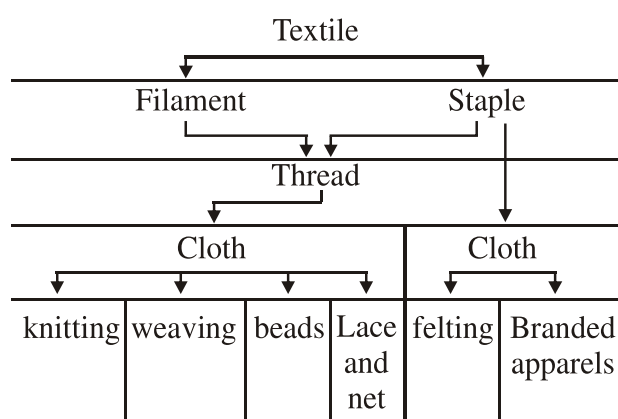


## CHAPTER : 20

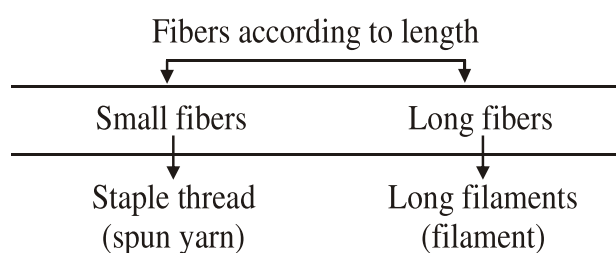
### SPINNING AND YARN MAKING

Since ancient times man has felt the need of covering his body. As the civilization and culture developed textile manufacturing started developing.

The initial and smallest unit of textile is called a fiber. Fibers are placed together, stretched, twisted and stressed together to form an unending long thread called yarn. This yarn is used for making textiles.



Yarn is prepared using long and short threads. Formation of threads is known as spinning.



#### Stages of yarn construction–

For yarn making small natural fibers are joined together to form long fibers. Artificial fibers or polymers are passed through holes of spinneret forming long threads. The stages of thread formation are as follows:

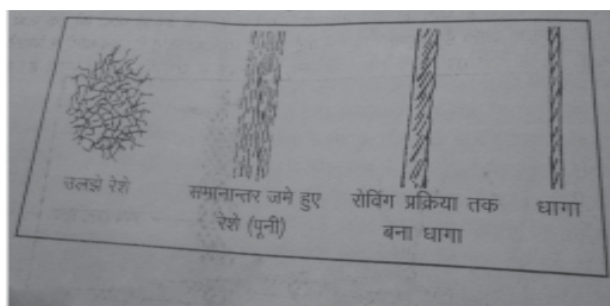
**Table : 20.1**

Method of making yarn				
Carding (removing impurities)	Combing (to arrange in parallels)	Drawing out (separating short and long fibers)	Roving (slightly twisting fibers in water)	Spinning (preparing thread)

- 1. Carding–** The fibers obtained from natural sources are generally tangled and are impure. By the process of carding these impurities are removed and fibers are arranged in a straight line in parallels.
- 2. Combing–** In combing the fibers are combed to remove tangles. This separates short and long fibers and fibers become straight and parallel. Small fibers are used to make low quality apparels.
- 3. Drawing out–** The process of separating short and long fibers is known as drawing out. For this the fibers are wound on spools which move in circular motion continuously. This separates long fibers from small ones and prepare a yarn of required thickness or diameter.
- 4. Roving–** The drawn out thread is slightly twisted. The straight and parallel fibers come

together by this process and the weak thread becomes strong, dense and durable. This thread is then sent for spinning.

5. **Spinning**– This is the last step in the process of thread making. The roved thread is sent into the spinning machine which has fixed rollers. Each roller has speed more than the preceding roller. Thread is passed through these rollers. As the thread passes through the last roller, it becomes of intended size and diameter.



**Figure : 20.1 (Stages of thread making)**

Thread gets ready by spinning. On the basis of

length, thread is of two types–

1. Short length or staple thread
2. Long filament

Types of spinning

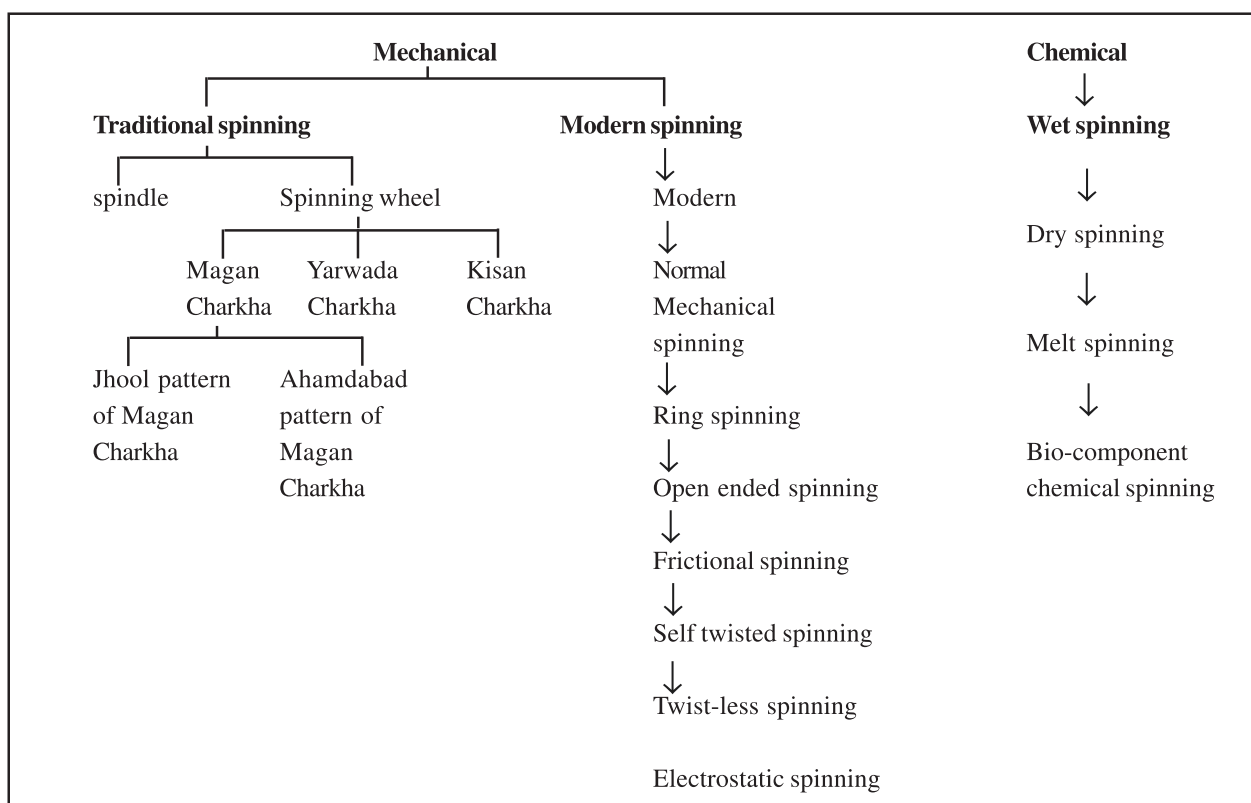
In present times, thread is prepared in two ways–

1. Mechanical spinning
2. Chemical spinning

1. **Mechanical spinning**– normally this type of spinning is used for making threads from natural fibers. In this traditional method of spinning using spindle and spinning wheel is used. In modern spinning, normal mechanical spinning, ring spinning, open end spinning, frictional spinning, electrostatic spinning are used.

2. **Chemical spinning**– thread making from artificial fibers requires chemical spinning. Wet

**Table 20.2: Types of spinning**

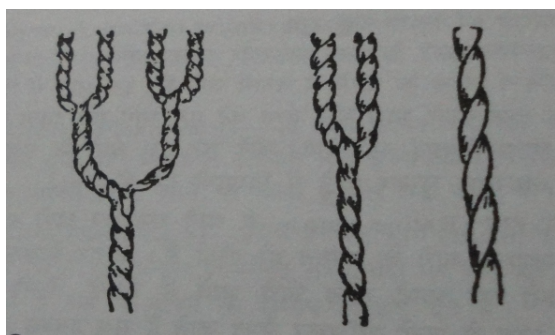


spinning, dry spinning, melt spinning, and bio-component spinning are different methods of chemical spinning.

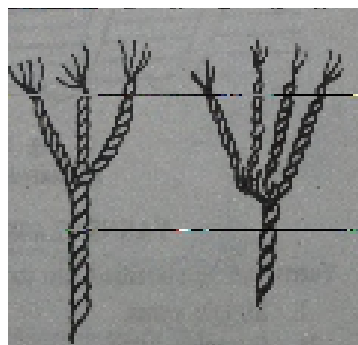
### Classification of yarns—

Mechanically and chemically made threads are of two types—

1. Simple
2. Mixed and fancy threads



**Fig. 20.2 Normal threads**  
( four ply, two ply, one ply)



**Fig. 20.3 Card yarn**

1. Simple threads— this thread is made of a single type of fiber. It is single or double layered.
2. Mixed and fancy thread— this thread is of complex structure and is made up of more than one type of fibers.

**Strength of thread—** Strength of fiber is measured in two ways—

1. Fixed Weight System

**Table 20.3 : Types of yarns**

Types of yarn	
Simple	Mixed
Simple - Weak long fibre	1. slub yarn— Twists at regular turns
Double - Mixed of two different single strand yarn	2. Flak— Less separated or not at all separated (weak)
Multiple - Mixing many single strand yarn	3. Spiral— Difference between diameter, length and thickness of thread
Cable or cord yarn - Rope or lanyard	4. Retyne looped between length of thread
	5. Coiled loops— Different types of loops in the length of thread
	6. Knotted thread— Appearance of stains
	7. Gaadal two or more types of colored threads
	8. Stretch- Stretchable threads
	9. Textured— Artificial surface thread, stretchable thread, big artificial looped crimp
	10. Novelty
	11. Iartotex

- (b) Shining of thread
- (c) Method of spinning
- (d) Length of thread

**2. Fill in the blanks–**

- (i) The process of making thread from fibers is called \_\_\_\_\_
  - (ii) For making thread from natural fibers, \_\_\_\_\_ spinning method is used.
  - (iii) Artificial thread is made using \_\_\_\_\_ spinning method.
3. What is filament?
  4. Define cording.
  5. Define mixed thread.
  6. What is \_\_\_\_\_ thread?
  7. What is fixed weight system?
  8. Explain the process of thread making.
  9. What is spinning process? Classify spinning.
  10. Write classification of thread.
  11. How is strength of thread counted?

**ANSWERS:**

1. (i) a (ii) b (iii) a (iv) a
2. (i) spinning (ii) mechanical (iii) chemical