**Fibre to fabric**

**Q 1. What are different types of fabric.**

**Ans**. Different types of fabric are:

* Cotton
* Wool
* Silk

Fabrics protects us from cold , heat, rain and dust.

Woollen blankets ,sweaters keeps us warm in winters.

Cotton clothes absorbs sweat and keep us cool during summers.

Each fabric gives us a different look and feel for different occations.

**Q2. Explain sources of fibre.**

**Ans.**

* Fabrics are made up of fibres.
* Fibre is obtained either from plants or animals.
* Cotton, jute ,hemp and coir are the fibres obtained from plants.
* Silk and wool are obtained from animals.
* Fibres are produces artificially also like polyster and Nylon.
* Fibres are spun into yarn which are finally wooven or knitted into fabric.
* Fibres are classified into two main categories:
  + - Natural fibres: obtained from natural souces like plants and animals.
    - Synthetic fibres: produces artificially

**Q3. What are Natural Fibres ? Explain how plants fibres are classified.**

**Ans Natural Fibres:** Fibres that are extracted from plants and animals are known as natural fibres.

Classification of plant fibres: plant fibres are classified on the basis of part of plant they are extracted from:

1. **Fruit Fibres:** are obtained from the fruits of the plants.

**e.**g cotton, coir

1. **Bast Fibres**: are obtained from the stem of the plants. They are generally very long.

e.g Jute, flax and hemp

1. **Leaf Fibres:** are obtained from leaves. They are generally rough and sturdy.

**e.**g Sisal fibres

1. **Stalk Fibres:** These fibres are actually stalks of the plant.

**e.**g Staws of wheat , rice and barley

1. **Seed Fibre:** These fibres are collected from seeds or seed cases.

**e.**g Cotton and kapok

**Q4. What kind of fibre is Sisal fibre?**

**Ans.**  Sisal fibres are example of leaf fibres. They are hard, coarse , strong and moisture resistant. They are used in making ropes ,mats , carpets and handicraft.

**Q5. Describe how cotton is obtained.**

**Ans**

* Cotton is world’s most popular plant fibre.
* It is obtained from cotton plant., which is a shrub.
* Cotton shrub grows well in black soil.
* It requires a warm climate with moderate rainfall.
* Cotton plant bears fruits called cotton bolls.
* When they ripen , the bolls burst exposing the seeds surrounded by soft cotton fibre, which are then used to make yarn.

**Q6. Describe the steps of making yarn from cotton fibre.**

**Ans**

1. **Picking:**  This step involves handpicking the cotton fibre from the ripen cotton bolls. Earlier this was done by hands, but nowadays machines are used in big cotton mills.
2. **Ginning:** This step involves the separation of cotton fibres from seeds. Earlier , ginning was done by hand. Nowadays machines called cotton gins are used.
3. **Spinning:** Fibres that are free from seed are called link. This is then combed. Combing is done to straighten the fibres. Fibres are then twisted to form yarn by spinning machines. This method of making yarn is called spinning.

**Q7. What is a yarn?**

**Ans**  The yarn is a processed fibre . Yarn are threads made of fibre from known raw material like cotton., silk, or wool.

**Q8. Explain properties of cotton.**

**Ans.**

* Cotton is a soft fabric which shrinks.
* It is a breathable fabric as it allows air to pass through it.
* It absorbs moisture. Sweat absorbed by cotton fabric evaporates and thus cools the body . This is the reason why clothes made from cotton clothes made from cotton are worn in hot and humid climates.
* It gets wrinkled easily and needs lot of maintenance.
* It is susceptible to damage by moths and mildew.
* It is biodegradable.
* Cotton fabric is used in making clothes ,bedsheets, curtains , towels and quilts.

**Q9. What is golden fibre? How it is obtained.**

**Ans**

* Jute is an important plant fibre after cotton.
* It is also known as golden fibre.
* Jute plant needs high temperature and plenty of rainfall to grow.
* It grows best in the soil that contains sand , silt and clay.
* Alluvial soil is best suited for the cultivation of jute.
* In India , it is majorly grown in Sundarbans delta.
* Globally India is the largest producer of jute products.

**Q10. Explain the process of obtaining jute yarn from the plant.**

**Ans.**

1. The harvested stalks of the plant are soaked in water foe a few days until they start rotting. This process is called retting. Retting softens the bond between the fibres and the inner core. The separation of fibres now becomes easier. The fibres are then separated from rotting stems.
2. The fibres are made into yarn by twisting the strands together. This process of making yarn from fibre is called spinning.

The strong threads made from jute fibre are used in making sacks. Jute yarn and twines are also woven into curtains, chair coverings, carpets and rugs.

**Q11. Explain the properties of Jute.**

**Ans.**

1. It is natural fibre with a golden , silky shine and hence is popularly known as golden fibre.
2. It is biodegradable and recyclable and thus environment friendly.
3. It is a coarse fibre.
4. Jute fibres are not so strong as compared to other bast fibres and breaks easily.
5. Better quality fibres have fairly high lustre and inferior quality fibres shows matt and pitted surface.

**Q12. What kind of fibre is coir?**

**Ans**

* Coir is a fruit fibre.
* It is a short fibre obtained from the outer shell of coconut.
* It is used in making ropes , fishing nets and mattresses.

**Q13. What kind of fibre is flax?**

**Ans.**

* Flax is a Bast fibre.
* It is the strongest plant fibre obtained from the stem of the plant. It is one of the first fibres to be used in the textile industry.
* It is used in making linen fabric which is valued for its exceptional coolness in hot weather.

**Q14. What kind of fibre is hemp?**

**Ans.**

* Hemp is a blast fibre.
* It is a strong and durable fibre containing 70% cellulose.
* It is used in making ropes , canvas, paper and linen like fabric

**Q15. Explain how wool is obtained?**

**Ans.**

* Wool is an animal fibre.
* It is obtained from fleece of sheep or other hairy animals such as yak, camel, cashmere goat and angora rabbit.
* The sheep is sheared to obtain fleece.
* **Shearing** is the process of removing hair from sheep.
* It is done with special instruments called clippers.
* After shearing bales of wool are packed.
* These bales are then sent to mils where they are cleaned by machines.
* This cleaned wool is then spun to form fibre.
* Fibres are then knitted to form clothes.

**Q16. Explain the properties of wool.**

**Ans.**

* Wool is flexible.
* It absorbs moisture and dirt.
* It is flame resistant.
* Wool is commonly used for making bedding, upholstery and carpets.

**Q17. How we feel warmth in woollen clothes in winter.**

**Ans.** The wool fibre trap air in between them. Air is a bad conductor of heat. This prevents flow of heat from our body to cold surroundings. Thus, woollen clothes keep our body warm in winters.

**Q18. Explain how silk is obtained from silkworm?**

**Ans.**

* Silk is produced from the cocoons of silkworms.
* A silkworm feeds on mulberry leaves and secretes an unbroken fibre cocoon around itself.
* As the silkworm enters the pupa stage of its lifecycle, it completely encloses itself in a cocoon mase of silk.
* The cocoon is boiled and unwounded to form the fibre.
* The fibre is then spun to form a silk yarn.
* The rearing of silkworm for the production of silk is called sericulture.
* The silkfibre is made into fabrics such as satin, velvet, chiffon , crepe and brocades.
* The first silk was developed around 5000-8000 years ago in China.
* From China , it came to India, Europe, Africa and Middle East.
* The trade route between these countries was known as Silk Route.
* A silkworm spins about 600-1000m of silk filament. Since silk is very light, approximately 2500 silkworms are needed to produce one pound of silk.

**Q19. Write down the properties of silk.**

**Ans.**

* Silk is the strongest natural fibre.
* It dries quickly.
* It does not shrink.
* It is cool in summers and warm in winters.
* Silk threads are very fine , soft and light in weight.
* It retains its shape , drapes well , has a natural shine and can be easily dyed.

**Q20. What are synthetic fibres.**

**Ans .** Fibres made by human beings using chemical substances are called synthetic or man made fibres.

e.g. polyster, nylon and acrylic.

**Q21. Explain how synthetic fibres are made.**

**Ans.**  The chemical substances are first heated so that they melt. Then they are forced through spinnerets that have fine pores. The long threads that come out from these pores are allowed to cool and solidify. These threads are then twisted to form a yarn, which is then used to make fabric.

**Q22. Write the properties of synthetic cloth .**

**Ans.**

* Synthetic fibre is strong.
* It does not wrinkle and dries easily.
* These fabrics have lesser air spaces within them. So they do not absorb sweat and are unsuitable for use in hot and humid climate. That is why synthetic fibres are mixed with other natural fibres such as cotton or wool to make a blended fabrics
* Polycot and Polywool are the examples of blended fabrics.

**Q23. Write a short note on Water absorption properties of fibres.**

**Ans.**

* Different fibres have different water absorption capacities.
* The absorption of water by fabrics is an important factor that determines how comfortable a fabric is to wear.
* Fabrics that absorb small amount of water are very uncomfortable to wear in hot and humid environments.
* The fabric that absorb a large amount of water are quite comfortable to wear in such weather conditions.
* Natural fibres have higher water absorbing capacities than synthetic fibre.

**Q24. Write a short note on fire resistance property of fibre.**

**Ans.**

* **Cotton and rayon:**  catches fire easily and continue to burn with a bright yellow flame. Smell of burning paper . Ash is light and feathery.
* **Silk and wool:**  Do not catch fire easily , burn with a yellow flame but donot continue to burn. Smell of burning hair comes. Ash is crushable bead.
* **Nylon , polyster and acrylic:**  Do not catch fire easily, shrink away from the flame and melt. No definite smell. Ash formed is hard, uncrushable bead.

**Q25. How fabric is made from yarn.**

**Ans** There are two main processes through which yarns are converted into fabric.

1. **Weaving:**  is the arrangement of two sets of yarn to make a fabric . The threads are crossed over and under each other. This is done on machines known as looms. The looms can be either hand operates of power operated.
2. **Knitting:**  It is done by interlocking loops of the wool yarn. This method is called knitting. Weaving needs a set of two or more yarns. Knitting, however can be done by single yarn or a group of yarns. Knitting needles are used to make fabric by hands on a small scale. In factories knitting is done using machines. Besides sweaters, other garments such as t-shirt, gloves and caps can also be made by knitting.When compared with woven fabrics, knitted fabric are more stretchable.