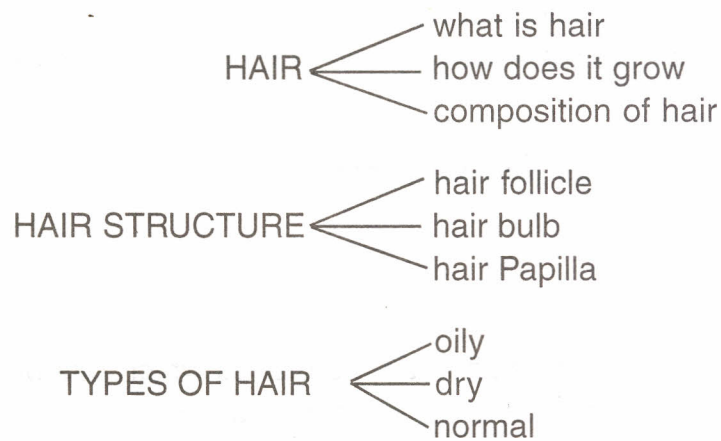
Rehabilitating rinses are mild conditioners, produced with a variety of ingredients which can be used after shampooing. These coat the hair producing body and shine. Many shampoo contain these types of ingredients to condition and shampoo in one operation.

Intext Questions 7.2

Fill in the blanks

1. The purpose of shampoo is to _____ the hair and scalp.
2. Seborrhea is caused by overproduction of _____.
3. Dandruff results in _____ of scalp.
4. Split ends occur when we have _____ hair.
5. _____ conditioning treatment at least once a week is necessary for people with dry hair.

7.5 What have you learnt



SCALP MASSAGE

- benefits
- material required

SHAMPOO

- functions
- qualities
- types
- material required
- procedure

CONDITIONERS

- functions
- types

7.6 Terminal Questions

1. What are the different types of shampoo available in the market?
2. Give five qualities of a good shampoo?
3. Give five precautions to be taken while shampooing?
5. Give example of cream conditioners?

7.7 Answers to Intext Questions

7.1

1. F
2. T
3. T
4. F
5. T

Notes

7.2

- 1. Cleanse
- 2. Sebum
- 3. flaking
- 4. dry
- 5. deep