

Gaining Apex Coaching Centre

(Where Toppers make..... Toppers)

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CHAPTER

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FIBRE TO FABRIC

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1.0 INTRODUCTION

We all use fabrics for different purposes, like for making clothes, bags, curtains, bedsheets, etc. These fabrics are made up of fibres.

Fibre is a hair-like strand of material. It is flexible and can be spun or twisted for weaving, braiding, knotting, crocheting, etc. to make desired products.

Fibres can be obtained in natural form from plants and animals as well as in synthetic form. Man-made or synthetic fibres are either made up of chemicals or by processing natural fibres to create new fibre structures/properties.

All fibres which come from natural sources (animals, plants, etc.) and do not require fibre formation or reformation are classed as natural fibres. The natural fibres are vegetable, animal in origin. Some of the natural fibres like vegetable fibres are obtained from the various parts of the plants. They are provided by nature in ready-made form. For example cellulose fibres such as cotton and linen etc.

2.0 TYPES OF FIBRES

Natural fibres have traditionally been used in all cultures of the world to meet the basic requirements of clothing, storage, building material, and for items of daily use such as ropes and fishing nets.

People in older times used various kinds of natural fibres depending on their local availability.

Fibres obtained from different sources possess different properties. On the basis of sources, we can divide fibres in following two categories.

(1) **Natural fibres:** Sources for these kind of fibres are natural like plants and animals.

These are further divided into two categories.

(i) **Plant fibres:** Hemp, jute, coir, cotton, grass, flax etc.

(ii) **Animal fibres:** Wool, silk etc

(2) **Synthetic or man-made fibres:** These fibres are prepared by human beings with the help of raw materials obtained from petroleum products.

For example : Nylon, polyester, acrylic etc.

In this chapter we will discuss about natural fibres obtained from animals.

3.0 NATURAL FIBRE: WOOL

3.1 Introduction of Wool

Wool is the common name used for soft curly fibres obtained mainly from the fleece of domesticated sheep.

Wool, one of the oldest textile fibres known, has survived the test of time because of its unique natural properties. The basic characteristics that wool possessed in the Stone Age era, for instance, are still the fundamental qualities that make wool unique in this 20th century.

3.2 Animals from which wool is obtained

- (i) Sheep is the animal from which wool is mainly obtained.
- (ii) Yak, reared in Tibet and Ladakh.
- (iii) Angora goats and sheep, reared in Kashmir.
- (iv) Camels, reared in Rajasthan.
- (v) Llama, alpaca and vicuna, reared in South America.
- (vi) Angora rabbits, reared in Kashmir and Himachal Pradesh.

CHECK POST-1

1. Wool is not obtained from:
(A) Yak (B) Camel (C) Goat (D) Woolly dog
2. Find the odd one out:
(A) Wool (B) Polyester (C) Silk (D) Cotton
3. Which of the following is not a synthetic fibre?
(A) Polyester (B) Nylon (C) Wool (D) Acrylic
4. What materials were used for clothes in ancient times?
(A) Animal skins (B) Grass (C) Leaves (D) All of these

3.3 Properties of Wool

Today there are many other textile fibres, but as science has not been able to produce another fibre containing all the natural properties of wool, it remains unique; a masterpiece of design.

Some properties of wool are,

(1) Wool insulates against heat and cold

Because it absorbs moisture, vapour, wool clothing provides superior comfort in both hot and cold weather.

Illustrations

Illustration 1 How wool insulates against heat and cold?

Solution In cold weather even a little moisture on the skin makes it cold, which quickly reduces body temperature. However, by absorbing body moisture a dry layer of air is left next to the skin and this helps to hold the body heat. In addition the crimp in the wool fibres makes them stand apart from each other. As a result, little pockets of still air are trapped between the fibres. This lining of air trapped inside the fabric acts as an insulator.

(2) Wool is elastic

Wool's natural elasticity, greater than that of any other fibre, makes it comfortable to wear because it fits the shape of the body. Wool can be twisted, turned and stretched, and yet it returns to its natural shape. This is why wrinkles disappear from woollen garments when they are rested, and why wool carpets retain their springy pile for many years.

(3) Wool wears longer

Wool not only wears longer, it also keeps its good appearance and stays new-looking longer.

(4) Wool is versatile

Wool fabric, knitwear and carpets are made from a wide range of wool types varying from extra-fine for suits and knitwear through to broad fibres which give carpets their strength and character.

(5) Wool insulates against noise

It absorbs sound and reduces noise level considerably. For this reason wool wallpaper is often used in offices, restaurants, airport terminals, etc.

(6) Wool resists dirt

Wool resists dirt, retains its appearance, and stays cleaner longer. Its ability to absorb moisture prevents a build-up of static electricity and therefore wool does not attract lint and dust from the air. Furthermore the crimp in the wool fibre and the scales on the outside of the fibre assist in keeping dirt from penetrating the surface. The same qualities also make it easier to clean.

(7) Wool is fashionable

Leading designers throughout the world prefer to use wool - it comes in a wide choice of textures, weaves and weights, and is suitable for any style required. It is alive and flexible.

(8) Wool dyes beautifully

Wool dyes so easily and the range of colours is limitless. The scales on the surface of the wool fibre tend to diffuse light giving less reflection and a softer colour.

Illustrations

Illustration 2 Why wool dyes easily?

Solution Wool dyes easily because they can absorb and combine with a wide variety of dyes. This means that the wool holds its colour well as the dye becomes part of the fibre.

4.0 SOME SPECIAL WOOLS

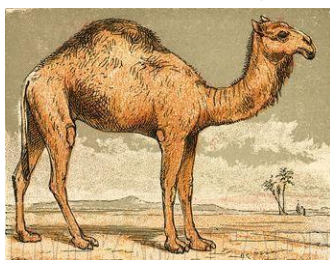
These are hair of animals belonging mainly to the camel and goat families. The fibres are collected only as they fall, or by combing, due to which they are expensive.

(i) **Camels:** Camel hair is obtained from the very soft and fine fur of the undercoat of the camel.

It can be used alone but is usually combined with fine wool.

Fabrics made out of camel's hair are sometimes left in their original colour due to its natural beauty, or may be dyed dark brown.

The alpaca and llama also belong to the camel family and are found in the Andes in Peru, Bolivia and Argentina at altitudes of around 4,000 m. Their undercoat hair is very fine, soft and lustrous. The fibres are hollow, thus making them lightweight.



Arabian & Bactrian Camel

(ii) **Cashmere Goat:** The Cashmere goat gives us the Cashmere fibre. The goats are found in the high plateaus of Asia and the main producers of cashmere wool are China, Mongolia and Tibet. The fibre is luxuriously soft providing great warmth without bulk.



Cashmere Goat

- (iii) **Angora Goat:** The angora goat is originally from the Angora region in Turkey, near the present-day capital of Turkey, Ankara. The fibre obtained from the angora goat is called **mohair**.

Mohair is very similar to wool in chemical composition but differs from wool in that it has a much smoother surface. It is durable, light and warm, and is especially preferred for ladies sweaters and soft coverings for furniture.



Angora Goat

- (iv) **Angora Rabbit :** The angora rabbit is also originally from the Angora (Ankara) region of Turkey. It is well-known for its fine wool.

Each rabbit can only provide a small amount of angora, so the expensive fibre is often combined with other fibres.



Angora Rabbit

CHECK POST-2*Fill in the blanks*

1. The superficial removal of fur from the coat of an animal is called
 2. The process of selecting parents for obtaining special characteristics in their offsprings is called selective
 3. The Cashmere..... is the source of the Pashmina shawls.
 4. Llama and alpaca also yield
 5. Sheep are and prefer grass and leaves.
-

5.0 FROM FIBRES TO WOOL

5.1 Rearing and Breeding of Sheep

The chief source of wool is selectively bred domesticated sheep. Certain breeds of sheep have thick coat of fleece on their body which yield good quality wool in large quantities. These sheep are selectively bred, with one parent being a sheep of good breed. The quality of fleece is also influenced by the nutrition, climate and care.

Sheep are herbivorous animals and graze on all kinds of grasses and leaves which are available in plenty in summer and rainy season. In winter the sheep are kept indoors and fed on a mixture of dry fodder, leaves, pulses, jowar, corn, and oil cakes. Different breeds of sheep are reared in different parts of our country. The quality of wool obtained from them is also different and put to different uses. Following table shows some of the common breeds of sheep reared in different states and the quality of wool obtained from them.

<i>Name of breed</i>	<i>State where reared</i>	<i>Quality of wool</i>
Bakharwal	Jammu and Kashmir	Fine quality (for woollen shawls)
Rampur Bushair	Uttar Pradesh, Himachal Pradesh	Brown wool (for woollen blankets)
Nali	Rajasthan, Punjab, Haryana	Used for making carpets
Lohi	Rajasthan, Punjab	Good quality (for making woollen fabrics)
Marwari	Gujarat	Coarse wool (for blankets)
Patanwadi	Gujarat	Good quality (for hosiery)

5.2 Processing of fleece into woollen fabrics

(a) Shearing of fleece

The fleece of the sheep along with a very thin layer of skin is removed from its body. This process of removing fleece from the body of sheep is called shearing.

The fleece is generally shorn once yearly, in the spring or the early summer. In the regions where the climate is warm throughout the year, shearing is done twice a year.

Machines similar to those used by barbers are used to shear off fleece from the body of the sheep. The shearing is usually done in the warm weather. This enables the sheep to survive without protective coat of fleece. This fleece is generally cut close to the skin of the sheep and is generally removed in one piece.

(b) **Scouring** : The fleece of sheep (or cut hair of sheep) contain dust, dirt, dried sweat and grease, etc. So, the fleece must be cleaned before it can be processed into wool yarn. The fleece (or sheared hair) of sheep is thoroughly cleaned by washing with soap (or detergent) and a lot of water in tanks.

The process of washing the fleece (cut hair of sheep) that removes dust, dirt, dried sweat and grease is called scouring. Scouring makes the fleece of sheep clean. The scoured fleece (or washed fleece) is then dried.

- (c) **Sorting** : The wool is not uniform in all the parts of fleece of a sheep. Some parts of fleece have fine wool fibres whereas others have coarse wool fibres. Some parts of fleece have long wool fibres whereas others have short wool fibres. So, the fleece of even same sheep has wool of different qualities. In sorting, the fleece is sent to a factory where it is broken and separated into sections of different quality fibres. The process of separating the fleece of a sheep into sections according to the quality of woollen fibres. (such as fine, coarse, long, short, etc.) is called sorting. Every section of wool obtained after sorting contains the same quality wool (or uniform wool). The same quality wool obtained from the fleece of large number of sheep are then mixed together.
- (d) **Dyeing** : The natural fleece or hair of sheep (or goats) is white, brown or black in colour. The white woollen fibres obtained by sorting can be dyed in different colours.
- (e) **Combing** : Combing is a method to prepare woollen fibres for spinning the yarn. This is done by using combs having metal teeth. The process of combing straightens the entangled woollen fibres and also removes the small fluffy fibres (called 'burrs') which may be caught in them.
- (f) **Spinning** : The long woollen fibres are spun (or twisted) into thick yarn called 'wool' (which is used for knitting sweaters, etc.). The short woollen fibres are spun into fine yarn and then woven on a loom to make woollen cloth (like shawls, etc.).

From the above discussion we conclude that the sheep's hair is sheared off from the body, scoured, sorted, dyed, combed and spun to obtain wool (for knitting sweaters) and woollen yarn (for weaving woollen cloth). The quality of woollen cloth depends on the breed of sheep from which wool is obtained.

5.3 Uses of wool

- (i) Wool is used for making fabrics, shawls, blankets, carpets etc.
- (ii) Wool is used to cover piano hammers. It is also used to absorb noise in heavy machinery and stereo speakers.
- (iii) Shoddy is made from the used wool. To make shoddy, the existing wool fabric is cut into small pieces and then carded. The carded wool is then respun into yarn. Such a yarn is inferior to the fresh wool and is used for making cheap woollen garments and blankets.

CHECK POST-3

1. What is wool?
2. Name a wool bearing animal found in Tibet and Ladakh.
3. What is shearing ?
4. Name the oily substance found in raw wool.

ACTIVE CHEMISTRY

Aim- To differentiate natural silk and wool fibres from artificial or synthetic fibres

Method- Take about two square pieces with sides of one inch of natural silk, wool and synthetic fibres such as nylon, rayon, etc. with the help of a pair of forceps bring the edge of each piece one by one near the flame of a candle. What do you observe?

Observation-

No.	Characteristics	Cloth	Observation				
1	Burns or melts	silk wool artificial cloth	burns burns melts				
2	Smell	silk wool artificial cloth	no strong odour burning hair characteristic odour				
3	Residue	<table style="border: none; margin-left: 20px;"> <tr> <td style="border: none;">}</td> <td style="border: none;">silk</td> </tr> <tr> <td style="border: none;">}</td> <td style="border: none;">wool</td> </tr> </table> artificial cloth	}	silk	}	wool	dull black hollow bead which crushes easily to powder dark hard bead
}	silk						
}	wool						
4	Any other feature	<table style="border: none; margin-left: 20px;"> <tr> <td style="border: none;">}</td> <td style="border: none;">Silk</td> </tr> <tr> <td style="border: none;">}</td> <td style="border: none;">wool</td> </tr> </table> artificial cloth (nylon)	}	Silk	}	wool	self-extinguishing drops of melted nylon may fall to the ground
}	Silk						
}	wool						

6.0 NATURAL FIBRE: SILK

6.1 Introduction of Silk

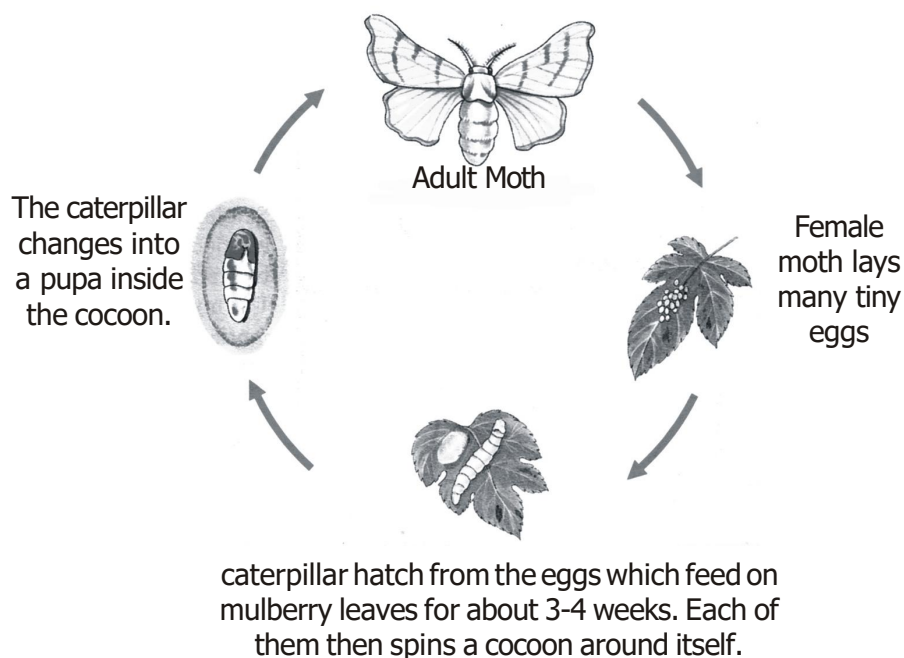
Silk is called 'resham' in hindi. Silk is an animal fibre produced by the silkworm. The newly born silkworm only eats mulberry leaves. Within three to four weeks it becomes an adult and then begins to seek a place to prepare its cocoon.

The silkworm secretes a very fine filament from two glands on its head which solidifies upon coming in contact with air. Through figure-of-eight movements of the head, the silkworm deposits filaments in layers forming the cocoon.

The silkworm takes **three to seven days** to prepare the cocoon. It is formed of about **20 to 39** concentric layers made up of a single thread.

Inside the cocoon the silkworm transforms itself into a chrysalis (called the pupa stage in a moth's life cycle) and then into a moth.

The moth eventually leaves the cocoon, which can then be unraveled.



Life cycle of silkworm.

6.2 Silk production

The production of silk began in China almost 6,000 years ago.

Legend dates this back to 2640 B.C., to Empress Xi Ling-Chi, who discovered that a certain caterpillar's cocoon was created from a single strand of shiny thread.

She not only encouraged the culture of the silkworm but also developed the process of reeling the thread from the cocoon. This was a closely guarded secret for some 3,000 years.

It reached India only around 300 AD and Europe around 550 AD.

Silk production, formally called ***sericulture***, is a very complex and lengthy process. It needs a lot of skill too. Since it is a delicate fibre and needs careful handling.

The first step involves washing the silkworm eggs that had been stored over the winter. Under natural conditions, the eggs hatch only once a year in spring when the ***mulberry trees*** begin to leaf. After the eggs hatch, the larva are spread out on trays to grow.

They are fed chopped mulberry leaves for 20-35 days. Towards the end of the period the worms may need to eat ten times a day, and the trays have to be cleaned regularly.

Then one prepares the frames for the silkworm mats, where the worms will spin the cocoons. Spinning may take about a week, after which the cocoons have to be unraveled.

The cocoons are put in hot water, which kills the worms as well as loosens the filaments, leaving the cocoons to float freely.

The filaments from several cocoons are reeled off together to make a strong thread. To make stronger warp threads, several single threads are twisted together on a spooling frame. The threads are then dyed and wound onto smaller reels for weaving.

6.3 Health hazards in wool production and sericulture

Workers employed in almost all processes of the sericulture industry are adversely affected by a number of diseases.

- (i) **Sorter's disease:** People working in the wool industry sometimes get infected by a bacterium called anthrax. It leads to a fatal blood disease called sorter's disease.
- (ii) **Respiratory diseases:** Inhalation of vapours arising from cocoons undergoing steaming, cooking and reeling produces breathing problems, asthma and other bronchial ailments.
- (iii) **Scabies and other skin infections :** The first step in reeling is the boiling of cocoons in water to kill the worms. As a result of constant dipping in boiling water, the skin of the workers becomes raw and blistered, resulting in peeling of the skin of hands and feet.

6.4 Uses of Silk

Silk fabric is light weight, lustrous, soft, elastic and highly strong in tensile strength. It keeps warm in winter and cool in summer. Silk is commonly used for making expensive dresses for men and women, which are worn on special occasions. In India, most of the silk is used in making sarees and scarfs.

In addition to clothing, silk is used for items such as parachutes, bicycle tyres, bullet proof vests and non-absorbable sutures in surgery.

6.5 Different Varieties of Silk

There is a variety of silk moths which look very different from one another. The silk produced by the silkworms of different varieties of silk moths is different in texture (coarse, smooth, shiny, etc.) Some of the varieties of silk are : Mulberry silk; Tassar silk ; Mooga silk; Kosa silk ; and Eri silk. These silks are obtained from cocoons spun by the silkworms of different types of silk moths. The most common silk moth is the mulberry silk moth. The silk obtained from the cocoons of mulberry silk moth is called mulberry silk. Mulberry silk is soft, lustrous (shiny) and elastic, and can be dyed in beautiful colours. Thus, the most common variety of silk is mulberry silk.

6.6 Natural Silk and Artificial Silk

Natural silk is obtained from the cocoons of silkworms and it is made of a 'protein'. Natural silk is an animal fibre. Artificial silk (called rayon) is obtained from wood pulp and it is made of modified plant material 'cellulose' (Paper is also made of cellulose obtained from wood pulp).

CHECK POST-4

1. Which is the term related to silk production:
 (A) Sericulture (B) Floriculture (C) Apiculture (D) Silviculture
2. The silkworm is:
 (A) A caterpillar (B) A larva (C) Pupa (D) None of these
3. What is the process of obtaining silkfibres from cocoons?
 (A) Reeling (B) Carding (C) Shearing (D) Combing
4. Silk is :
 (A) Proteinaceous (B) Carbohydrate (C) Fat (D) None of these
5. Rampur bushair and Bakharwal are the breeds of
 (A) Sheep (B) Goat (C) Yak (D) Camel
6. When the Silkworm reach their maximum size, they start producing threads from two glands located in :
 (A) Mouth (B) Throat (C) Stomach (D) Head

GOLDEN KEY POINTS

- "Beautiful dresses are designed from silk, which is obtained from cocoon of silkworm".
- If you are caught in a shower or rain, it will take quite some time before the rain penetrates your wool clothing, and so wool keeps you dry. Even if wool does eventually get wet it generates heat and keeps you warm, not cold and clammy.
- There are two types of camels—the Arabian (one-humped) and the Bactrian (two-humped). The Arabian camels are found in the plains while the Bactrian is the camel of the mountains.
- A wool fibre when dry can be extended by about 30 percent. When wet, it can be stretched between 60 and 70 percent. This means that a wool garment gives freedom of movement, especially important for children's clothes and sportswear, when ease of movement is all important.
- India is the world's second largest producer of silk following China. The major silk-producing states are Karnataka, Andhra Pradesh, Tamil Nadu, West Bengal and Jammu & Kashmir. Among these states, Karnataka alone contributes almost two-thirds of the total output.
- It takes about 110 silkworm cocoons to make one good quality silk tie, and about 2000 cocoons to make one silk dress. Like animal hair, silk does not conduct heat, and is therefore also a good insulator, keeping you warm in winter, and cool in summer.
- Australia is the largest producer of wool, followed by former Soviet Republics, New Zealand, China, Argentina. South Africa and Uruguay.
- The female deposits 300 to 400 eggs at a time, and dies immediately after laying eggs. The cocoon spun by the silkworm is made up of a single thread ranging between 600 m to 1500 m in length.
- Wool is so comfortable to wear because its elasticity means garments fit so well and yield to body movement it absorbs moisture, allows your body to breathe, yet never feels damp and clammy.
- The shearing does not hurt the sheep, much the same way as you do not get hurt, when hair from your head is shaved off. It is because the uppermost part of the skin holding the hair is dead. Much the same way the fleece of the sheep grows back as our hair grows after shaving.
- Wool can absorb up to 30 percent of its own weight in moisture before it becomes really damp.
- After doing strenuous work or playing sport it is a good idea to pull on a wool jumper as it allows the body to cool down slowly and chills are prevented.
- The wool from different parts of same sheep varies greatly in length, fibre, fineness and structure. The wool from the shoulders and the sides of the sheep is usually superior to that from the other parts of the body.
- Vicuna is a member of the Llama family and gives us the softest coat cloth in the world. The vicunas are an endangered species so their fibre is rare and very expensive, costing several thousand rupees per yard.
- The quality of wool also varies with different breeds of sheep. Pure merino sheep bears the finest wool. The hardy cross-bred with merino sheep produce longer, but coarse wool.
- Unlike other single colour animal fibres, alpacas produce wool in more than 22 different colours. This reduces the need for dyeing and maintains the natural strength, softness and flexibility of the fibre.

LEVEL-I

1. Wool bearing animals are
(A) Camel and Llama (B) Alpaca and Vicuna
(C) Angora and Cashmere goat (D) All of these
2. The hair part of the fleece of sheep is called
(A) Kemp (B) Wool fibre (C) Grab (D) None of these
3. The general process that takes place at a sheep shearing shed is :
(A) Removal of fleece. (B) Separating hair of different textures.
(C) Washing of sheep fibre to remove grease. (D) Rolling of sheep fibre into yarn.
4. A rare and expensive fibre called cashmere is obtained from
(A) Camel. (B) Rabbit. (C) Goat (D) Sheep
5. Selective breeding is a process of—
(A) Selecting the offsprings with desired properties.
(B) Selecting the parents with desired properties.
(C) Selecting an area for breeding.
(D) Selecting fine hair for good quality wool.
6. Silk is a
(A) Man-made fibre (B) Natural protein fibre
(C) Natural carbohydrate fibre (D) Both (B) and (C)
7. Silk-fibre is produced as
(A) A cocoon covering the silkworm larva (B) A cocoon covering the butterfly larva
(C) Both (A) and (B) (D) None of the above
8. Silk was first discovered and then developed in
(A) Japan (B) Canada (C) China (D) India
9. The science of raising silkworms, so as to obtain silk cocoons, is called
(A) Apiculture (B) Sericulture (C) Aqua culture (D) Both (A) and (B)
10. Silk worms take
(A) 8 days to spin a cocoon (B) 15 days to spin a cocoon
(C) 3-7 days to spin a cocoon (D) One day to spin a cocoon
11. Raw silk consists of
(A) 35 individual silk fibres (B) 45 individual silk fibres
(C) 48 individual silk fibres (D) None of the above
12. When raw silk thread is given a twist in one direction and then two or more of these threads are twisted in the opposite direction at the rate of about 4 turns/cm it is known as
(A) Organize (B) Throwing (C) Crepe (D) Tram
13. The silk produced in Brahmaputra valley is called

(A) Muga silk

(B) Wild silk

(C) Sheer silk

(D) Both (A) and (B)

Class VII : Chemistry

14. Which of the following statements is not true ?
(A) Workers in wool industry generally suffer from Sorter's disease.
(B) Bakhrwal is an indian breed of sheep.
(C) Rayon is a natural fibre.
(D) Shearing is usually done in summer season.
15. Fibres based on cellulose as their structural material are
(A) Flax (B) Cashmere (C) Silk (D) Wool

LEVEL-II

1. Wool is graded according to its
(A) Length (B) Texture (C) Dyeing capacity (D) All of them
2. Out of the following which are the two terms related to silk production.
(i) Sericulture (ii) Floriculture (iii) Moriculture (iv) Apiculture
(v) Silviculture
(A) (i) and (ii) (B) (i) and (iii) (C) (i) and (iv) (D) (i) and (v)
3. Match the words of **Column I** with those given in **Column II**.
- | Column I | Column II |
|----------------------|---------------------------|
| (i) Scouring | (a) Yields silk fibres |
| (ii) Mulberry leaves | (b) Wool yielding animal |
| (iii) Yak | (c) Food of animal |
| (iv) Cocoon | (d) Reeling |
| | (e) Cleaning sheared skin |
- (A) (i) - (e), (ii) - (c), (iii) - (b), (iv) - (a) (B) (i) - (a), (ii) - (b), (iii) - (e), (iv) - (d)
(C) (i) - (e), (ii) - (d), (iii) - (b), (iv) - (a) (D) (i) - (b), (ii) - (c), (iii) - (a), (iv) - (e)
4. Pattanwadi is an indian breed of sheep found in
(A) Punjab (B) Haryana (C) Gujarat (D) Rajasthan
5. Silkworm feeds on
(A) Mulberry soil (B) Mulberry leaves (C) Mulberry water (D) All of them
6. The practice of rearing silkworms for silk is called
(A) Agriculture (B) Pisciculture (C) Sericulture (D) None of them
7. A lot of feeding is required at the
(A) Silkworm stage (B) Cocoon stage (C) Adult stage (D) All of them
8. A piece of fabric burns by giving a smell of burning hair. It is made up of
(A) Natural silk (B) Artificial silk
(C) Natural silk or wool (D) Natural wool

EXERCISE - 2**SUBJECTIVE QUESTIONS*****Very short answer type questions***

1. What is wool ? Name four wool bearing animals.
2. Name two substances removed from raw wool, before manufacturing yarn.
3. Name the domesticated moth whose larva produces silk.
4. Name the plant on which silk larva feeds.
5. Name the strongest variety of Silk.
6. Give two uses of silk, other than for making dresses.
7. What are natural fibres ?
8. List five animals from which wool is obtained.
9. Name three vegetable fibres.
10. What property of silk makes it so attractive ?

Short answer type questions

11. Why are the harvested silk cocoons boiled ? Give two reasons.
12. What is raw silk ? How is it produced ?
13. What do you understand by the term fabric ?
14. Differentiate between the wool obtained from the Cashmere goat and the Angora goat.
15. What is shearing ? When is it done ?

Long answer type questions

16. Differentiate between animal and vegetable fibres. Give two examples of each.
17. Draw a diagram to show the life cycle of a silk moth.
18. Mention the steps in silk production.
19. What adverse effects are observed on health of workers in the silk industry ?
20. Why is silk valued more than other fibres?

EXERCISE - 3**MISCELLANEOUS QUESTIONS****True or false**

1. More the crimps per centimetre in wool, the better is its quality.
2. Muga is a domesticated variety of silk.
3. Yolk is the perspiration of sheep in raw wool.
4. Web is a thin film of wool, emerging out of the rollers of a carding machine.
5. Shoddy fabrics are made from the best variety of wool.

Fill in the blanks

6. Cloth is manufactured using _____ (cereals/fibres)
7. The wool of Arabian camels is used to make _____ (sweaters/carpets)
8. Silk is obtained from the _____ of silkworms, (cocoon/eggs)
9. The best wool comes from the _____ member countries. (IAS/IWS)
10. Inside the cocoon the silkworm changes into a/an _____ (pupa/egg)
11. The cocoons are put in a pot of _____ which kills the worms and loosens the filaments, (hot water/cold water)
12. Before weaving the silk threads are _____ (dyed/printed)
13. The removal of wool from a sheep is called _____
14. _____ is the management and breeding of silkworms for the production of silk.
15. The scientific name of silk moth is _____.

Match the column

16.

	Column I		Column II
(1)	A variety of wild silk having a golden yellow colour.	(a)	Merino
(2)	Science of rearing silkworms so as to obtain silk.	(b)	Muga
(3)	The name of sheep which produces the finest variety of wool.	(c)	Sericulture
(4)	The dried perspiration of sheep found in raw wool	(d)	Worsted
(5)	A woollen fabric having a smooth surface.	(e)	Suint