Lesson 3. Fibre to Fabric

Grade VII

Basic concepts – A Flow Chart

FIBRES

Long, fine, continuous threads or filaments that are obtained from plants and animals.

Animals Fibres

Plant Fibres

Silk

Wool

Sources of Silk

- Produced from cocoon of silkworm Bomyx Mori.
- Rearing of silkworms for obtaining silk is called Sericulture.

Processing of Silk Fibre

- Cocoons are gathered and boiled, exposed to steam or treated in ovens.
- Boiling water dissolves the gummy substance that holds the cocoon filament and silk fibres separate out.
- **Reeling or filature:** The fibres are joined, twisted and then combined with a number of other filaments to make a number of other filaments to make a thread.

Sources of Wool

Wool is obtained from sheep. Yak (Tibet and Ladakh), Angora Goat, Camels, llama and Aplaca (South America).

Parasites

- Organisms that obtain their food from other animals either by living inside (**endoparasites)** or outside (**Ectoparasites)** their body.
- Example: tapeworm and roundworm (inside body), tick and lice (outside body).

Obtaining Wool Fibre

Shearing : Fleece of the sheep along with a thin layer of skin is removed from its body.

Processing of Wool Fibre

- **Scouring :** Sheared hair is cleaned and washed in tanks to remove grease, dust and dirt.
- **Sorting :** Cleaned hair is sent to a factory where hair of different textures are separated.
- Hair is sent into a 'Carding' machine where the loose wool fibres are combed into a sheet and then twisted into rope or silver.
- This silver is twisted and stretched into a yarn
- The yarn is wound to form balls of wool.

Know the Terms

- **Selective breeding :** Some breeds of sheep posses only fine under – hair. This process of selecting parents is termed as selective breeding.
- **Silk :** It is a natural protein fibre, some forms of which can be woven into textiles.
- **Sericulture :** The breeding and management of silkworms for the production of silk is known as sericulture.
- **Life cycle of silk moth :** There are four stage in the development of silk moth.

  Eggs → Caterpillars → Pupa → Silk moth
  Silkworm (Adult)
  (Larva)

- **Discovery of silk :** Silk is supposed to be discovered in China. Accidently, a cocoon dropped into the cup of tea of empress silung-chi, and a tangle of delicate threads separated from the cocoon. Silk industry began in China countries. The route they travelled is still called the 'Silk route'.

Objective Type Questions

(1 Mark each)

I. Multiple choice questions

1. Which of the following does not yield wool?

   a. Yak b. Camel c. Goat d. Woolly dog

2. Which of the following is not a breed of sheep?

   a. Lohi b. Nali c. Moonga d. Bakharwal

3. Which one is not a part of the process of wool manufacturing?

   a. Carding b. Rolling c. Reeling d. Scouring

4. Silk is a

   a. Staple fibre b. Rough fibre c. Filament fibre d. Texture fibre

5. Which one of the following is not a variety of silk?

   a. Nali b. Tassar c. Mooga d. Drganza

6. Which one is animal fibre?

   a. Cotton b. Silk c. Polyester d. Jute

7. Burns are the

a. Wool obtained from the camel b. Wool obtained from the goat

c. Small fluffy fibres in wool d. Pupa

8. Silkworm is called

a. Adult silk moth b. Female silk moth c. Caterpillar d. Pupa

9. The rearing of silkworms for getting silk is called : **(NCERT Exemplar)**

a. Cocoon b. Silk c. Sericulture d. Silviculture

10. Which of the following is not a type of silk ? **(NCERT Exemplar)**

a. Mulberry silk b. Tassar silk c. Mooga silk d. Moth silk

11. Paheli wanted to buy a gift made of animal fibre obtained without killing the animal. Which of the following would be the right gift for her to buy ? **(NCERT Exemplar)**

a. Woollen shawl b. Silk scarf c. Animal fur cap d. Leather jacket

12. Silk fibre is obtained from **(NCERT Exemplar)**

a. Fleece of sheep b. Cotton ball c. Cocoon d. Shiny jute stalk

13. Wool fibre cannot be obtained from which of the following ? **(NCERT Exemplar)**

a. Goat b. Llama c. Alpaca d. Moth

14. Selective breeding is a process of : **(NCERT Exemplar)**

a. Selecting the off springs with desired properties

b. Selecting the parents with desired properties

c. Selecting an area for breeding

d. Selecting fine hair for good quality wool

15. The general process that takes place at a sheep shearing shed is : **(NCERT Exemplar)**

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

16. The term sericulture is used for **(NCERT Exemplar)**

a. Culture of bacteria b. Rearing of silkworm

c. Making silk fabric from silk yarn d. Production of sarees

17. Reeling of silk is : **(NCERT Exemplar)**

a. A process of making silk reels b. Spinning of silk fibres

c. Weaving of silk cloth d. The process of taking silk threads from cocoon

18. Silkworms secrete fibre made of : **(NCERT Exemplar)**

a. Fat b. Cellulose c. Protein d. Nylon

1. d	2. c	3. c	4. c	5. a	6. b	7. c	8. c	9. c
10. d	11. a	12. c	13. d	14. b	15. a	16. b	17. d	18. c

II. Multiple choice questions

1. Which of the following is animal fibre?

a. Cotton b. Silk c. Polyester d. Jute

2. We can obtain wool from

a. Goat b. Yak c. Sheep d. All of these

3. Burrs are the

a. Wool obtained from the camel b. Wool obtained from the goat

c. Small fluffy fibres in wool d. All of these

4. Silkworm is called

a. Adult silk moth b. Female silk moth c. Caterpillar d. Pupa

5. We can get silk from

a. Cocoons b. Moth c. Pupa d. Eggs

1. b	2. d	3. c	4. c	5. a

I. Fill in the blanks

1. _____ are small fluffy fibres of sheep.
2. Silk fibres are made up of _____.
3. The low grade silk is obtained from the filaments of _____cocoons.
4. The thick coat of _____on sheep create an insulating barrier.
5. Rearing of silk worms to obtain the _____ is called _____
6. Silkworms are _____of warm moth.
7. Silk and wool are _____ fibres.
8. The dried perspiration of sheep is called _____.
9. Pupa is the next stage of _____in the life history of silk moth.
10. Sorting is the next step of _____ in the manufacture of wool.
11. _____and _____fibres are obtained from animals.

(NCERT Exemplar)

12. Silk fibres come from _____of silk_____. **(NCERT Exemplar)**

13. Wool yielding animals bear _____ on their body. **(NCERT Exemplar)**

14. Hair trap a lot of_____ , which is a poor _____ of heat. **(NCERT Exemplar)**

15. The hair of sheep are called _____ .

1. burrs	2. proteins	3. damaged
4. hair	5. silk, sericulture	6. caterpillars
7. animal	8. suint	9. caterpillar
10. scouring	11. silk, wool	12. cocoons, moth
13. hair	14. air, conductor	15. fleece

II. Fill in the blanks

1. Silk and wool are _____ fibres.

2. Silk fibres are made of a _____.

3. Rearing of silkworms to obtain the _____ is called _____.

4. Silk is obtained from _____.

1. Animal	2. Protein	3. Silk, sericulture	4. Cocoons

I. Match the following

Column I	Column II
i. Sheep	a. Silkworms
ii. Camel	b. Pashmina
iii. Mulberry leaves	c. Wool
iv. Kashmiri goat	d. The rearing of silkworm to get silk
v. Sericulture	e. Fur

i. c	ii. e	iii. a	iv. b	v. d

II. Match the following

1. Column A	Column B
a. A woollen fabric with a smooth surface	i. Wool yielding animal
b. Washing of hair removed from sheep	ii. Rearing of silkworm to get silk
c. Mulberry leaves	iii. Wool giving hair
d. Anthrax	iv. Silkworms
e. Sericulture	v. Scouring
f. Fleece	vi. Covering of cater pillars
g. Cocoon	vii. Worsted
h. Yak	viii. Sorter's disease

a. vii	b. v	c. iv	d. viii	e. ii	f. iii	g. vi	h. i

2. Column A	Column B
a. Yak wool	i. Sheared hair
b. Angora goats	ii. Silkworm
c. Mulberry leaves	iii. Tibet and Ladakh
d. Scouring	iv. Jammu and Kashmir

a. iii	b. i	c. ii	d. iv

3. Column A	Column B
a. Pashmina shawl	i. Camel wool
b. Woollen carpet	ii. Angora wool
c. Baby blanket	iii. Kashmir goat
d. Woollen sweater	iv. Sheep wool

a. iii	b. i	c. ii	d. iv

I. True or False

1. Silk is obtained from the leaves or mulberry.
2. Wool and silk are the plant fibres.
3. Silk is obtained from the cocoons.
4. Silk fibres are chemically proteins.
5. Mulberry silk moth is the most common silk moth.

1. False	2. False	3. True	4. True	5. True

Quiz Time

1. The under fur of Kashmiri goat is very soft, which is used to make fine shawls. Name these shawls.

2. Name two types of fibres which are obtained from animals.

3. What is the process of selecting parents for obtaining special characters called?

4. Name the places where yak wool is common.

5. Where are the Angora goats found?

6. Name the term used for rearing of silk moth for obtaining silk.

7. Which are the source of angora wool?

8. What is the most common silk moth?

9. What are burrs?

10. Name the stage in which caterpillars enter in the life cycle of silk moth.

1. Pashmina shawls
2. (i) Wool (ii) Silk
3. Selective breeding
4. (i) Tibet (ii) Ladakh
5. In hilly regions like Jammu and Kashmir.
6. Sericulture
7. Angora goats
8. Mulberry silk moth

9. The small fluffy fibres in wool.

10. Pupa.

NCERT Corner

Intext Questions

1. Why do wool yielding animals have thick coat of hair on their skin?

The wool yielding animals have a thick coating on their skin, which entraps a lot of hair. Since this hair is a poor conductor of heat, it keeps them warm.

2. How many fibres do sheep have?

Sheep have two types of fibres

i. The coarse beard hair and

ii. The fine soft underhair close to the skin.

3. From which animal do we get Angora wool?

Angora wool is obtained from Angora goats which are found in hilly regions of Jammu and Kashmir.

4. From which goat's wool, do we make Pashmina Shawls?

Since the under fur of Kashmiri goats is very soft, it is woven into Pashmina Shawls.

5. Mention the names of some Indian breeds of sheep. Also state the quality of wool obtained from them. In which states do we find this breeds of sheep ?

S. No.	Name of Breed	Quality a wool	State where found
1.	Lohi	Good quality wool	Rajasthan, Punjab
2.	Rampur bushair	Brown fleece	Uttar Pradesh, Himachal Pradesh
3.	Marwari	Coarse wool	Gujarat

6. Why is it that in summer only, the hair used for making wool are removed ?

In hot season, these sheep require no protection against winter, so they can survive without any protective coating.

7. Describe the processing of fibres into wools ?

Following steps are involved in making wool.

(i) Shearing : First of all, the fleece of the sheep along with a thin layer of the skin is removed.

(ii) Scouring : Sheared skin is thoroughly washed in tanks to remove grease, dust and dirt.

(iii) Sorting : This involves the separation of hairs of different textures.

(iv) Drawing out the fibre : The small fluffy fibres popularly known as 'burrs' are picked out from the hair first, then scoured, dried and finally drawn into fibres.

(v) Dyeing : Finally the fibres can be dyed into a variety of colours.

8. What are caterpillars ?

The larva hatched from the eggs of silk moth are known as caterpillar.

9. What do you mean by 'pupa' ?

When the caterpillar is ready to enter the next stage of its life cycle, it is called 'pupa'.

10. Mention the usage of silk fibre.

Basically it is used in making silk fibres.

11. How is silk obtained from cocoon ?

(i) First, the eggs obtained from silk moth are warmed to a suitable temperature, as a result, the caterpillar comes out.

(ii) Next, the caterpillars are kept in a bamboo tree along with freshly chopped mulberry leaves, where after 25 to 30 days, the caterpillars spin the cocoon.

(iii) Cocoons are collected and boiled, where upon silk fibres separate out by themselves. This is known as reeling of the silk.

12. Boojho is wondering why it hurts when someone pulls his hair but not when he goes for a haircut ?

When someone pulls our hair, it hurts because it's root is connected to the skin which has sensation. But, during haircut the tip of the hair is cut which is dead and does not have any sensation. So hair-cut does not hurt.

13. Boojho is wondering why a cotton garment cannot keep us as warm in winter as a woollen sweater does ?

Cotton garments are thin and does not trap air. Wool is thicker than cotton and have spaces in which air traps. Air is a poor conductor of heat and so it prevent heat coming out of our body. So, wool gives better protection from cold than cotton.

14. Paheli wants to know if the cotton thread and silk thread are spun and woven in the same manner.

No.

Textbook Questions

1. You must be familiar with the following nursery rhymes :

(i) 'Baa baa black sheep, have you any wool'

(ii) 'Mary had a little lamb, whose fleece was white as snow'.

Answer the following :

(a) Which parts of the black sheep have wool ?

(b) What is meant by the white fleece of the lamb ?

(a) Wool is obtained from the fine soft under hair close to the black sheep's skin.

(b) White fleece means the white hair of lambs which is used for making wool.

2. The silkworm is (a) caterpillar, (b) a Larva. Choose the correct option.

(i) a **(ii) b** **(iii) both a and b** **(iv) neither a nor b.**

(iii) both a and b.

3. Which of the following does not yield wool ?

(i) Yak **(ii) camel** **(iii) goat** **(iv) woolly dog.**

4. What is meant by the following terms ?

(i) Rearing, (ii) Shearing, (iii) Sericulture.

(i) Rearing : Raising the sheep and taking its care is called rearing.

(ii) Shearing : For obtaining wool, the fleece of the sheep together with a thin layer of skin is taken off its body. This process is known as shearing.

(iii) Sericulture : By sericulture we mean the rearing of silkworms for obtaining silk.

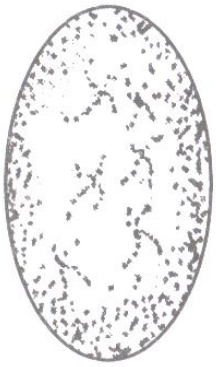
5. Given below is a sequence of step in the processing of wool. Which are the missing steps?

Add them. Shearing _____, sorting _____, and _____into yarn.

Shearing, scouring, sorting, dyeing and rolling into yarn.

6. Make sketches of the two stages in the life history of the silk moth which are directly related to the production of silk.

Silkworm



Cocoon

7. Out of the following, which are the two terms related to silk production ?

Sericulture, floriculture, moriculture, apiculture, silviculture.

Hints : (i) Silk production implies the cultivation of mulberry leaves and rearing silkworms.

(ii) 'Morus Alba' is the scientific name of mulberry. Ans. Sericulture and moriculture.

8. Match the words of column I with those given in column II :

Column I		**Column II**
1. Scouring	-	(a) Yields silk fibres
2. Mulberry leaves	-	(b) Wool yielding animal
3. Yak	-	(c) Food of silkworm
4. Cocoon	-	(d) Cleaning sheared skin

1. e	2. c	3. b	4. a

9. Given below is a crossword puzzle based on this lesson. Use hints to fill in the blank spaces with letters that complete the words.

Down

1 : Through washing

2 : Animal fibre

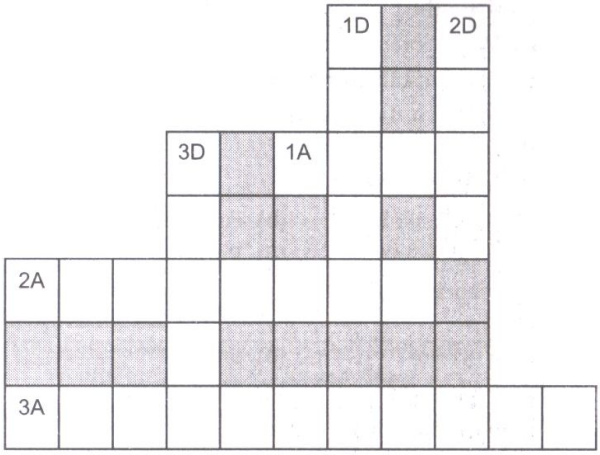
3 : Long thread like structure

Across

(A) 1 : Keeps warm

2 : Its leaves are eaten by silkworms

3 : hatches from egg of moth

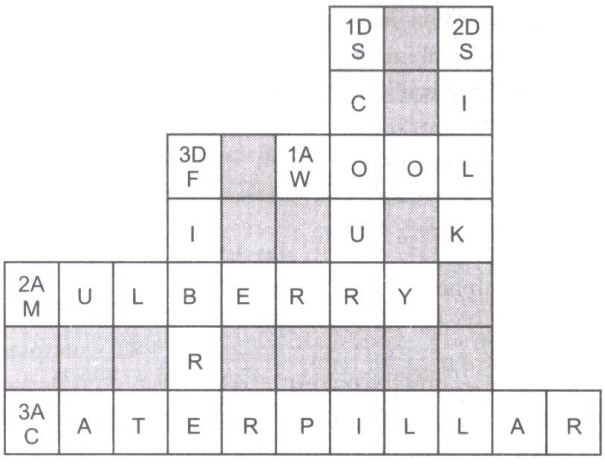


Down

1. Through washing
2. Animal fibre
3. Long thread like structure

Across (A)

1. Keeps warm
2. Its leaves are eaten by silkworms
3. hatches from egg of moth



I. Very Short Answer Type Questions.

1. What are the sources of wool and silk?

Animals are the sources of wool and silk.

2. Name some animals which provide wool.

Sheep and Yak.

3. Which part of the animals is used to get wool?

Wool is obtained from the fleece or hair of the animals.

4. Why fibre providing animals have a thick coat of hair?

Hair trap a lot of air. Air is poor conductor of heat. So, hair keep the al animals warm in the cold climate where they live.

6. How many types of fibres form sheep's hair?

There are two types of fibres that form the hair of sheep: The coarse beard hair Fine soft under hair close to the skin. Name the wool commonly available in the market. Ans. Sheep wool

7. Where is yak wool common in India?

Ladakh

8. What is the source of angora wool?

Angora goats

9. What is Pashmina?

The wool formed by the fur from the Kashmiri goat.

10. Where are the Llama and Alpaca found in the world?

Llama and Alpaca are found in South America.

11. What do you mean by the rearing of animals?

The keeping and feeding of animals is called rearing.

12. What is the aim of rearing sheep?

The main aim to rear the sheep is to obtain wool.

13. What is shearing?

The process of removing hair with a thin layer of skin from the body of sheep is called shearing.

14. What do you know about scouring?

The process of removing dust, dirt and grease by washing the sheared skin is called scouring.

15. What is sorting?

The process by which hair of different textures are separated is called sorting.

16. What are burrs?

The small fluffy fibres in wool are called burrs.

17. From which animal, the silk is obtained?

Silk moth

18. What is sericulture?

The rearing of silkworms for obtaining silk is called sericulture.

19. In which stage the silk moth spins the silk fibre around itself?

Caterpillar.

20. What is pupa?

The stage next to caterpillar in the lifecycle of a silk moth is called pupa.

21. What is cocoon?

The covering of silk fibres inside which the caterpillar covers itself is called cocoon.

22. What is the most common silk moth?

Mulberry silk moth.

23. What is food of silkworm?

Mulberry leaves.

24. To which class of organic substances does silk fibre belong?

Protein

25. Explain reeling the silk.

The process of taking out threads from the cocoons for use as silk is called reeling the silk.

26. What is fleece?

The hair of sheep or yak are called fleece.

27. What is the function of hairs of wool yielding animals?

Hair trap the air, air keeps the animals warm as it is poor conductor of heat.

28. What do you mean by fur?

The under hair which are soft hair of the kashmiri goats are called fur.

29. Which is the most active stage of the silk worm?

Catterpillar.

30. In which country silk industry begin first?

China.

31. Which route is called silk route?

The route used b traders which introduced silk in other countries is called silk route.

II. Very Short Answer Type Questions.

1. Name the three types of fibres.

i. Plant fibre ii. Animal fibre iii. Synthetic fibre

2. From where the wool is obtained ?

Wool is obtained from the animals which bear thick coat of hair on their body. e.g., sheep.

3. What is the meant by selective breeding ?

The process of selecting parents for obtaining special characters in their offspring such as soft hair in sheep is term as selective breeding.

4. What is pashmina shawls ?

The under hair of Kashmiri goats are fine and soft. Shawls woollen from this are fine and called pashmina shawls.

5. What is silk route ?

The silk was exported from China secretly to other countries by trades and travellers. This is still known as silk route. 1

6. What is carding ?

The straightening of dyed fibres by passing through metal teeth is known as carding.

7. Name some animals which provide wool.

Sheep and Yak.

8. From which animal the silk is obtained ?

Silk moth.

9. How do the hair of certain animals help in keeping their bodies warm ?

[NCERT Exemplar]

Hair traps a lot of hair, which is a poor conductor of heat.

III. Very Short Answer Type Questions.

1. What is selective breeding?

Selective breeding is defined as the breeding of plants and animals to obtain desirable characteristics.

2. Give two examples of natural fibres.

Wool, silk.

3. Which animal material is used to weave find and soft shawls called Pashmina?

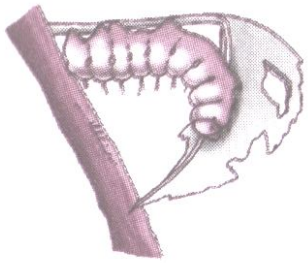
Wool of Angora goat.

4. What do you mean by carding?

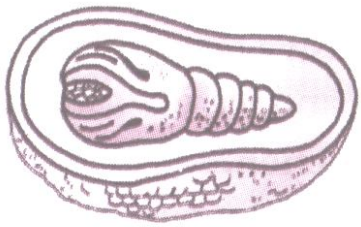
Carding is a process in which 'carding' machine combs the loose wool fibres into a sheet.

I. Short Answer Type Questions.

1. Make sketches of the two stages in the life history of the silk moth which are directly related to the production of silk. [NCERT]

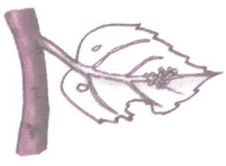


(a) Silkworm

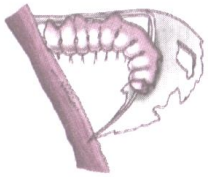


(b) Cocoon with developing moth

2. Write a caption for each of the figures given below. [NCERT Exemplar]

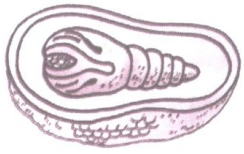


(a)



(b)

(c)



(d)

(a) Eggs of silk moth on mulberry leaves

(b) Silkworm

(c) Cocoon

(d) Cocoon with developing moth

3. Distinguish between natural fibres and synthetic fibres.

S.No.	Natural fibres	Synthetic fibres
i.	These are obtained naturally from plants and animals.	These are prepared by man in laboratory.
ii.	For example, wool, cotton, jute, etc.	For example, nylon, rayon, etc.

4. Write three uses of wool.

(a) It is used to make sweaters, shawls and other warm clothes.

(b) It is used to make blankets, upholstery, carpets, etc.

(c) It is used in sound proofing.

5. What unusual qualities of wool make it a very useful fibre?

(a) It captures air between its layers.

(b) Because of its crimp it is bulkier and acts as insulator.

(c) It readily absorbs moisture.

6. What are occupational hazards?

These are the dangers to human health due to the working conditions. For example people working in woollen industry get infected by anthrax and those in sericultur industry suffer from backaches and leg deformities.

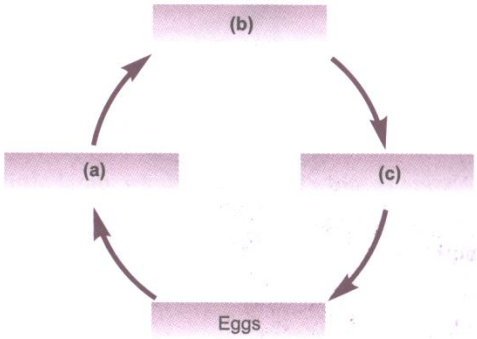
7. Mention the steps in silk production.

The steps in silk production include gathering of cocoons, killing of moths insid them, taking out of threads, i.e., reeling and spinning the fibre into yarn, i.e., throwing

8. What health problems do workers in the silk industry suffer from?

Workers in silk industry have breathing problems, infection due to handling of dea worms, vision problems, backaches, leg deformities like bow-leggedness and raw an blistered skin.

9. Complete the life cycle of silk moth.



(a)eggs (b) Larva, (c) Cocoons (d) Moth

10. Write three uses of silk.

a. It is used to make clothes, scarves, sarees and dresses.

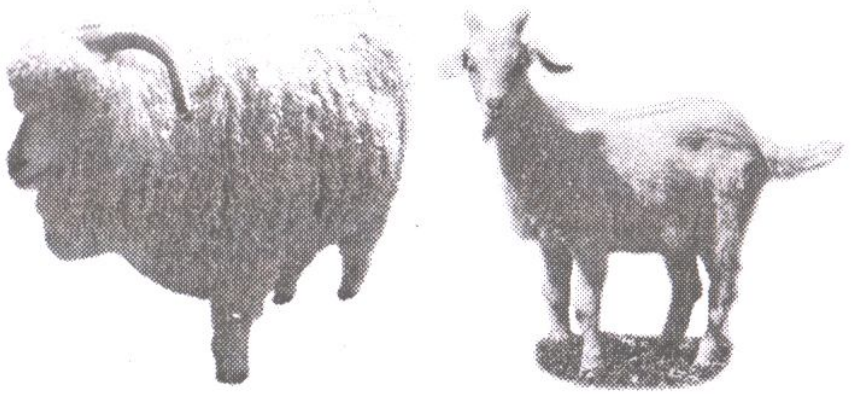
b. It is used to make parachutes and bullet proof vests.

c. It is used to non-absorbable suture in surgery.

II. Short Answer Type Questions.

1. What do you mean by the term selective breeding?

The process of breeding of selective parents for obtaining special characters in their offspring, such as soft under hair in sheep, is termed as selective breeding.



Angora goat Goat

2. What is Angora wool?

The wool which is obtained from the Angora goats is called Angora wool. The Angora goats are found in hilly regions such as Jammu and Kashmir.

3. Explain the feeding (food habit) of sheep.

Sheep are herbivores. Their food contains following two parts: Grass and leaves of various trees. A mixture of pulses, corn, jowar, oil cakes and minerals. In winter sheep are kept indoors and fed on leaves, grain and dry fodder.

4. What kind of animals in different regions are reared for obtaining wool?

Various kinds of animals which are reared for obtaining wool are:

(i) Yak: Yak wool is common in Tibet and Ladakh.

(ii) Angora goats: They are used to obtain Angora wool. They are found in hilly regions.

(iii) Kashmiri goats: They are used to obtain fur.

(iv) Camel: It also provides fur.

(v) Llama and Alpaca: They are found in South America and also yield wool.

5. What do you mean by sorter's disease?

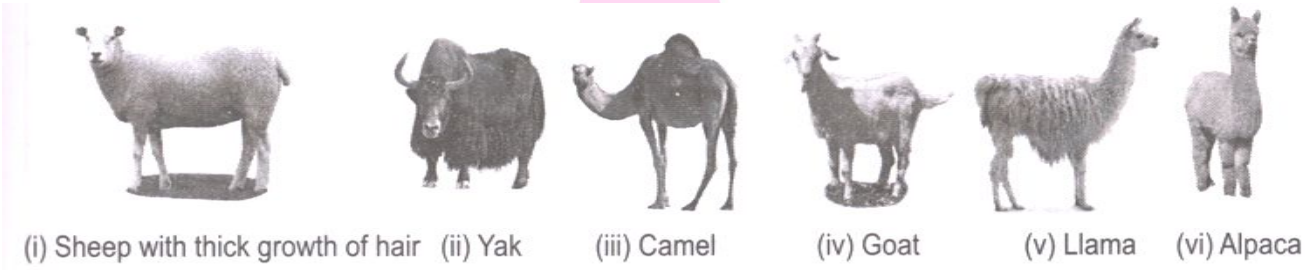
Wool industry is the most important means of livelihood for many people. But sorter's job is very risky because sometimes they get infected by a bacterium called anthrax, which causes a fatal blood disease called sorter's disease. Such types of diseases are called occupational hazards.

6. Name the various types of animals which are used to produce wool?

Various types of animals are:

(i) Sheep **(ii) Yak** **(iii) Camel** **(iv) Goat**

(v) Llama **(vi) Alpaca**



(i) Sheep with thick growth of hair (ii) Yak (iii) Camel (iv) Goat (v) Llama (vi) Alpaca

7. Explain the process to obtain silk thread from cocoon.

Cocoons of silk moth are used to obtain the silk fibres. These cocoons are kept under the sun or boiled or exposed to steam. The silk fibres separate out. This process of obtaining, silk from the cocoons is called reeling the silk. Reeling is done in special machines.

8. Write a short note on the discovery of silk.

According to an old Chinese legend, the empress Si-lung Chi noticed that white worms are eating the leaves of mulberry. They were also spinning shiny cocoons around them. A cocoon

was dropped into her cup of tea and a tangle of delicate threads separated from the cocoon. In this way, the first silk industry began in China.

9. How silk fibres of different textures are prepared?

The silk yarn is obtained from the cocoon of the silk moth. There is a variety of silk moths which look very different from one another and the silk yarn they yield is different in texture like coarse, smooth and shiny, etc. Thus, tassar silk, mooga silk and kosa silk are obtained from cocoons spun by different types of moths. The most common silk moth is the mulberry silk moth. The cocoon of this moth yield soft, lustrous and elastic silk fibre.

10. What is mulberry silk moth?

The most common silk moth is mulberry silk moth. The silk fibre from the cocoon of this moth is soft, lustrous and elastic and can be dyed in beautiful colours. The sericulture or culture of silk worms is a very old occupation in India. India produces plenty of silk on a commercial scale prepared by mulberry silk moth.

11. What are the contributions of India in silk production?

India is the second largest producer of silk in the world. Silk is considered as a luxury good in India. About 97% of the raw silk is produced in the five Indian states, namely, Karnataka, Tamil Nadu, Andhra Pradesh, West Bengal and Jammu & Kashmir. Indian silk is famous all over the world and some varieties of silk like Muga, Eri, and Pat silk are produced by the silkworms that are native only to the Assam state in India. The famous Banarsi Sarees, Kanchipuram Sarees and many other garments made up of silk defines the strong position of India as a leading producer of silk all over the world.

III. Short Answer Type Questions - 1

1. Why can't a cotton garment keep us as warm as a woollen sweater?

Woollen sweater contain air trapped between them. Air, being a bad conductor of hear, does not allow the body heat to flow outward. On the other hand, cotton garments cannot trap air between them and so do not provide any insulation and thus cannot keep up as warm as woollen sweaters.

2. Write a note on Sorter's disease.

Workers involved in wool industry during sorting of wool sometimes get infected by a bacterium called anthrax. This cause a fatal blood disease called sorter's disease. Such risks faced by workers in any occupation are known as occupational hazards.

3. How is silk thread obtained from cocoon?

A pile of cocoons is used for obtaining silk fibres. The cocoons are kept under the sun or boiled or exposed to steam / the silk fibres separate out. The silk fibres from many cocoons are brought together to form a single silk thread. This is called reeling of silk.

4. What is meant by pupa ?

The female moth lays eggs which hatch into larvae called silkworms or caterpillars. These caterpillars grow in size and their glands that produce silk develop and attain one third the size of larvae. This stage of life cycle of silkworm is called pupa.

5. Why do wool giving animals bear a thick coat of hair on their bodies ?

Animals from which we get wool bear a thick coat of hair on their bodies. This is because air is a poor conductor of heat. The thick coat of hair traps a lot of air, there by creating an insulating barrier. Thus thick coat of hair shield these animals from cold.

6. What are the uses of wool ?

Wool is used for making fabrics, shawls, blankets, carpets, felt and upholstery. Wool felt is used to cover piano hammers. It is also used to absorb noise in heavy industry and stereo-speakers.

7. Describe food habit of sheep.

Sheep are herbivores and prefer grass and leaves. Sheep also fed on corn, jower and mixture of pulses and cakes. In winter, sheep are kept indoor and fed on leaves, grains and dry fodder.

8. Some words related with silk are jumbled up. Write them in their correct form.

(a) TURECULRISE (b) WILSMORK

(c) BELMURRY (d) RINGLEE (NCERT Exemplar)

(a) Sericulture

(b) Silkworm

(c) Mulberry

(d) Reeling

III. Short Answer Type Questions - 2

1. Give in brief the life history of silk moth.

Life history of silk moth :

(i) Female moth lays eggs on leaves.

(ii) Eggs hatch into larvae called caterpillars silkworms.

(iii) Silkworms feed on mulberry leaves and grow in size and stage of Pupa is reached.

(iv) Pupa holds itself by weaving a net around its body by swinging its head from side to side in the form of 8 (eight). During these movements, it secrets fibre and completely covers itself. This covering is called cocoon.

(v) Silk is obtained from cocoon. Some cocoon develop into adult moth.

2. Why sheared skin with hair is thoroughly washed in tanks? What is this process called?

The wool obtained after shearing contains a substance called yalk which consists of complex chemical lanolin. In addition to it, the same wool contains suint, which is dried perspiration of sheep. These are removed by washing with soap-alkali preparation or some suitable detergent in tanks. This process is called scouring.

3. What is raw silk? How is it produced?

After brushing, filaments from four to eight cocoons are joined and twisted. About 48 such twisted filaments are joined to make a thread that is wound on a reel. This thread is called raw silk.

4. What is carding of wool? How is woollen yarn obtained from the carded wool?

The wool fibres are dried and then disentangled. They are then combed and straightened by a cardinal machine. This is called carding.

In the cardinal machine, the disentangled woollen fibres are passed between a pair of rotating cylinders covered with a material called carding cloth, which contains fine, pliable wire teeth. The wool emerges from the rollers in the form of thin wire called web.

5. What are the three grades of silk produced?

Three grades of silk obtained from a cocoon are :

(a) Reeled silk : It is the unwound fibres and form the finest quality of silk.

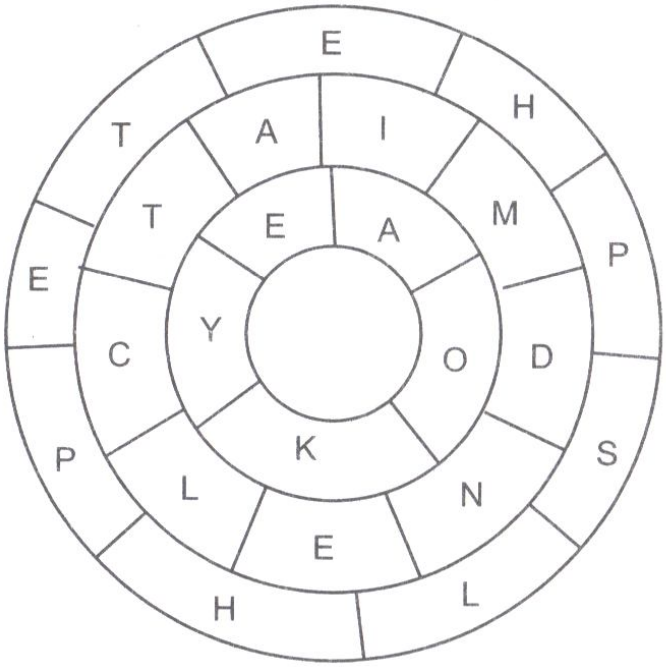
(b) Spun silk : It is the carded or combed silk from left overs after the reeled silk. It constitutes an inferior quality. It is slightly honey coloured.

(c) Nail silk : Still shorter fibres left behind after carding constitute an even inferior quality of silk. It is a richly textured rough silk.

6. What are the advantages of synthetic fibres over natural fibres ?

Advantages of synthetic fibres are that they are cheap, easily available, not attacked by insects, easy to store and dries up quickly.

7. Figure shows three rings of circles with letters in them. Some of these letters in each ring can form the name of one wool yielding animal. Find the names of these animals. (NCERT Exemplar)



Yak, camel and Sheep.

I. Long Answer Type Questions.

1. Compare the burning characteristics of cotton, nylon, silk and wool.

Fibre	Smell	Burning Characteristics	Residue
Cotton	Burning paper	Burns with light smoke	Fine ash which crumble on touching.
Nylon	Burning plastic	Melts and shrinks	Dry hard bead.
Silk	Burning hair	Burns slowly	Silvery beads which easily crush to powder.
Wool	Burning hair	Burns slowly; stops burning when removed from the flame.	Brown shiny hollow beads which crumble on pressing.

2. State whether the following statement are true or False. If false, correct them.

a. Silkworms are caterpillars of silk moth.

b. In India, camel and goats are generally reared for obtained wool.

c. The rearing of silkworms for obtained silk is called silviculture.

d. In the process of obtained wool from fleece, sorting is done after scouring.

e. Yak hair are not used to make woollen fabric. **[NCERT Exemplar]**

3. Various steps involved to obtain wool from fleece are given here.

i. Picking out the burrs

ii. Dyeing in various colours

iii. Shearing

iv. Scouring

v. Sorting

Write the above steps in the correct sequence in which they are carried out. **[NCERT Exemplar]**

Correct sequence is - (iii), (iv), (v), (i), (ii).

4. Explain the phrase – "unity is Strength" on the basis of the making of fabric from fibre. **[NCERT Exemplar]**

Fibres and fabric play a large role in everyday application. A fibre is a hair-like strand of material. They are the smallest visible unit of a fabric and denoted by being extremely long in relation to their width. Fabric can be spun into yarn and make into fabric. A single fibre is too week to break but when it one made of fabric it is difficult to tear. Fabric needs more energy to tear apart as compared to single fibre.

5. Steps for the production of silk are given below in a jumbled order. Arrange them in their proper sequence.

i. Eggs are warmed to a suitable temperature for the larvae to hatch from eggs.

ii. Fibres are taken out from the cocoon.

iii. After 25 to 30 days, the caterpillars stop eating and start spinning cocoons.

iv. The larvae / caterpillar or silkworms are kept in clean trays along with freshly chopped mulberry leaves.

v. Female silk moths lay eggs.

vi. Cocoons are kept under the sun or boiled in water. **[NCERT Exemplar]**

Correct sequence is – v, i, iii, iv, vi, ii.

6. Complete the paragraph related to the histroy of silk moth by filling in the blanks. **[NCERT Exemplar]**

The _____ (a) _____ silk moth lays _____ (b) _____, from which hatch _____ (c) _____ called _____ (d) _____ or _____ (e) _____. They grow in size and when caterpillar is ready to enter the next stage of its life history called _____ (f) _____, it first weaves a covering to hold itself, which is know as _____ (g) _____.

a. female

b. eggs

c. larvae

d. caterpillars

e. silkworms

f. pupa

g. cocoon

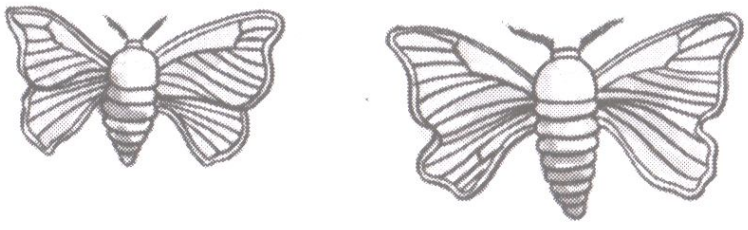
II. Long Answer Type Questions.

1. Mune some breeds of sheep reared in our country. Explain the quality of wool they provide and the state where they are found.

Some Indian breeds of sheep			
S.No.	**Name of breed**	**Quality of wool**	**State where found**
1	Lohi	Good quality wool	Rajasthan, Punjab
2	Rampur bushair	Brown fleece	Uttar Pradesh, Himachal Pr
3	Nali	Carpet wool	Rajasthan, Haryana, Punjab
4	Bakharwal	For woollen shawls	Jammu and Kashmir
5	Marwari	Coarse wool	Gujarat
6	Patanwadi	For hosiery	Gujarat

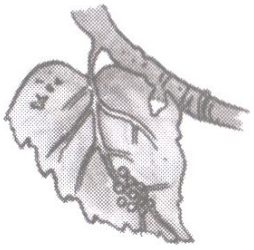
2. Explain the life history of silk moth.

The male and female silk moths are separate. The female silk moth lays eggs from which larvae are hatched which are called caterpillars or silk worms. They grow in size and gradually enter in the next stage of its life history called Pupa. The Pupa first weaves a net to hold itself, then it swings its head from side to side in the form of a figure of 8. Soon the caterpillar completely covers itself by silk fibres and turn into Pupa. This covering is called cocoon. The further development of Pupa into moth continues inside the cocoons.



(a) Male (b) Female

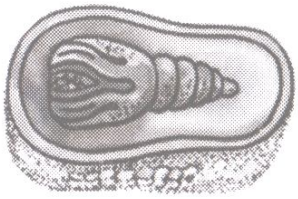
Adult silk moths



(c) Eggs on mulberry leaves

(d) Silkworm

(e) Cocoon



(f) Cocoon with developing moth

III. Long Answer Type Questions.

1. Paheli went to the market to buy sarees for her mother. She took out a thread from the edge of the two sarees shown by the shopkeeper and burnt them. One thread burnt with a smell of burning hair and the other burnt with the smell of burning paper. Which thread is from a pure cotton saree and which one from a pure silk aaree? Give reason for your answer. [NCERT Exemplar]

The thread which burns with a smell of burning hair is from pure silk. This is because silk and hair are protein fibres, therefore, they produce similar smell on burning. Whereas cotton and paper both are carbohydrates, thus the thread which burns with the smell of burning paper is from cotton saree.

2. Write various steps for processing fibres into wool. [NCERT Exemplar]

The various steps for processing fibres into wool are as follows:

(a) Shearing: The fleece of the sheep along with a thin layer of skin is removed from its body.

(b) Scouring: The sheared skin with hair is thoroughly washed in tanks to remove grease, dust and dirt.

(c) Sorting: The hairy skin is sent to a factory where hair of different textures are separated or sorted.

(d) The small fluffy fibres, called burrs, are picked out from the hair.

(e) The fibres can be dyed in various colours, as the natural fleece of sheep and goats is black, brown or white.

(f) The fibres are straightened, combed and rolled into yarn.

3. (a) Why it hurts when someone pulls his hair but not when he goes for a haircut?

(b) Why a cotton garment cannot keep us as warm in winter as a woollen sweater can?

(a) Hair is made up of proteins, which are dead cells. They are attached to the scalp with living cells, from where they grow. So, while getting a haircut a person does not feel pain because dead cells are being cut, but when it is pulled from scalp the living cells are also being pulled along.

(b) Woollen sweater traps air in between whereas cotton allows the air to pass through it. Air being a bad conductor of heat does not let body heat to escape beyond the sweater. Therefore, it is much warmer.

4. Give reasons for the following:

(a) Light coloured cotton clothes are preferred to be worn in summers.

(b) Shearing does not hurt a sheep.

(c) We wear different types of clothes in different weathers.

a. Light colour are poor absorbers of heat. So, in summers they keep us cool.

b. During shearing the uppermost layer of sheep's skin which is dead is removed. Therefore, it does not hurt the sheep.

c. We wear clothes according to the climate. In summers we wear clothes that keep us cool and in winter we wear clothes which keep us warm.

I. High Order Thinking Skills (HOTS) Questions.

1. From what type of health problems the workers suffered while working in a wool industry?

Workers get infected by a bacterium called anthrax, during the sorting of fleece into fibres. It leads to a fatal blood disease called sorter's disease.

2. Why caterpillars need to shed their skin when they grow bigger but human do not? Do you have any idea?

During the feeding period, a silkworm sleeps four times (24 h each time) at intervals of six days. While sleeping, its skin cracks. So, it sheds skin and this phenomenon is called moulting.

II. High Order Thinking Skills (HOTS) Questions.

1. Why are two thick cotton sheets warmer than one single blanket?

The air captured between two thick cotton sheets is much more than in a single blanket. Therefore, there is more insulation in cotton sheets and thus they are warmer.

2. Why do people prefer wearing cotton clothes in humid weather?

In humid weather, people tend to seat more. Cotton fabric being a good absorber absorbs sweat faster than any other fabric and hence keeps people comfortable.

Value Based Questions.

1. Rohan's uncle works as a technical advisor in renowned fabric company of our country. Rohan came to know that different kinds of fibres are the raw materials for fabric industry and put forward the following questions to his uncle when he came home.

Answer the following questions based on teh situation described above.

i. What can we obtain the fabres like wool, cotton silk?

ii. What are the different steps by which woollen fibres are converted into the yarn?

iii. What is the use of yarn?

iv. Name the animals from which we obtain different quality of wools other than sheep.

v. How can the special characters like softness in the woollen fibre be obtained?

vi. what value are displayed by Rohan?

i. We obtain wool from the fleece (hair) of sheep, cotton from cotton plant and silk from cocoons of silk moth.

ii. Step I – Shearing, Step II – Scouring, Step III – Sorting, Step IV – Fluffy firbes called burrs are picked out from hair, Step V – Dyeing of fibres, Step VI – Fibres are straightened, combed and rolled into yarn.

iii. Yarns are used to knit sweaters.

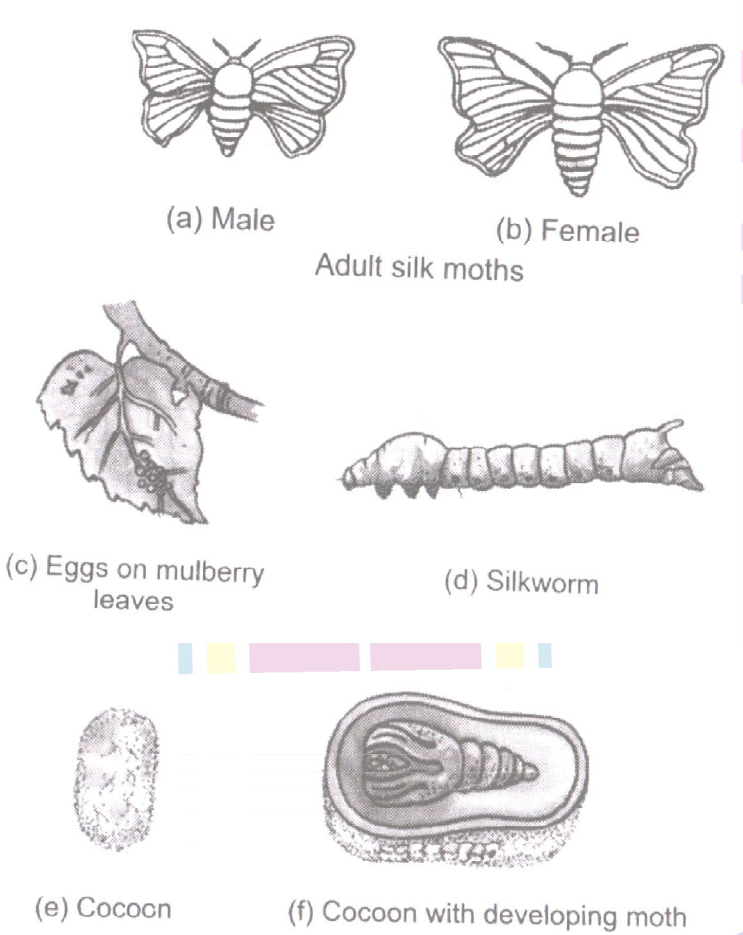
iv. Yak, Alpace, Llama, Angora goat, camel.

v. By 'selective breeding' we can obtain the special characters is the woollen fibres.

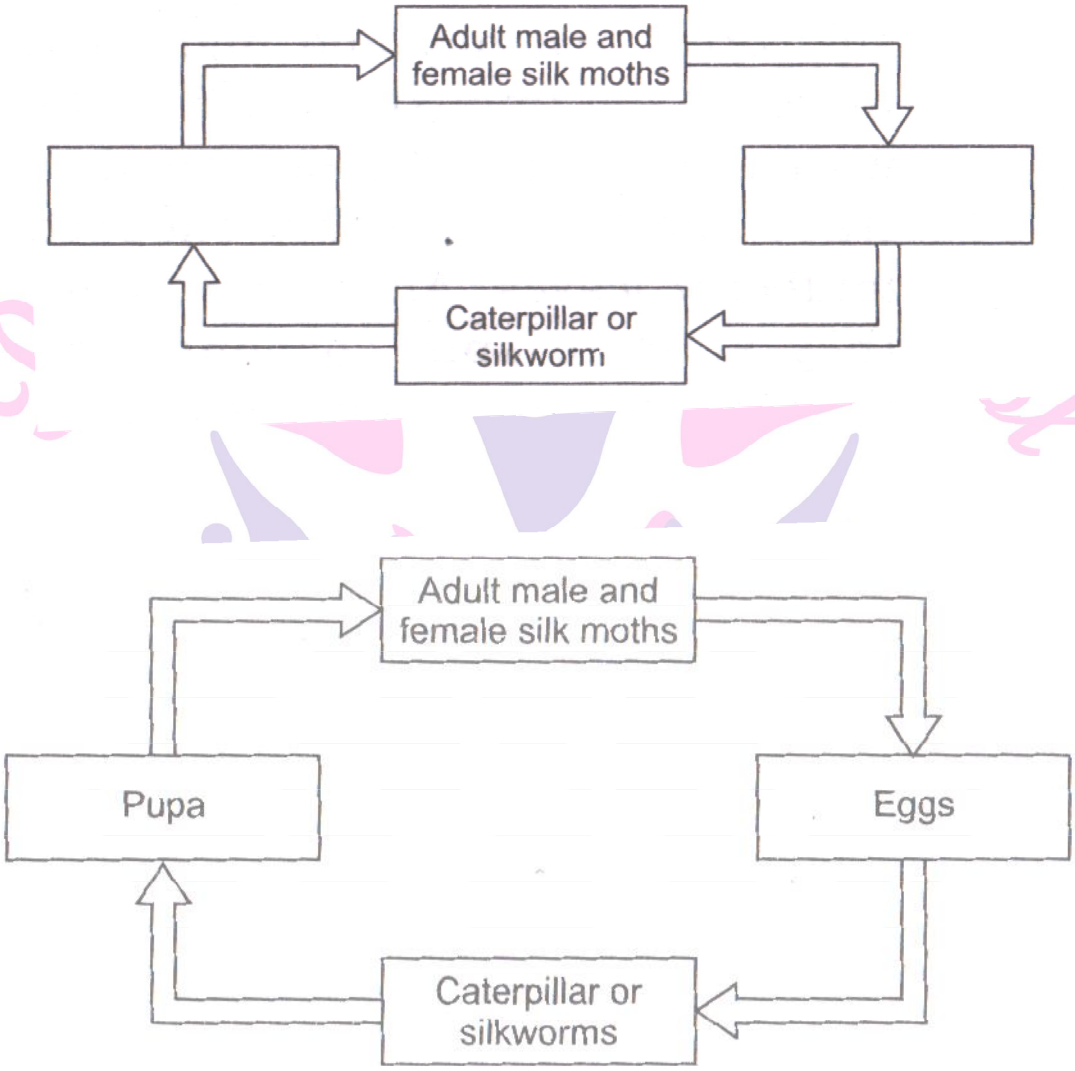
vi. Awareness regarding those animals who are used by human being for different types of clothing.

Skill Based Questions.

1. Draw a labelled diagram to show the life-cycle of a silk moth.



2. Observe the following schematic diagram of silk moth's life history and fill correct words (stage) in vacant boxes.



3. Identify the following animals and name the type of wool obtained from them.

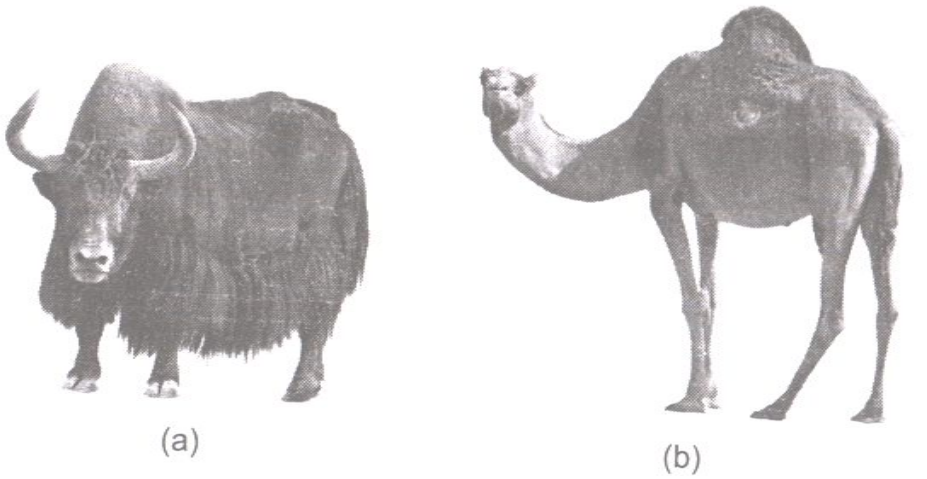


Figure 'a' is Yak. Figure 'b' is Camel.;

The hair of Yak are used to make Yak wool.

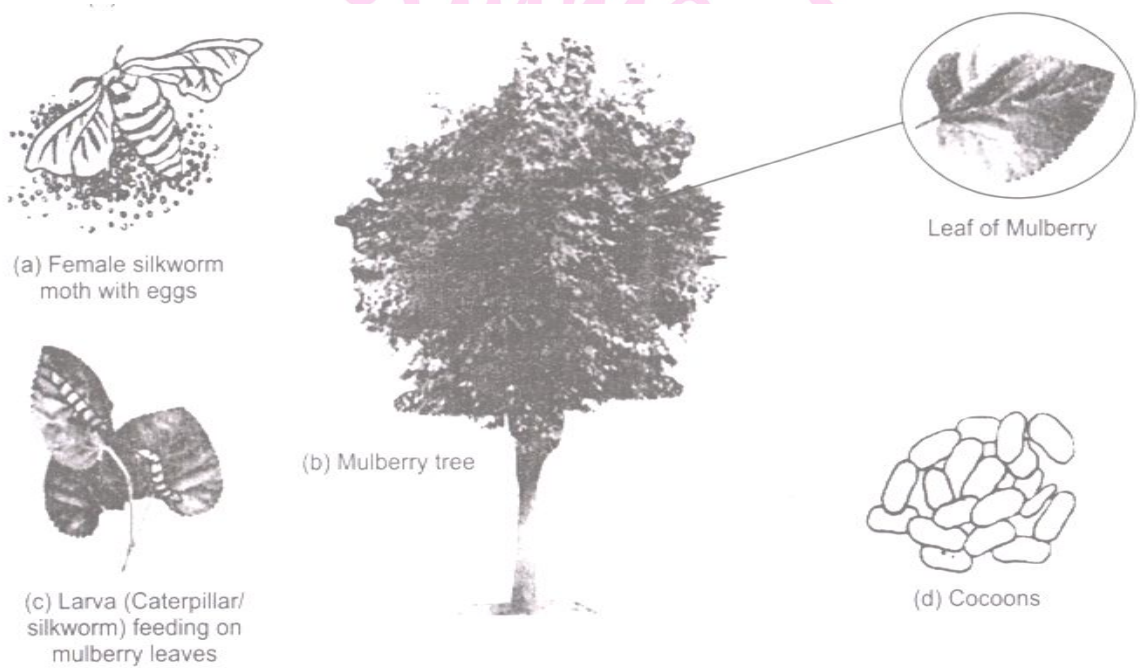
The hair of Camels are used to make wool called fur.

4. a. Draw labelled diagram to show the rearing of silkworms.

b. What is the use of Mulberry tree in the life history of silkworms.

c. Write the other name of silkworms.

a.

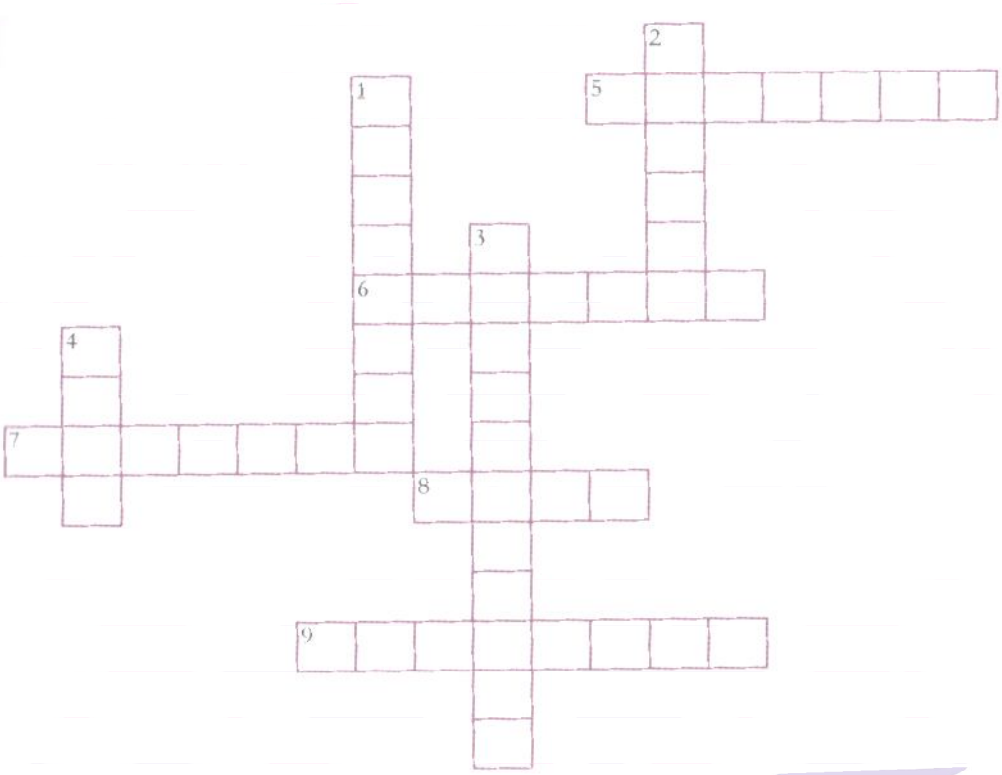


b. The silkworms eat the mulberry leaves so it is very important in the life history of silkworm.

c. The other name of silkworm is caterpillar.

Cross Word Puzzle

1.



Across

5. Clothes worm in winters.
6. The process of taking threads from cocoon.
7. Separating different textures.
8. A caterpillar converts into this.
9. Washing of hair removed from sheep.

Down

1. Removing fleece from sheep.
2. An example of a plant fibre
3. Rearing of silkworm on a large scale.
4. Small fluffy fibres in wool

Across

5. Woollen

6. Reeling

7. Sorting

8. Pupa

9. Scouring

Down

1. Shearing

2. Cotton

3. Sericulture

4. Burr