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1.0 MOTIFS

1.1 Introduction

Design is backbone of graphic art, design that is a part of art actually a part of our life and personality and influences the enjoyment of everything to do and of everything to select.

Textile designs developed from three sources the quality of the fibres, the size and type of yarn and the way they are combined if more than one is used. The process by which they are woven and any ornament incorporated during the weaving and the ornamentation applied after the weaving.

According to Goldstein design is defined as any arrangement of lines, forms, colour, and textures. Design is classified into two types: **structural and decorative** designs. Structural design is a form of construction that is built into the cloth during the process of its manufacturing. Simplicity is a feature of structural design because the design is an integral part of its form rather than an embellishment. Decorative design is applied to the surface of the cloth to ornament it.

In textile design weaving is the most common method of producing structural design. Non-woven methods like knitting, lace making can also be included in this category.

The common method of producing decorative design in the field of textiles includes printing, dyeing, embroidery, appliqué and painting in addition to trimmings and certain finishing methods.

Structural design is the made by the size, form, colour and texture of an object. Decorative design is the surface enrichment of a structural design. Any lines colours, materials that have been applied to a structural for the purpose of adding a richer quality to it constitute its decorative design.

1.2 Requirement of good structural design:

- Good structural design in addition to being beautiful, it be suited to its purpose.
- That it be simple.
- Well proportioned
- That it is suited to the material.

1.3 Requirements of a good decorative design:

Having decided that the object will be enhanced by decoration and that its structural design is simple and beautiful as well as functional the designer plans for following considerations.

1. Decoration should be used in moderation.
2. There should be enough background space to give an effect of simplicity and dignity to the design.
3. It should be suitable to the material and for the service it must give.
4. If a design is to give the maximum amount of satisfaction it cannot stop at being merely correct. It should have character and individuality.

Decorative or ornamental design may be expressed five ways –naturalistic, stylized, geometric, abstract and ethnic forms. The art that is frankly decorative is the art to live with. It is, of all visible arts, the one art that creates in us both mood and temperament. The harmony that resides in the delicate proportions of lines and masses becomes mirrored in the mind. The repetitions of pattern give us rest. The marvels of designs stir the imagination

1.4 Fabric designers acknowledge five families of patterns:

1. Natural /conversational
2. Stylized designs /floral
3. Geometric
4. Ethnic
5. Art movement and period styles

Textile designs breaks down the families into categories based on one or more of the following criteria.

Motif: the most important factor in any design, determines the family to which the pattern belongs. This is the basic image –a rose, a square, a clown a paisley

Layout: It describes the arrangement of the motif- whether it is spaced widely or closely on the ground, in neat order or apparently at random, or in rows that form stripes.

Colour: designs are so classified when a particular dye- indigo, madder or Turkey red say –is the strongest element of their look.

Printing style: warp printing never reproduce a pattern without imposing a certain visual style on it.

Fabrication: The cloth that takes the pattern also affects the way it looks.

Naturalistic designs/ conversational:

This depicts real objects in a natural manner. Flowers, animals, plant forms, human figure of any other object may be selected for representation certain traditional patterns. They also called novelty patterns. Examples are Animals, animal skins, cartoons, fruit, games, toys, mythological designs, vegetables, shells, sports and jungle etc.

Stylized designs/ Floral designs:

These distort real objects. In this natural designs are simplified, exaggerated, rearranged or even distorted to achieve the purpose of the design. In textile industry, patterns of richly coloured, delicately petaled roses and patterns of rose's sharp thorns are both referred to as floral. The floral category includes all the gatherings of the flower garden, in fact including grasses, but agricultural produce like fruit and vegetables is considered a conversational subject. Floral motifs are more common in women's clothes and furnishing materials. Examples of floral patterns are

a) All over non-directional: The motifs of the patterns cover more than 50 % of the field. Such layouts are popular with textile and fashion designers because they tend to disguise a pattern repeat.

b) All over set: It is a formal layout of grids and diagonals.

c) Baskets, flowerpots and vases: These motifs help to organize a floral pattern, providing a visual focus. Flower spilling out of basket can have a romantic, uplifting effect. Flowerpots and vases resolve the issue of how to deal with plants untidy roots and stems.

d) Bouquets and nosegays: These are popular with designers because they offer a way to combine a variety of flowers in one motif. They evoke images of romance, giving gifts- and sentiments of spring.

Geometric designs:

To call the patterns in this chapter geometric is to use the vocabulary of the textile industry, but it also makes them round rather like the subject of a mathematics

class. These are based on pure forms of the circle, rectangle and triangles etc. Geometric motifs include stripes, dots, checks, and plaids as well as many less usual forms. A geometric is an abstract or non-representational motif, a shape that is not a picture of something out in the real world. Examples of geometric designs are basket weave design, check board, chevron and herringbone weave, diagonal stripes, diaper pattern, ogee pattern, plaids and polka dots.

Abstract designs:

These have little or no reference to real object. Abstract implies an element of impression and a greater freedom than is found in most geometric designs. This type of design is used in modern art.

Ethnic designs:

Most of the patterns illustrated in this chapter however were produced not for the overseas market but for the domestic one. Ethnic fashions – meaning in textile vocabulary, any pattern or style with a foreign or exotic feeling – come and go in western design. The ethnic styles have their day in western design and then submerge, to reappear Whenever some one senses that the time is right for a new twist on the constant demand for a folkloric pattern. Examples are American Indian look, batik and Indonesian look, Egyptian look, Mexican design and paisley, tie and dye patterns.

Art movements and period styles:

Designs like these are often the links between cloth and the fine arts- they are part of movements and ideas of the age, and are moved to carry theme through in textiles. Examples are Jacobean looks and super graphics.

1.5 Elements of design:

According to Largenberg art is a man-made expression of something beautiful. Art elements include line, direction, shape, size, value, texture and colour. The basic element line is of different types namely vertical, horizontal, diagonal, slanting and curved lines. Vertical lines suggest life and activity dignity and strength. They are masculine in effect carry the eye up and down. Horizontal lines suggest repose and relaxation. Diagonal lines are very active distributing the discipline of straight lines and the solidity of horizontal lines. Curved lines seem gracious and flexible curves are used to achieve a joyful effect. It adds softness and gracefulness in a design. Beauty and femininity are obtained from

curved lines.

Direction, one of the elements of art, has three primary directions. These are

- Horizontal
- Vertical
- Diagonal or oblique
- Right oblique
- Left oblique

Direction of line can give additional meaning to a simple line. Vertical line creates illusion of height; horizontal will tend to look more length and less height. Too many lines in horizontal or vertical direction make the design rigid.

A series of lines of different directions defines a shape or pattern lines and shapes and their space intervals between them may differ in size or measure. Size plays an important role in application of principles of design. For a design to be pleasing the parts should be close enough in size to appear to belong together but varied enough to apply interest.

Value is the amount of light a surface can reflect. White colour seems to add colour and increase size because it reflects light. Black takes away colour so reduces size. Much of our knowledge of what is around us depends upon touch as well as size. Texture is the surface quality of an object.

The appeal of colour is universal and one of our greatest enjoyments in the ability to use it beautifully. Colour has three features. Hue, value and intensity or chroma.

1.6 Principles of design:

Balance is one of the five principles of design. it gives a restful effect obtained by grouping shapes are colour around a center in such a way that there are equal attractions on each side of that center. The three basic forms of balance are formal, informal, and radial balance.

Harmony is the art principle, which produces an impression of unity through the selection and arrangement of consistent objects and ideas. Fine design is often harmonic in character. Harmony can be brought about with shape, size, texture, line and colour.

The principle of proportions is sometimes called the law of relationship. It states that the relation between parts of the same thing or between different things of the same

group should be satisfying.

Rhythm means an easy connected path along which the eye may travel in any arrangement of line, form, or colours. This can be obtained by repetition of shapes; progression of sizes, and by continues line movement.

Emphasis is the principle that directs us to have a center of interest in any arrangement and a dominating idea in any scheme. The success of the result depends upon what, how, how much and where to emphasize.

Irrespective of fact whether a design is a structural or decorative one of the basic necessity is the selection of a motif. A motif is the most simplified form of design, which is formed mainly with the help of line. The motif can be of any origin namely naturalistic, stylized traditional or abstract forms. The chosen motif must itself lend for modification. Changing the size, shape and colour of the chosen motif could do design development. Though all art principles have a role to play in design development the principle rhythm plays the most important role.

The role of design organization in textiles design depends on whether it is an all over pattern, a border pattern, a pallu design or a combination of any two.

1.7 Repeats in motifs

Interesting, attractive repeating motifs are essential in designing and producing of textiles, upholstery, carpeting etc. A single repeat can be repeated in two principal ways to create a repetitive design: the side repeat and the half-drop repeat. Repeating a single repeating unit in combination of the side forms various patterns and half drop repeats.

To identify the repeating unit in any given design, the shape and size of the single unit has to be established and indicated by registration marks. These marks still forming the single repeat can appear anywhere on the pattern. The unit can be moved vertically or horizontally, best will always show a perfect repeat. To ensure the identities of the repeat trace the repeat on a transparent paper and move on the design.

- Side repeats pattern.
- Half drop pattern
- Brick pattern
- Border pattern
- Spotted pattern
- Striped pattern

The Half –Drop repeat:

Follow the same procedure with the butterflies in this half –drop repeat that one did with the flowers and leaves in the side repeat. The only difference is that each butterfly of a given size will not come just straight across to the next repeat, but will move up or down half of one repeat in the vertical direction. The advantage of a half- drop repeat is that it will not develop an unwanted horizontal movement as it repeats.

As butterflies of different sizes and shapes are added to your pattern, try to place them in different directions, even upside-down. Vary the spaces between them as well when you are pleased with the pattern your butterflies make, glue them down.

Brick pattern:

The name of the pattern helps to describe it, for it is structured, as a brick wall might be build. It is a half drop repeat turned on its side. The repeat line up perfectly horizontally but vertically they have placed halfway across the repeats that adjoin them and below. This gives variation to the vertical movement of the design.

Border designs:

Most border designs are composed of units or series of units or lines repeated at intervals over the given area. The design used should be one, which permits the eye to travel its length easily with out interruption. Some times a design which does not seen to leave the eye easily over its length would be very successful if the units used are brought together closely. The rhythm effect is achieved through the use of an unbroken line running the length of the border. Even if the lines are broken it should be done at regular intervals, so that the eye automatically bridges the gap and sees it as a continuous line.

Stripe pattern:

Stripes come in all sorts of styles and forms. They can be anything from plain stripes, all exactly the same width, to stripes made up of flowers and abstract shapes. They can run vertically, horizontally or even diagonally, and they can be structured as a half drop repeat or as a repeat. It has been constructed as a side repeats with four rows of stripes making up the width of a single repeat. If stripes are placed perpendicularly or even diagonally to each other, they can form a plaid.

Points to consider:

The width should be divided in view of the particular area to which the border is to be applied. Draw the top and bottom boundary lines leaving gap in between. The simple design that will suit the beginner includes the geometric units like circle, triangle or a square.

Colour also brings about rhythm in design. Hue and intensity should be used understandingly to bring rhythmic movement. An equal amount of dark and light make the border monotonous.

All over design:

An all over design is one, which is composed of a unit, or series of units repeated according to some definite method where by the entire surface of a given area is decoratively covered. The pattern can be produced successfully provided the units are repeated with ample space in between.

Generally an enlarged size of the design used in all over pattern will be suitable for a border. Different designs will cause lack of harmony and emphasis too.

Design for pallu:

Generally the design chosen for pallu is an enlarged form of the all over pattern or a border. It is always better to use a contrasting colour for the pallu are a darker tone. A pallu design can be either a continuous one or a separate units placed with space in between.

Summary:

Textile designs developed from three sources the quality of the fibres, the size and type of yarn and the way they are combined if more than one is used. Design is classified into two types: structural and decorative designs. Fabric designers acknowledge five families of patterns: Natural, Stylized, Geometric, Ethnic, Art movement and period styles. Art is a man-made expression of something beautiful. Art elements include line, direction, shape, size, value, texture and colour Balance is a restful effect obtained by grouping shapes or colours around a center in such a way that there are equal attractions on each side of that center. Harmony produces an impression of unity through the selection and arrangement of consistent objects and ideas. Proportion is the law of relationship.

Exercise:

I. Define the following:

a) Design b) Motif c) Repeat d) Layout

2. How are textile designs classified? Give examples for each class.

3. What are the elements of design? How are useful in designing?

4. Explain the principles of design in design development?

5. Answer the following:

a) Brick pattern B) All over pattern c) Half drop pattern.



Fig.1.1 Naturalistic design



Fig. 1.2 Stylized designs

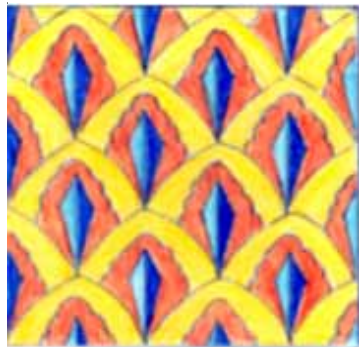


Fig. 1.3 Geometric designs



Fig.1.4 Ethnic designs



Fig. 1.5. Jacobean style



Fig.1.6 Abstract design

2.0 HAND WOVEN MOTIFS OF INDIA

2.1 Dacca Muslins:

Dacca (now the capital of Eastern Pakistan) was, for centuries, synonymous with the finest muslins the world has ever produced by hand or machine. Dacca weavers' magic hands produced such exquisitely fine and delicate fabrics that the poetic name "*Ab-i-rawan*" (Flowing water), "*Baft-Hawa*" (Woven air), and "*Shabnam*" (Evening dew) were justifiably given to them. Exhibits in some of our museums prove even today that a yard's width of the muslin could easily pass through a lady's ring. One of them relates that a five yard piece of muslin could be packed in match box.

The value of Dacca muslins is estimated by the number of warp threads in a given length of the material as compared with its weight. The greater the length and the number of the threads, with comparatively less weight, the higher would be the price. Up to the beginning of the 19th century, the Dacca muslin saris, one of the most artistic and beautiful specimens of hand-loom textiles, were counted amongst their valuable and cherished possessions by the women of Bengal.

The saris are generally grey, white or black with blue or black designs. Occasionally, the patterns are woven in with bright coloured cotton, or silver or gold threads. The Dacca muslins with the woven-in pattern are known as "*Jamdani*" patterns. "*Anchal*" or "*pallos*" (end portions) and the borders are richly decorated. The rest of the sari is generally covered with numerous small booties. The common motif is the round design booties, which suggest *chameli* (Jasmine) flowers and around these are woven the leaves that recall those of the sweet smelling *champak*. When the sprays of flowers are spread all over the sari, it is called a "*Boottedar*" sari, and when the sprays are grouped in diagonal lines, the sari is known as "*Terchha*". But when the floral design forms a net-work which covers the entire field, then the pattern is known as "*Jatar*". Sometimes in *Jamdani* designs, the flowers are clustered together.

The borders and Palloo or Anchal (end portions) of saris are generally decorated with distinctive figure designs. The figures chosen represent birds, animals, and human beings. Peacocks or "*mayura*" and herons or "*hansa*" seem to be popular as bird-figures in the designs of Dacca saris. Also some of the motifs indicate the influence of mythological legends, as well as of the local traditions. The designs are commonly accepted as of Persian origin but many of the designs depict incidents from the Hindu mythology.

2.2 Baluchar Buttedar:

Baluchar, a small town near Murshidabad in West Bengal has become a noted and a highly valued name in the handloom textile history of India. The artisans of the locality produced very artistic figured silk saris known as *Baluchar Butedar*. In these saris the pallos were the most ornamented portions. The field of the remaining portion of the sari was decorated with small butis of some floral designs or figure designs of birds. The special feature of Butedar is that the designs used for the ornamentation shows a strong influence of Mughal art. The weaver of Baluchar “Toranj”(also called Kalka or guldasta) which is the most popular motif in weaving embroidery and printing throughout India, under its present application “the mango design” in the design of pallo, the famous ever popular “Toranj” as seen as though these are set in a frame. The border of the frame is representation of a lady smelling a flower and seated in a sort of niche. The inter spaces are filled with neatly arranged rows of Toranj lined with an outer border of flowering plant. The border design which is a simple and straight combination of a small Toranj and flowering plant is continued for the border of the whole sari.

The wonderful art of weaving fabrics in Baluchar is lost forever and a few extinct scattered specimens in some museums are the mementoes of the perfection it had achieved.

In Baluchar Butedar saris consisting of the buti designs are woven with a silk weft in old gold, white, red, crème, orange, yellow the ground colour usually being in a flaming red deep, purple or short with dark reds and blues. The ground colour may however occasionally be done blue but this was not very common in the past. The design of the field is generally made up in the traditional saris of butis, formal sprays both large and small set out on the sari ground like a mosaic each colourful spring like a enamelled. Jewel glittering to look at, the colour harmonies are invariably soft and subtle and reposeful, with only a muted whisper of frivolity, gaiety, glamour and romance.

The Anchala or end-piece of the Baluchar Butedar sari is traditionally highly decorated the design consisting of Kalkas, flowing plants the tree of life, animals, women conversing or in customary poses, ladies, with flowers, men smoking the hooka or shown riding all elaborately detailed, but with the animals and the male and female figures and even the plant life, highly formal and stylized.

The Baluchar butedar saris produced in British times show the introduction of European motif. The traditional Baluchar sari is mostly five yards in length and about forty-two inches in width. The end pieces are design running the whole width of the sari and are above twenty four to thirty two inches in height. It is therefore not too much to imagine how a sari is five yards long and forty-two inches wide could take as long as six months to produce.

2.3 Chanderi:

The muslins woven in Chanderi, a place near Gwalior (M.P.) have earned a name for themselves because of their fine quality. Chanderi saris are mostly cotton with borders and pallos woven in silk or gold threads sometimes mixed threads of silk and cotton are used for weaving. The fabrics are known as “Garbha reshmi”. The pallos of these are very artistically ornamented with gold threads while the ground of the sari is checked with butis in the centre of each check square. The borders are woven with double threads which produce an effect of two colours one on each side. The saris are woven in nine yard lengths and are very much valued by the Maharastrian ladies.

2.4 Maheshwari Sarees

Tassar silk weaving is the traditional craft of Madhya Pradesh. It is practiced in Khargone, Guna, and Bilaspur & Raigarh districts. Besides Kosa silk fabrics, Maheshwari & Chanderi sarees are the speciality of the state.

Maheshwar, the Tehsil head quarter of Khargone dist. Situated on the banks of Narmada River is a famous historical place. It is also known for its traditional handloom weaving. The credit of organizing handloom weaving goes to the royal family of Holkars. Devi Ahilya Bai Holkar, the then ruler of the state brought the weavers from Surat (Gujarat) and Mandawgarh (Dhar dist. of present M.P) and provided them all the facilities needed for the development of the weaving industry. The weavers’ class included the Maarus, Salvis, Momins, Julahas, Khangars and Kolis.

Silk weaving was introduced in early 1940s to Maheshwari, which was then known for its cotton sarees. Garbha Reshmi sarees became famous with a variation of silk checks on a cotton ground, both in warp and weft. This type of sarees was famous even in the 19th C. The Maheshwari sarees are famous all over the country, especially in the states of Maharashtra and M.P

The carvings on the Ghats of Narmada influence the border and pallu designs of Maheshwari sarees. Ahilya Bai was taking so much interest in the Maheshwari weaving that she used to develop designs for the sarees. The specialty of Maheshwari saree is its typical attractive border which looks alike from both the sides. The check pattern became so famous that many other weaving centers of Maharashtra and Coimbatore adopted it in their weaving. There are differently checks, which are known as Gunji, Pakhi, Popli, Dowra, and Chandtara etc. the material used for weaving is 80s count cotton yarn and 20/22 denier twisted silk yarn. Typical Maheshwari elements were the Ankhi-muthda and at times, the fine tie-dye stripe used as an accenting line is also known as Kotari and referred to as Chutki in Maharashtra. The change over from cotton to silk warp has made

it more difficult to retain the checks as the wastage was too high in case of silk besides the inherent problems of dyeing small quantities of silk yarn.

At present, about 1000 handlooms in both the co-operative and private sectors are engaged in weaving Maheshwari sarees. On an average, 400 sarees are produced a day. The cost of a saree varies from Rs 500 to Rs 2000 depending on its quality, type of yarn used, nature and extent of zari work.

2.5 Patola

It was among the choicest exports from the great textile centre in Surat along the Caravan routes to the markets of Samarkhand, Bohkhara, Baghdad, Basra, Damascus & Rome in the 15th & 16th Centuries. The making of a Patola is a difficult & complicated process. Its unique quality is that the threads of the warp & weft are separately dyed in portions in such a way that the patterns on the finished product emerge in weaving. Patola manufacturer is restricted nowadays but a few rare, choice pieces are still available. A type of Patola technique is employed in other parts of India to produce saris, bedspreads curtains & a variety of other fabrics.

2.5.1 Patola or Ikkat fabrics

The Ahmedabad Patola is a textile of a unique character. Mhesana district, in Ahmedabad is noted for the beautiful material. The methods of weaving in the ikkats of Orissa, the Pochampalli textiles & the Patola are some what similar, but the Patola weaver has retained his geometric designs. Whatever patterns or floral motifs he may choose for his materials he prefers to set them in geometric order. The order in the development of artistic work has always shown that geometric patterns coming the earlier stages, while stylized and floral motifs follow later. We may thus conclude that the ikkats are the later innovations of the Patola style of weaving. The riot of colour in the Patola makes it gorgeous. The interesting point in these textiles is the fact that the yarn in the warp is first dyed or block printed. according to the requirement of the motif. The design is achieved in the fabric almost with miraculous effect with a simple operation of the wool.

One of the loveliest contributions of the Indian dyer's skill to the world of textiles is the Patola, a kind of double ikkats where in the warp & weft threads are first tie-dyed and subsequently woven together, the dyed areas of the fibers coming together wonderfully to form the desired designs.

The Patola technique is seen at its best in the silk wedding saris of Gujarat & Kathaiwar.

The warp & the weft threads are separately dyed by the bandhani process. The silk warp is first dyed in the lightest colour & the dyer, keeping in mind the design to be produced.

2.6 Bandhani:

Bandhanis or choonaris are the colourful sari and odhnis dyed by tie and dye process. These are popular amongst the women of Gujarat, Kathaiwar, Rajasthan and Sindh. Premalatha Jayakar in her article on Tie Dyed Fabrics of India," in "Marg" refers to Bandhanis in the following words:-

"It is an auspicious garment. A symbol of youth and romance, love play & the "Sohag" (wifehood) of Hindu women. It is a garment of laughter."

Indian women are known for their love for bright colours. Also the tradition and the customs of wearing special colours on different festivals, makes it necessary for them to become familiar with the art of dyeing at home. Thus besides the expert professional dyers almost every Indian girl learns by practice a good deal of the art of dyeing and Bandhani work.

Bandhanis differ from Patola as regards the stage at which they are dyed. Like Patolas they are dyed by the tie & dye process, which, however, is done after the fabric is woven. The fabric is folded over several times until reduced to a small thick square or a rectangular piece. The piece is then damped and pressed on a block on which a design is carved. The impressed portions are picked up by the finger nails (the nails are allowed to grow especially for the purpose and are used as a sort of pincers) & are then tied up with cotton thread in a thickness sufficient to resist the dye.

It needs training and great skill to pick up all the layers at once and make it crinkle in a particular given manner. The bandhanari or the woman who does the tying up work works swiftly and ties up all the impressed portions without cutting the thread but carries it over from one point to the next. The dyeing process is carried out in the same order as in Patolas, starting with the light colours & finishing with the dark ones. But each time, before a new shade colour is applied the tying up process has got to be repeated.

Usually, the designs used are copies of a few traditional ones & by the practice of tying up the same design over & over again the bandhanaris become expert to such an extent that they are able to dispense with the process of impressing the fabric with the design.

The motifs of the traditional designs used for Bandhanis represents animals, birds, flowers and dancing dolls. When elaborate designs are used the Bandhanis are known as “Gharchola”. In some of the expensive “Gharchola” gold threads are woven in to form checks or squares, and then the designs are formed in each of the squares by the tie and dyed process. The “Choonaris” are very light fabrics, and the designs for these consist of dots or pin heads irregularly spread all over the field of the cloth. Sometimes the dots are grouped together to form a design, and the design is known as “Ek bundi” (one dot), “Char bundi” (four dots) and “Sat bundi” (seven dots).

It might interest our readers to know that in some parts of Rajputana e.g. , Alwar, professional dyers existed till a couple of decades ago, who could dye even the finest muslin in two different colours, one annas four a yard. This art too is now extinct but specimens can be found in some museums.

2.7 Paithani & Pitamber

Paithanis are the beautiful and rich saris made at pattan or paithan in the state of Hyderabad (Deccan). These are exquisitely fine silk fabrics with gauze like texture ornamented with gold patterns woven in the texture of the cloth. The borders and palloos which are woven separately as gold brocades are sewn on to the sari. The colour of the sari is usually dark orange, red, or yellow, with gold lines arranged in a check or in stripes. The inter –spaces are usually filled in with a figure depicting a goose with an olive branch in its beak.

The borders and palloos are having very striking designs in bright and showy colours such as moss green, yellow, and bright pink. The common motif of the design is the peacock supporting a big vase with sprays of brilliantly coloured flowers so arranged to forma Persian cone pattern. The vases with flowers are placed in between two pillars joined with the toran (arch). The design is worked in silks of blue, red, and white colours on a field of pure translucent gold. The whole effect is gorgeous and eminently artistic in its perfect harmony.

The craft is more allied to weaving than to embroidery. It is woven on both sides on a loom, unlike the ordinary form of needs work that is done to be seen on one side of

the fabric only gold & silk yarn stretched on the loom from the foundation and 4-24 shuttles are employed to produce the embroidered design. The latter drawn on paper, is placed under the length wise threads and the shuttles passed through these as demanded by the pattern and the colour. This is slow and laborious work and may take as many as 8 days to produce a square foot of the loom embroidered fabric.

In olden days paithanis were usually woven to order for the royal family and the weaver took months to complete a single piece. Now days these are not woven.

Pitambars are bright coloured silks five yards in length with gold borders on them. These are worn by men specially when performing any of the religious rituals.

2.7.1 A Peshwa favourite

History notes that the Paithani fabric found favour in the court of the 18th century Peshwa rulers. Madhavrao Peshwa was enchanted by dupattas in red, green, saffron, pomegranate and pink, proffering those with the asavali pattern of vines with blooms. The Nizam of Hyderabad is said to have visited Paithani looms, while his daughter-in-law Niloufer even introduced new designs to its border and pallav.

In traditional Paithanis, the three-ply fine sari had a 20/22 warp, with real gold zari used for its butis, border and pallav. Originally, natural dyes from amla, henna, pomegranate, indigo and turmeric were used to dye the silk.

The Paithani sari's dhoop-chaon (light & shade) effect is achieved by intertwining two silk threads of different colours together through a basic dobby weave, while multiple spindles or tillies achieve its intricacies without a jala or jacquard mechanical contrivance.

On adjacent looms, other butis spin into view-Tara (star), Mor (peacock), Rui phool (flower), Paisa (coin), Pankha (fan), Kalas Pakli (petal) or even Chandrakor (moon). On the floor, youthful Mirabai Sherke fills her spindles with zari thread. At another loom, Amitha & Sheela work at an intricate golden pallav of Bangdi Mor or a bangle-like peacock pattern.

2.8 Brocades Of Banaras

So long as human brain will continue its superiority over computers, aesthetic sense will compel him to admire the out of world beauty woven in silk (the queen of textiles) by the weavers of Varanasi.

Name “Banarasi” has been derived from Banaras- a district in U.P. Generally, the product gets its name and fame from the name of its origin.

Varanasi (Banaras), pre-historic holy city known as place of sacred shrines, learning and culture having thousands of ancient temples and ashrams, magnificent ghats, multitude of devotees is said to have been built by Gods on the bank of holy river Ganges. Varanasi is also known as “Lyon of India” because of the Banarasi silk which still continues to win the imagination of princes and peasants alike due to its dazzling splendor and creative instinct of workmanship.

During Mughal era, Persian artists brought revolutionary development not only in design but also in shades of Banaras sarees. Gold thread from France, silk yarn from China and dye stuffs from Germany were introduced to produce more delicate marvelous in rich innovations of the age. The infusion of east and west gave new dimensions to the textiles industry of Varanasi. During British rule, East India Company introduced these fabrics in European

2.9 Himrus & Amrus:

Himrus are the famous silk brocades of Hyderabad (Deccan). The state’s second largest town-Aurangabad is the chief centre of the art of Himru-weaving. *Himru* probably a derivative of the Sanskrit Him (snow) is a fabric used in winter. The ground is cotton, and silk is used for the brocade on the surface. The yarn used for weaving *Himrus* is spun so as to produce, when woven, the effects of a warm soft material like wool. The peculiarity of the *Himru* is that the silk thread which is used to form a pattern on the surface of the cloth is carried to the reverse side of the cloth and is collected there in clumsy long loops. This forms a rather loose but soft warm layer. Further, the accumulation of the loose threads on the reverse of the cloth necessitates a lining to all garments made of *Himru* cloth. Thus *Himru* garments make very warm clothing suitable for the cold season.

When silk thread is used exclusively for weaving *Himru*, the fabric is called “*Amru*”. Amrus are generally made in Ahmedabad, Surat & Banaras. *Himrus* are used for men’s Achkans, Chogas, and for female wear also, e.g., for blouses and lehngas. For generations, the Nawabs of Surat used a special quality of *Himru* fabrics for their dresses which was called the “*Nawab’s Himru*”. These fabrics are also used for upholstery and curtains.

2.10 Pochampalli

The well known Tie & Dye process consists in dyeing the required portions of cotton yarn & protecting the other portions which are to remain white by tying them

with cotton yarn from taking the colour at those spots which are visible after the dyeing process and the removal of the tying material.

The warp is spread longitudinally in a shut form and the design is marked on it. The portion to remain white is tied with cotton thread white, the portion to be dyed is left exposed. The work of tying proceeds until the whole design is completed. The tie warp is then immersed in the dye bath and dyed. The colour impregnated on the exposed portions which are repeatedly dipped in the dye with the handle. After the dyeing is completed the warp is well washed in cold water & dried. The tie work is further repeated to produce a darker shade in the selected portions which are left loose this time. The tying & dyeing is repeated as many times as the number of colours in the designs. After the final dyeing is completed the tieings on the yarn are removed. This completes the process for warp dyeing. The tie dyeing of the weft is done similarly but the weft is placed on semi circular peg board. Here again the design is marked and the tying commences pick by pick. After the completion of tie dyeing of warp & weft, weaving is undertaken.

The warp is placed in position on the loom in a slanting form and the picks are inserted one by one. Great care is taken to see that the pieces fall in the correct are richly decorated position. Each piece is given individual attention by regulating it in its correct adjustment of the design. Designs used in pochampalli are traditional once. Designs such as temple model, parrot, elephant, peacock, swan etc in geometrical forms.

Summary:

The Dacca muslins with the woven-in pattern are known as “*Jamdani*” patterns. Baluchar, a small town near Murshidabad in West Bengal produce very artistic figured silk saris known as ***Baluchar Butedar***. Chanderi saris are mostly cotton with borders and pallos woven in silk or gold threads sometimes mixed threads of silk and cotton are used for weaving. The specialty of Maheshwari saree is its typical attractive border which looks alike from both the sides.

Patola, a kind of double ikkats where in the warp & weft threads are first tie-dyed and subsequently woven together, the dyed areas of the fibers coming together wonderfully to form the desired designs. The warp & the weft threads are separately dyed by the bandhani process. Paithanis are the beautiful and rich saris made at paithan in the state of Hyderabad (Deccan). These are exquisitely fine silk fabrics with gauze like texture ornamented with gold patterns woven in the texture of the cloth. During Mughal era, Persian artists brought revolutionary development not only in design but also in shades of Banaras sarees. Himrus are the famous silk brocades of Hyderabad (Deccan). The state’s second largest town-Aurangabad is the chief centre of the art of

Himru-weaving. When silk thread is used exclusively for weaving Himru, the fabric is called “Amru”. Amrus are generally made in Ahmedabad, Surat & Banaras..

Exercise:

1. Enumerate the Decca muslins?
2. List the hand woven fabrics. Write about Chanderi saris?
3. Write about Himrus and Amrus
4. Explain techniques of Patola? What are the common designs and colours used?
5. Describe the motifs, colour combinations and weaving techniques of pochampally sarees?

Figure 2.1



Bandhini designs



Fi g 2.2 Baluchari saree



Fig. 2.3 Jamdani saree

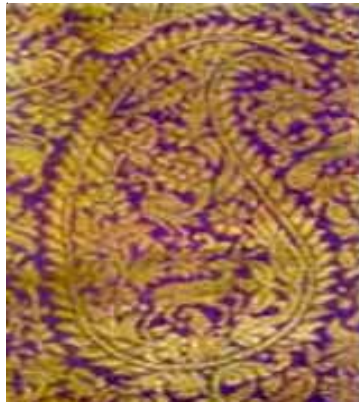


Fig. 2.4 Intricately Woven motifs of Banaras Brocades



Border of a Banarsi Saree

Fig. 2.5 Borders of Banaras Brocades



Fig. 2.5 Tying of yarns for Patola sari



Fig. 2.6 A Patola sari



Fig. 2.7 Chanderi sarees



Fig. 2.8 Pochampalli weaving technique of Andhra Pradesh

3.0 Printed Fabrics

3.1 Madhubani Painting:

3.1 Introduction:

India is a country with rich tradition and religion which is reflected in the expression of folk art. Due to diversified talents, interests and inspiration, each state has its special identity for its unique folk painting. The art of madhubani painting is the traditional style developed in the surrounding villages of madhubani in Mithila region, Bihar. Madhubani is solely done by the women of the region; through to day men are also involved to meet the demand. The work is done on freshly plastered or a mud wall. For commercial purposes, the work is now being done on paper and cloth etc. The paintings are basically of a religious nature. They appear in the special rooms in their homes (in the pooja room, ritual area & bridal room) and on the main village walls, etc. for ceremonial or ritualistic purpose. Figures from nature & mythology are adopted to suit their style. Cotton wrapped around a bamboo stick from the brush. The colours applied are prepared by the artists. The skill is handed down through generations, & hence the traditional designs & patterns are widely maintained.

3.1.1 Significance of Madhubani Wall Painting:

Madhubani painting is a traditional folk art of region of Bihar. Madhubani means a “*Forest of Honey*”, it is a place near Durbhanga district in North Bihar. So under this Mithilanchal region these places famous for their beautiful traditional folk arts, which are named after this place & called Madhubani painting. The paintings on the wall have deeper themes & narratives as they are the stories told sometimes in a series of panels. Apart from their decorative purpose, they also constitute a form of visual education like picture books from which one learns about ones heritage. Some outstanding things are done in the Madubani area. They have naiveté & simplicity, which perhaps, attracts, soothes, pleases the eyes.

As Lord Ramah in wedding procession entered Mithila, this spectacle mythological tales & the flora & fauna of Mithila came alive as the wall decorations show. These beautiful expressions of human talents, carried down through tradition & custom are till today related to wedding decorations & bridal paraphernalia. This form of art is commonly known today as “Madhubani painting”, after village in the Durbhanga district in Bihar where almost every home is decorated with painting made for ceremonial occasions.

3.1.2 Madhubani Painting Rituals:

Paintings on the wall are communal act done by all the women of a family or group of women as part of rituals & festivals. The themes were taken from native mythology, legends & history. This region has been swept of many religious emotions, including Buddhist and Tantric each leaving its own imprint through motifs in this place in the forms of picturisation. It's an important part of their religious thoughts. In their ritual, the aspirations of the people to have the connection with the gods become a vague sense of connection with the supreme god from whom men & women are separated. The mythical stories of the heroes & heroines of the epics "Ramayana" & "Mahabharata" were also inherited by the folk; the Madhubani, through the recitation of these epic stories during the yearly festivals.

3.1.3 Colour Used For Painting:

Colour of painting is used according to religious symbolism. Initially all vegetable dyes were used for the painting but today they have accessed to the variety of poster colours used according to their needs & to enable them for more experiments with colours. These paints have a narrow range of colours; generally Gulabi (Pink), Peela (Yellow), Neela (Blue), Sindhoora (Red) & suga Pankhi (Parrot Green). But colours used in Madhubani paintings are usually deep red, green, blue, black etc. Besides deep colour they also apply light yellow, pink & lemon.

3.1.4 Brush Used For Painting:

A suitable surface on the wall, the requisite paints & finally, some brushes are required for painting. When the paints are ready, the artists apply two kinds of country brushes, neither of which has yet been commercialized. For outlines & tiny details a small bamboo twig is used, its end being slightly frayed, so that the fibre is like hair, while for putting on the larger washes a small piece of cloth is tied to a twig, popularly known as "*Pihua*". The women with very limited resources use indigenous colours that they can make themselves & finally bamboo sticks wrapped in cotton used for painting.

3.1.5 Material Used For Painting:

As this tradition was initialized with a purpose of decorating the exterior of the house, the walls & the floors are always served as the canvas. To bring the maximum effect the walls & floor of the house was coated with cow dung & mud paste. When it dried it will give a perfect dark background to the bright painting done with white rice paste. Later they were noticed by the urban people & the art moved to hand made papers as the painted walls could not be moved to their living rooms. But to bring the same

3.1.6 Symbols Used In Madhubani Painting:

The highly symbolic paintings were used “Khobargas” (Bridal Chambora) where couples spent the first few days of the married life. Here there will be divine couples like Shiva-Parvati, Radha-Krishna.

Animal Forms:

There are images of birds & animals with natural phenomena. Then sign of fertility & prosperity for good luck like elephant, fishes, tortoise, parrots, pea-cocks etc.

Human Forms:

In this paintings include various Gods & Goddesses. The subject matter varies according to the occasion. God –Goddess such as Vishnu-Lakshmi, Shiva-Parvathi, Rama-Sita, Krishna-radha etc.

Other Forms:

In other forms, the flora, fauna, myth & legend, social customs m& expressions giving ritualistic symbols are painted. In these paintings include flower (Lotus tree, bamboo forest etc.)

3.2 Kalamkari

3.2.1 Men behind Magical designs:

The graceful Kalamkari designs are symbols of skillful, talented craftsmen, who design them. Block making plays a crucial role, in printing a Kalamkari fabric, as it needs to be sharp. If the block is not good, the colours may spread around the cloth. The craftsmen who make these blocks take utmost care in carving them. Generally teak wood is used for engraving blocks. The wood selected should have no holes & cracks, and surface of the block is evened. The design to be carved is outlined on a paper sheet, which is stretched out evenly on the wood and gently tacked into place along the edges. A metal instrument, shaped like a pencil the sharp pointed edge, is lightly hammered along the lines of the pattern. This causes the transfer of the outline on to the wooden surface, and the block maker begins to etch the design. Although Kalamkari is practiced in other areas such as Kalahasti, the degree of commercialization & marketing linkages are in much greater evidence at Machilipatnam.

The kalamkari block printing produces a variety of designs on bed sheets, wall hangings, sarees, lungis, napkins etc. Many Islamic patterns are prominent among the designs of Machilipatnam.

The designs produced are of three types, which are evolved to suit the needs of its consumers. The *shamiyana* covers and prayer cloth are painted with typical Persian designs, which are known as *Gulabadami*, *Gulahati*, *Cherangmorkmath*, *Gulbechadar Bagal*, *Jaimaaz* etc. Some of the products intended for export to western countries, are *Palang Posh* (bed sheets), door curtains, & tablecloth. Flowers, bird, & animal forms are the commonly used designs.

The industry of dyeing and printing with local vegetable colours known as “Kalamkari” work. Kalamkari work is being carried on at Machilipatnam from time immemorial. The printed cotton fabrics are of three types

- Block Printed
- Block printed and Hand painted
- Hand painted only

Designs are first outlined and then filled in by colour blocks. Only for indigenous colours are used. The effect is marvelous. Sarees, door curtains, bed spreads are made.

Kalamkari is the most ancient industry in India. Sri Kalahasti in A.P is famous for Kalamkari hand printing. They are exclusively hand printed to be used as tapestries and hangings in temples. Here, vegetable dyes of deep rich shades are used with strong outlines in brown and black. All of which produced a bold and striking effect. Flowing water as from a river is desirable to clear it of starch as no washing material is used. It is next given a myrobelum solution bath to make black dye permanent. The Outlines of the drawing are traced out by free hand from memory or copied from an old piece with charcoal sticks made from tamarind twig. The final lines of the picture are drawn with a sharply pointed bamboo stick using Kalam, a mixture of molasses and iron filings. The artist first fills in the background colours, then the various figures where red is the background. It is made a deeper shade by first applying alum to the cloth surface. Over this figures also in red are made but more subdued so that reds don't much. The areas not covered by red, though faintly tinted can be bleached by the use of alum to enable them to take on other colours like blue, yellow, green.

3.2.2 Techniques of Kalamkari:

Take camel or buffalo or cow dung equal to one fourth the weight of the grey and mix it with water. Dip grey cloth in mixture and leave for twelve hours. Then remove the cloth and wash it in running water and spread the cloth on green grass at the banks of the canal. Go on sprinkling water on the cloth as and when it gets dried till evening. As the sun rays fall on the cloth gradually it gets bleached. Repeat the process for three more days by which time it gets fully bleached. Finally wash the cloth in water

and dry.

3.2.3 Application of Myrobelums:

Take 25-30 gms/ltr myrobelums. Soak them a night in water. Afterwards crush the myrobelums and extract the juice. Then treat the bleached cloth by hand and dry. Now the cloth is ready for printing.

3.2.4 Preparation of black colour solution:

Black colour solution is prepared with iron pieces, old jaggery and well water. Take iron pieces, old jaggery and water in 2:1:10 ratios respectively. First burn the iron pieces. After getting cold clean the pieces of bricks and then wash well. Powder the old jaggery. Keep iron pieces and old jaggery powder in an earthen wear pot and pour well water. Close the lid. Open the lid weekly once and mix the solution by hand. After three weeks take out the iron pieces and use the black colour dye for printing. Used iron pieces can be reused for the preparation of black colour solution.

3.2.5 Block Printing:

Prepare the black colour paste by taking black colour solution and gum Arabica crystals in 1:1 ratio. Print outlines with black colour paste. After completing the printing outlines with black, print alum (patika) paste where ever the red colour is required. For preparing the alum paste take one kg of alum and boil for 30-45 min in about 5 liters of water. After boiling about 2.5 liters of alum solution is obtained. Mix 2.5 kegs of the gum Arabica paste in the solution and use for printing.

If the brown colour is required mix the black colour paste and alum paste in the ratio as per the requirement of the shade. After completing printing, dry the cloth.

3.2.6 Washing:

Wash the printed cloth in flowing water. Thorough washing should be done. While washing care should be taken to avoid the folding of the cloth other wise ther is a possibility of formation of stains while developing. Then dry the cloth.

3.2.7 Developing:

Use copper vessels for developing. Take 0.5 to 1gm/ltr aliyerrine and prepare the solution with boiling water. Take water for developing at material to liquor ratio 1:20. Add the solution to the developing bath. Add jaji leaves to obtain uniform ground. Dip the above in the bath at 40 degree C and work. Raise the temperature gradually to boil with in one hour while turning the cloth in the developing bath. Red colour develops at the portions wherever were the alum is is printed and brown colour develops where ever the mixture black and alum is printed. then wash the cloth and dry.

3. 2.8 Application of Yellow Colour:

For preparing yellow colour take 1kg of myrobalanm flowers and boil in about 5litres of water. Boiling should be carried till the flower becomes soft. Then cool it and filter the solution. Paint with “kalam” on the starch applied cloth wherever the yellow colour is required.

Afterwards treat the cloth in 20gms/lit alum solution for about 10 min., which helps to fix the yellow colour on the cloth. Finally wash the cloth and dry. If white ground is required again bleach the cloth with buffalo dung solution as explained above. Normally the colours black, brown, red and yellow are used in kalamkari.

Traditional method of application of indigo blue is not being followed by the printers as it is very time consuming and laborious. However vegetable indigo blue can be printed or painted by a vins caustic or hydrose. Take vegetable indigo blue cake, caustic, hyrose in 1:1:1 ratio, paste the indigo blue powder with little turkey red oil and add required amount of water of sixty degrees centigrade temperature followed by the addition of caustic, mix well and add slowly hydrose by stirring the solution. Allow for 15 min for ageing. If it is for printings add gum arabica paste or if it is to be painted take directly for painting with brush on the starch applied cloth. After painting/printing dry the cloth and wash well in water. Green colour can be obtained by painting blue on yellow.

Summary:

India is a country with rich tradition and religion which is reflected in the expression of folk art. Due to diversified talents, interests and inspiration, each state has its special identity for its unique folk painting. The art of madhubani painting is the traditional style developed in the surrounding villages of madhubani in Mithila region, Bihar. Madhubani is solely done by the women of the region; through to day men are also involved to meet the demand. Madhubani painting is a traditional folk art of region of Bihar. Vegetable dyes were used for the painting but today they have accessed to the variety of poster colours used according to their needs & to enable them for more experiments with colours .

The industry of dyeing and printing with local vegetable colours known as “Kalamkari” work. Kalamkari work is being carried out at Machilipatnam from time immemorial with block printing technique. Sri Kalahasti in A.P is famous for Kalamkari hand printing. They are exclusively hand printed to be used as tapestries and hangings in temples.

Exercise:

1. Describe the painted textiles of Bihar?
2. Enumerate the natural dye hand printed textiles famous in Andhra Pradesh?
3. Describe the motifs used in Madhubani & kalamkari?



Fig 3.1 Madhubani paintings



Figure 3.2 Madhubani paintings



Figure 3.3 Hand-block printed Kalamkari article



Figure 3.4 Hand-block printed Kalamkari articles



**Fig. 3.5 Hand-painting a bed-spread
Sri kalahasthi technique**



Fig. 3.6 Hand-painted cushion covers of Sri kalahasthi

4.0 Embroidery Fabrics

4.1. Kashida of Kashmir :

The word Kashmir can be splitted as “Kas” means “Water channel” and Mir means “mountain”. However Kashmir means “rock through” in the regional language.

The northern most state of India, Jammu and Kashmir is known for its beauty. Kashmir embroidery has become world renowned, largely through its superb shawls. All facts of Kashmir’s incomparable beauty seem to be reflected in its needle work. Embroidery here is known as Kashida.

4.1.1 History:

The shawl industry flourished by Sultan Zavri-ul-abiden during 15th century. He brought craftsmen from Persia to revive the existing art. The demand for Kashmir shawls increased during Mughal rule. However, the shawl industry decreased by the end of 19th century probably because of increase in the cost, change in fashion trend, all over the world.

4.1.2 Types of stitches:

Kashida embroidery of Kashmir is worked in several different forms.

They are:

- **Zalakdozo:** It is a chain stitch done with hook and on almost anything from the choice shawls to the roughly used floor coverings, in long and flowing designs.
- **Vata- Chikin:** Buttonhole stitch used only in thick fillings seen in landscapes, garden and crowded scene.
- **Doria:** Open work done on all type of fabrics.
- **Talaibar:** Gold work done on brocades and silks.
- **Jall:** All over embroidery designs are worked in trellis pattern.
- **Skikargarths:** Hunting scenes.
- **Aqli:** Delicate filling in stitches in multi coloured threads in Kari shawls.

4.1.3 Motifs:

Before commencing the embroidery work the selected design is traced on the fabric. The design, these are done by the professional traces called Naquashband (Nakshaband) that follow the traditional technique even today.

The design is outlined with kalam; the pen Greater percent of motifs are picked up from nature, which provide inspiration to Naquabandi.

A large variety of flowers of tremendous colours, shapes, size namely Lilly, tulip, saffron, iris, bunches of grapes, apple, almond, cherries, plums, birds like kingfisher, parrot, wood pecker, magpie, canary all appear in Kashida. The chinar leaf is the motif most abundantly used along with Cyprus tree.

Many beautiful coloured butterflies found in the sanctuary and valley have occupied an important place in the Kashida. Animal and Human figure are not found commonly, probably the influence of Muslims. But depicted hunting scene popularly known as Shikargarh available only in museums of Srinagar. These motifs are not used in the motifs of Kashida of Kashmir.

Indo-Persian Art around 17th & 18th century provided cone shaped mango motif, the kaka, badami butta, buta. This is done in naturalistic, geometrical & in stylized forms.

4.1.4 Embroidery threads:

Embroidery thread employed earlier was fine quality woolen yarn. Gradually woolen yarns were replaced by rich & lustrous silk threads. The bright, gorgeous in-expensive art silk (rayon) thread has entered the industry by replacing the expensive silk threads. Cotton threads of bright colours with good colour fastness are also used abundantly.

4.1.5 Colours used:

The embroidery is comprised of wide spectrum of colours of light and dark shades, such as crimson red, scarlet red, blue, yellow, green, purple, black & brown. Earlier the yarns were locally dyed with indigenous natural colours. But nowadays all the threads used in the industry are invariably mill dyed with synthetic dye staff.

4.1.6 Types of Woven Fabrics:

Shawls:

Pashmina Shawl: these are superior quality shawls. They are made from wool of the Capra Hercus, a species of wild Asian mountain goat. So, that the name given.

Do Shawl/ Double Shawl: these are solids in pairs. Two identical shawls were stitched together so that when draped over shoulders wrong sides were not visible.

Do Rookha: Double side work in which there is no right & wrong side. Simple patterns were reproduced on both side, but sometimes with different colours.

Kasaba Shawls: Square in shape and produce on account of European demand. They are generally twill weave/ damask in plain work.

Jamewar Shawl: Woven in wool and some cotton. The floral designs and brocaded parts are generally in silk.

Refoogari: (Darning): It is worked with the same type of material as that of the base so that interweaving produces a fine texture in the fabric.

4.1.7 Embroidery on shawls:

The embroidery on shawl is done at different parts like border, corner, centre, all over scattered. They are:

- **Hashia:** Border design, which runs all along the length of the shawl on either side.
- **Phala:** It is done on both the ends of the article, popularly known as Pallu.
- **Tanjir or Zanjir:** Border with chain stitch running either above or below the Phala.
- **Kunj Butta:** Cluster of flowers in the corner.
- **Butta:** Generic name for the floral design.
- **Appliqué:** Another variety of Kashmir embroidery, which is very unique done on carpets, shawls & woolen blankets.
- **Tapestry work:** It is done with a blunt tapestry needle, where the material is stitched on a wooden frame with the tracing kept along its side.
- **Zalakdozi:** Resembles crochet. Various articles are prepared by hook embroidery and one of them is Namda, a felt carpet.

4.2 Phulkari of Punjab

Phulkari is the most important world famous embroidery textiles from Punjab. Phulkari are analyzed as “Phul”, flower and “Kari”, work that is floral work or flowering. It is a special, traditional handwork mainly found in Gurgaon, Hissar, Rohtak, Karnal and Delhi. However, in West Punjab this embroidery is famous as “Bagh” means garden, in which the entire surface of the shawl is decorated with floral designs.

Phulkari is an integral part of the life of Punjabi girl. In any function, festival, get-together functions one or the other type of Phulkari or Bagh is invariably used. It is believed to be auspicious, a symbol of happiness, prosperity and Suhag of a married

woman. However, it is considered as a great treasure. The rough and coarse base material of Phulkari symbolizes hard and tough yet colourful life of Punjabi women; the rich and glossy work with pat portrays her dreams and aspirations. It can also be added here that, Phulkari adds delicacy, elegance and grace to the heavy personality of Punjabi women

Chaddar, Bagh and Chope are the three types of embroideries, which are grouped according to the craftsmanship. “Chadder”, the shawl having the surface decoration is used by the bride during the “Phera” ceremony that is, when she takes seven rounds of the holy fire. It is always a red coloured khaddar having five flowers centrally arranged and the other four motifs in each corner of the shawl.

Bagh having overall interconnected designs and were geometrically conventionalized. Chope is little longer than usual shawl, where only the edges along the selvages were embroidered with golden yellow coloured silk floss against red coloured khaddar.

4.2.1 Materials used for Phulkari are:

- Khaddar- a loosely spun and coarsely woven fabric
- Chaunsa khaddar – woven with fine yarn
- Hal wan-Light weight finely woven fabric.

4.2.2 Threads:

Soft, glossy, untwisted silk thread is employed for the stitching, which is basically supplied from Kashmir, Afghanistan and Bengal, which is called “Pat”. To complete a Phulkari work it requires around 50-100 gms of silk thread.

The darning stitch is the basic unit of Phulkari and the workmanship of both Bagh and Phulkari are graded according to it’s length and density of stitches.

4.2.3 Types of Phulkari

Chope: A precious red coloured Phulkari prepared and presented by the maternal grandmother of the bride at her wedding function. The triangular designs are embroidered with golden yellow pat by double running stitch which appears identical on either sides of the cloth.

Subha: Another rich, gorgeous, red coloured Phulkari work by the bride during her wedding.

Tilpatra: It is scarcely embroidered. Small, tiny embroidered dots in the body, of any inferior and inexpensive khaddar.

Nilak: It is a Phulkari of blue colour. It is worked on black khaddar. The motifs commonly embroidered are the articles used at household like comb, fan, umbrella or rumaal and so on.

Darshana Dwar or Darwaza: This is a presentation of some of the religious institutions offered during ceremonial functions.

Thirma: A Phulkari done on white khaddar.

Sainchi Phulkari: It is the folk embroidery of Malva region of Punjab depicts the true rural life. The motifs depict the various activities of rural life like ploughing, harvesting, a water carrier, and smoking hukka, pounding, grinding, churning, spinning and weaving and so on.

4.3 Kantha of Bengal

The traditional folk art of Bengal is famous as “Kantha”. This is double faced where the design appeared identical on either sides of the cloth. The great length of stitch is broken into tiny tacking which give almost a dotted appearance on either side of the cloth.

Kanthas were produced in Hugli, Patna, and Satagon, faridpur, Khulna & other parts of East & West Bengal. The motifs used in Kantha embroidery have a great influence of Portuguese & European traditions. The motifs are animal figures, human figures, floral motifs like trees, creepers, lotus, birds, fish, submarine sceneries, dancing peacock, swan, lion etc.

Lotus is the most common and important motif widely used in Kantha. An all over pattern of lotus may have the petals of red alternating with black petals kantha means patched cloth and special significance of kantha is quilting. The size & thickness of Kantha varied according to its type. The layers of pieces are sewn together by simple darning stitch in white thread. The design is first traced and coloured threads do the filling. The needle work is done by original darning stitch along with satin & loop stitches

4.4 Chamba Rumals

The evidence of about existence of this embroidery pages back to fifteenth century, mentions in Buddhists literature that embroidery was practiced in pathankot, chamba and other neighboring remote villages. this rumal had the base of creamy white colour, on which beautiful human figures, ever green trees with colour blossoms, animals like goat and deer, saddled horse were embroidered. It is believed that this embroidery is influence of pahari (hill) miniature paintings and has fetched a definite shape.

The primitive traditional chamba has undergone gradual evolution with respect to motifs, colours, stitches workmanship, and aesthetic appearance. Traditionally the ground fabric used was two types of unbleached cotton cloth, second type being hand spun, hand woven coarser, relatively heavier khaddar. In later period the unbleached cotton material was replaced by mill made cotton cloth.

Hand drawing of free style was the mode of tracing or outlining the design or motifs. In Pahari embroidery the themes are taken from Purana, Ramayana & Mahabharata. The threads used for embroidery was untwist of pat which gave rich effect against dull cotton ground. It produced an impression of smooth, glossy, gorgeous surface enrichment. Most commonly used colours are red, yellow, green, blue, crimson and purple. Blue colour is always used for lord Krishna; red, blue and white colours are used for Brahma, Vishnu and Maheswara respectively. The outline of the figure is always worked with black.

Embroidery is done with double satin stitch done in both right and wrong side. It is done so finely that not only the background is hardly visible but very difficult to identify the right side, since the work is never started with a knot with a back stitch and the thread never been joined by knot. It was also observed that in some of the old wall hangings chain stitch was used for both filling and out lining, in which case right and wrong side of the work was clearly identified.

Motifs consists of symbolic animals like leaping tigers, running goats, cantering horses, jumping deer, cows, calves, birds motifs, comprised of peacock, and parrots.

Rumal comprised of elliptical frame work having two or three inches of floral bodies, on all the four sides, centre of rumal has creeper motif and guldasta in the corners pointing towards the corner. Sometimes complete rumaal has the motifs of animals, birds, trees, creepers. It is also observed that many musical instruments such as flute, tambura, drums, veena, sitar, tabala are used in the art.

Main themes in the embroidery are:

- **Rasmandala** : lord Krishna sitting in lotus
- **Kaliya damana**: Krishna killing the horrified kalinga sarpa
- **Rukmini harna**: the elopement of rukmini and her marriage is the zist of the theme.
- **Sumudra manthana**: the ocean was churned by devas(Gods)
- **Battle of kurukshetra**: pandavas occupy the left hand side of the panel along with lord Krishna on his chariot, kauravas on the right hand side and abhimanya is placed in centre of the panel, showing the picture of being caught in the chakravilu.
- **Raga ragini**: raga, the tune of song and ragni, the mode of song expressing the base for songs sung in a minimum of six versions.
- **Ashta nayika**: It expresses various moods and personality of Nayik and Naika.

Chamba rumals are versatile in their utility, used as a cover while offering gifts in the mandir or temple, either to deity or priest. Rumals were also used to cover the gifts that were exchanged during weddings.

4.5 CHIKANKARI

The white embroidery on white cotton especially on muslins is known as chikan work. Chikankari is an industry nurtured and developed in Lucknow. Daintiness and delicacy added to a finish and a richness of its own, are the outstanding characteristics of chikankari. It is also famous as shadow work.

Chikankari is though done on the white muslin background now is done on fine cotton material like voile, two x two, cambric, mulmul, chiffon, georgettes, coil cotton, organdy, nets and other similar sheer fabrics.

The motifs are traced prior to embroidery. The designs are prepared and transferred on the cloth with help of wooden blocks with washable colour, by simple stamping technique. Chikankari is something like unity in diversity i.e., it includes some simple stitches like satin, back, and stem, buttonhole and herringbone stitch, giving a clustorous effect which is simple, gentle and subtle.

There are two styles of chikankari work, flat style and knotted embossed effect. "Bukhia" is nothing but satin stitch, which is done on wrong side of the material and design is delicately outlined with tiny running stitches from the right side. This sort of embroidery gives a transparent effect. The effect of fine muslin background produces a shadow appearance. The simplified bukha is herring bone stitch. The stitches that cover the back of the cloth are herring bone style gives a shadow effect, from the right side.

Murri is knotted style of chikankari; worked on the centre of flowers, giving an embossed effect nothing but French knot. This resembles the rice grain in shape.

Phanda is another type of chikan; it resembles millet and gives a raised effect it falls under the knotted style. This is used to fill the petals, leaves, and calyx etc.

Taipachi is a simple running or darning stitch used to fill the straight or curved lines in the floral motifs. The motifs employed are mostly flowers, creepers, fruits, like mango, almond, birds like peacock, and parrot.

Chikankari work is done on sari borders, tiny buttas in the body of the sari, blouses, kurtas, cuffs, jubbas, caps, table cloth, table mats, cushions, curtains and other household linens. It is commercialized and had gained the foreign market.

4.6 PIPLI:

Pipli is the technology of applying patches of colorful fabric pieces on the base. The raw edges of these patches are finished with a definite mode of stitching work. The main difference between appliqué craft and patch work is in the latter case small fabric pieces are joined together to form a relatively larger piece and in some cases the patch work is done to cover up or repair a damaged fabric. This art is pride of Orissa mainly carried out in and around Puri district and Pipli is the main centre in the district.

The appliqué art entirely differs from other techniques of decorative arts like printing & painting wherein the former many times procedures three dimensional effect too & is unique by it.

This Pipli craft of Puri is mainly connected with religious festivals & procession & hence, prepared canopies umbrellas, door curtains, hand bags, banners, coverings of dummy horses & cows & at present as per the demand certain household textiles like bedspreads, cushion & table covers, garden umbrella, sea-shore umbrellas, lamp shades, sari borders are also prepared. Many times this is combined with embroidery & is adopted on leather goods too. The colour scheme basically consisted of bold hues like black, red, yellow & green. Through in contemporary pieces bright shades of blue & turquoise blue were being used. These are prepared by Sebaks community to offer for Seba Puja of Jagannadh temple as Bhoga (eatables to the deity).

The general rule for selection of base material (cotton) is that, it should have enough strength to hold the light weight appliqué pieces. In olden days, before the inception of cloth mills, the coarse variety of hand spun, hand-woven khaddar was used as ground fabric, on which thick felt & velvet clothes were appliquéd. At present the khaddar has been replaced by mill made, strong and refined quality long cloths, Markin and Salu are used. Markin, relatively coarser, unbleached, plain woven cotton cloth and Salu though has the same back ground is comparatively finer and lighter. Both the materials are used as base and fills. Embroidery work is also seen, in which case fish and frog are the motifs. Sometimes specially designed motifs do have mirrors in them.

Selection of the design is the first step involved followed by cutting the motifs from the selected appliqué material. However, specially prepared motifs are made separately. These motifs are then placed on the base cloth in predetermined layout and sequence. The raw edges of the cut motifs are neatly and evenly turned in and sewn on to the base or sometimes embroidered without turning the raw edges. The base is a dark, bold and brightly coloured material on which motifs of other colours including white is also appliquéd.

The layout of the motifs varied according to the size and articles to be prepared since the shape varies for each article. Canopy is a square piece, umbrella is circular, trasa is somewhat circular, having small pointed part of the circumference as neck.

The size of appliqué piece varies from one meter to a very small size of 1.5 cms. The small pieces are for decoration and borders whereas the large pieces are used as central motifs for canopies and so on. The natural and stylized motifs in the design through medium size either reduced or enlarged according to the size of the piece.

The craft Orissa is mainly connected with religious festivals and processions, the motifs picked up are actual life, modified stylized forms, nature, animal and plant kingdom and of course geometrical as per the shape of the article. The commonly used motifs are lotus, peacock, duck, elephant, swan, parrot, fish, lion, betel leaf, creeper, tree, sun, and moon,

The main stitches adopted for pipli work are the simple running stitch, bakhia, used either to attach the specially made motifs permanently on the base or to keep the patches in position temporarily on the base, till they are finally sewn. Bakhia, the small running stitches, picked up several at a time at each insertion of needle. Taropa, a simple hemming, slip or invisible stitch, used to sew the appliqué pieces on the main ground of the cloth. Ganthi the blanket or buttonhole stitch used to embroidery the motifs, chickna- the chain stitch predominantly used to in appliqué work.

4.7 Sindhi embroidery:

4.7.1 Embroidery of Kutch:

Gujarat, the state situated in the western part of India, is famous for the embroidery of Kutch and Kathaiwar. The peasant, tribal and ladies of other community residing in the villages have maintained their tradition, culture and rich heritage through various styles of embroideries, i.e. , it can be said here that greatest contribution to the Indian embroidery is from Gujarat state, precisely from Kutch and Kathaiwar. However, the beauty lies in the rich designs, variety of motifs and stitches.

This embroidery was introduced by “Kathi” the cattle breeders, who were basically wanderers and brought about by Karna, the famous warrior of Mahabharat. These wanderers collected and gathered themselves in a place, and contributed variety, unique elements, patterns, themes, moods and techniques of needle work, which became later an integral part of the embroidery of Gujarat. These wanderers worshipped Shiva and Ganesh and used to embroider the idols in the small squares called “Sthapanas”.

The embroidery articles from Gujarat were world famous and exported to European countries during 16th and 17th century. However there exists difference in the embroidery of Kutch and Kathaiwar as a whole.

It is believed that the Kutch embroidery was taught to “Mochis”, the shoe makers around 300 years ago by a Muslim Phakeer of Sindh. However, Kutch embroidery has the foundation of various clans viz Ahris, Kanbis, Mochis, Rabaris.

4.7.2 Arhi bharat:

The primitive peasants of Saurashtra are known regionally as Arhis, experts in mochi (cobbler) bharat, usually prepared decorative articles and surface enrichment of their attires. It was totally a home craft, never attempted as a commercial trade. The ladies of ahir families embroidered their traditional costumes during their off seasons. Ahir is the hooked needle, with the help of which the embroidery was executed, appeared exactly like chain stitch. The embroidery is not only skillful in stitching but talented in developing designs, preparing pattern, drawing and tracing the same on the fabric.

The base material used was hand spun and hand woven coarse Khaddar on which a series of loops leading to chain stitch using Arhi along with abundant application of mirrors were observed. At present the embroidery is done on silk, or the locally manufactured satin fabric or a silky satin fabric.

The hand work was done with colourful cotton thread on dark coloured Khaddar in olden days but now use the silky untwisted floss (heer) or the twisted silken thread, on choli, pajamas, jackets, bonnets, caps and other children’s garments. The craftsman later introduced various colour schemes in the basic chain stitch to denote the stem, veins and other subtler parts of the motifs, a chief characteristic of the embroidery. Birds, flowers, creepers, foliage are some of the motifs, of them parrots, peacock, bulbul, human figure, dancing doll, karanphool, the flower shaped ear-ring, are the main.

4.7.3 Kanbi Bharat:

Kanbis are basically the cultivators, migrated from Saurashtra; the women communities engage themselves in the beautiful art of bharat and are known for their patient work. It was cent percent home scale art where the kanbi women got together in small groups and continue their work on household articles. The embroidery thread is cotton of yellow, orange, green, white and purple colours. The basic stitches employed are darning for out lining and herring bone for filling. The designs in Kanbi Bharat are distinct and have the influence of Persian art. They use the similar motifs as others but the specific ones are the sunflower, and kevada, the cactus flower. Kanbi folk are religious,

orthodox and believe in worshipping the domestic animals like bullocks, the second lung of the cultivators. As a token of love and affection, kanbi women prepare many beautiful articles for their domestic animals to decorate them during the festivals and while taking the procession. The articles more frequently prepared are the rectangular cover spread on the back of the bullock, conical covers, attractively tasseled to cover the horns, gorgeously embroidered veils to cover the forehead, face and muzzle. The other household articles like covers for wooden boxes, pataras, blankets and quilts, on which elaborate embroidery of parrots, peacocks, various shapes of foliages, climbers, creepers, tender twigs of mango are commonly observed.

4.7 4 Mochi Bharat:

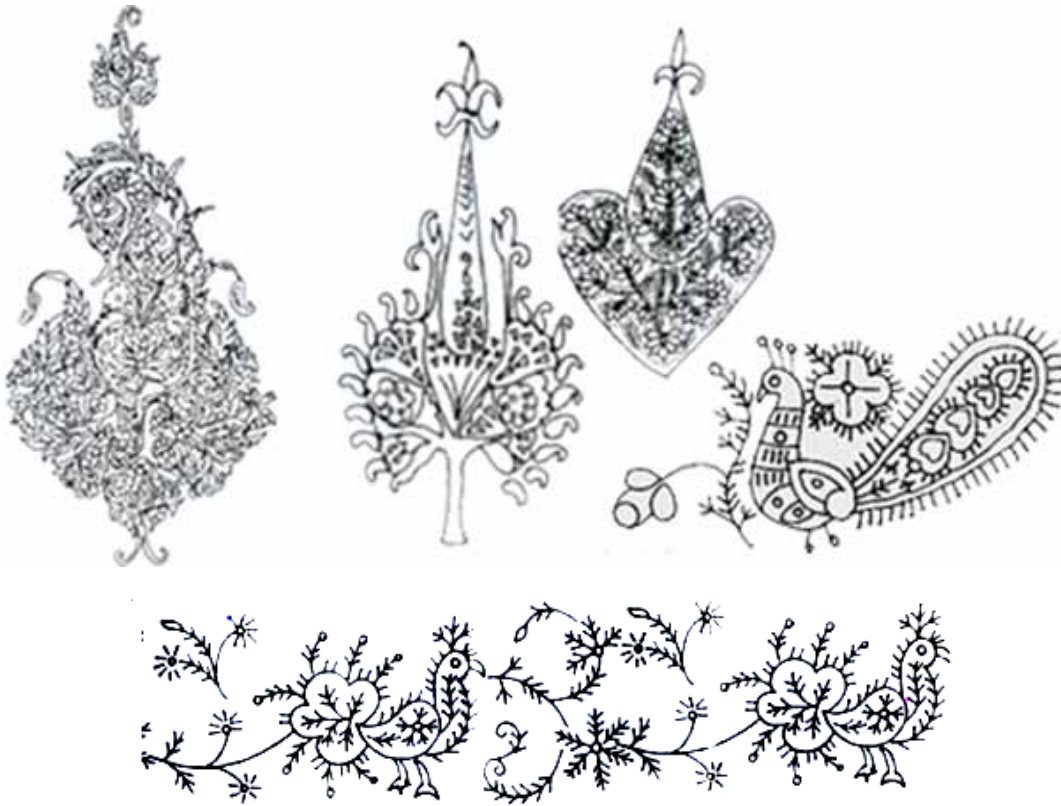
Mochi is the community belonged to the artisan, cobbler or shoe maker, who used a unique technique of preparing chappales and shoes, whose basic stitch has entered as a popular Kutchi Bharat. It is similar Arhi bharat, where the thread is pulled from the bottom to the top with the help of arhi, creating loops and the successive repetition leads to a continuous line of chain stitch. On larger surface areas like household textiles, many highly stylized flowers bushes, dancing doll, peacock, human figures are seen. Mochi bharat though appears simple, needs thorough, continuous practice to achieve efficiency. It is elaborate embroidery usually incorporated for filling work, thus time consuming. The ground fabric in satin and articles embroidered are choli, ghagra, toran (door decoration), chaklas (square wall hangings), and borders and so on.

4.7.5 Rabari Work:

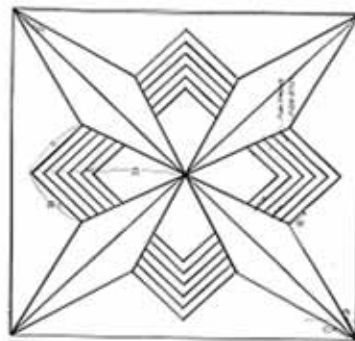
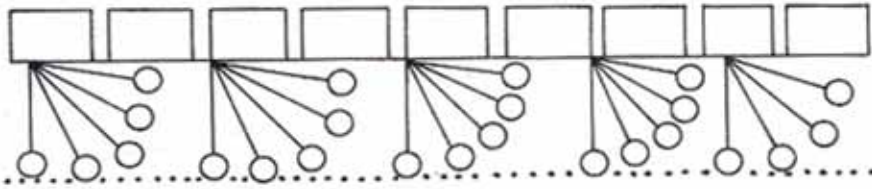
Rabari belong to a Giri region, usually migrating from place to place. Their embroidery is relatively effective, impressive and attractive, usually done on a hand-spun, hand woven khaddar or khadi material of maroon colour. Rabaris used small piece of cloth of various size, shape, to produce bold effect against a plain back ground .this craft has no definite design, it appears some what like appliqué work. Canopies, door curtains, wall decorations and other household articles were prepared. The motifs comprised of beautiful birds, flora, human figures and so on.

Exercise

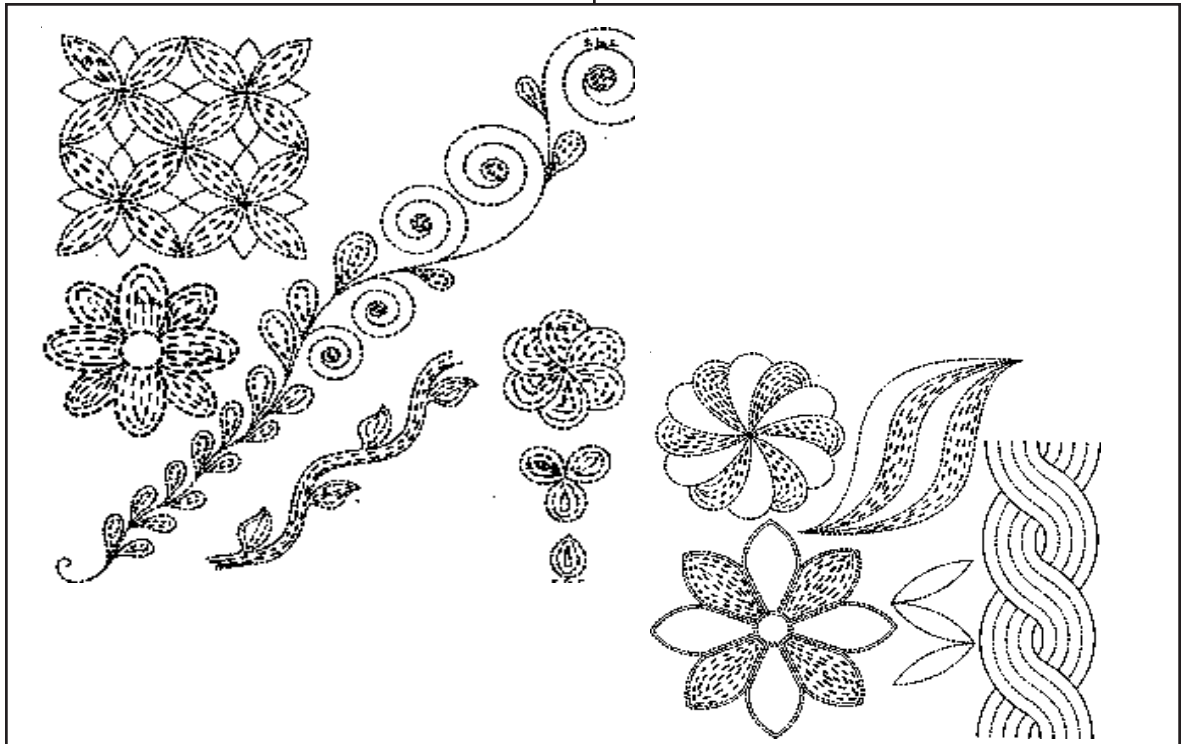
- 1 Enumerate the stitches used in kashida work?
- 2 List-out the types of shawls of Kashmir and Embroidery stiches used?
- 3 What do you understand by the term Phukari?
- 4 Elaborate the terms used in Phulkari work?
- 5 Write about the stitches and motifs used in Kantha work of Bengal?
- 6 Explain the themes used on chamba rumals?
- 7 Name the styles of stitches used in chikankari?
- 8 Explain the traditional Craft of Pipli?
- 9 Explain the fabrics, motifs & stitches used in Sindhi Embroidery?



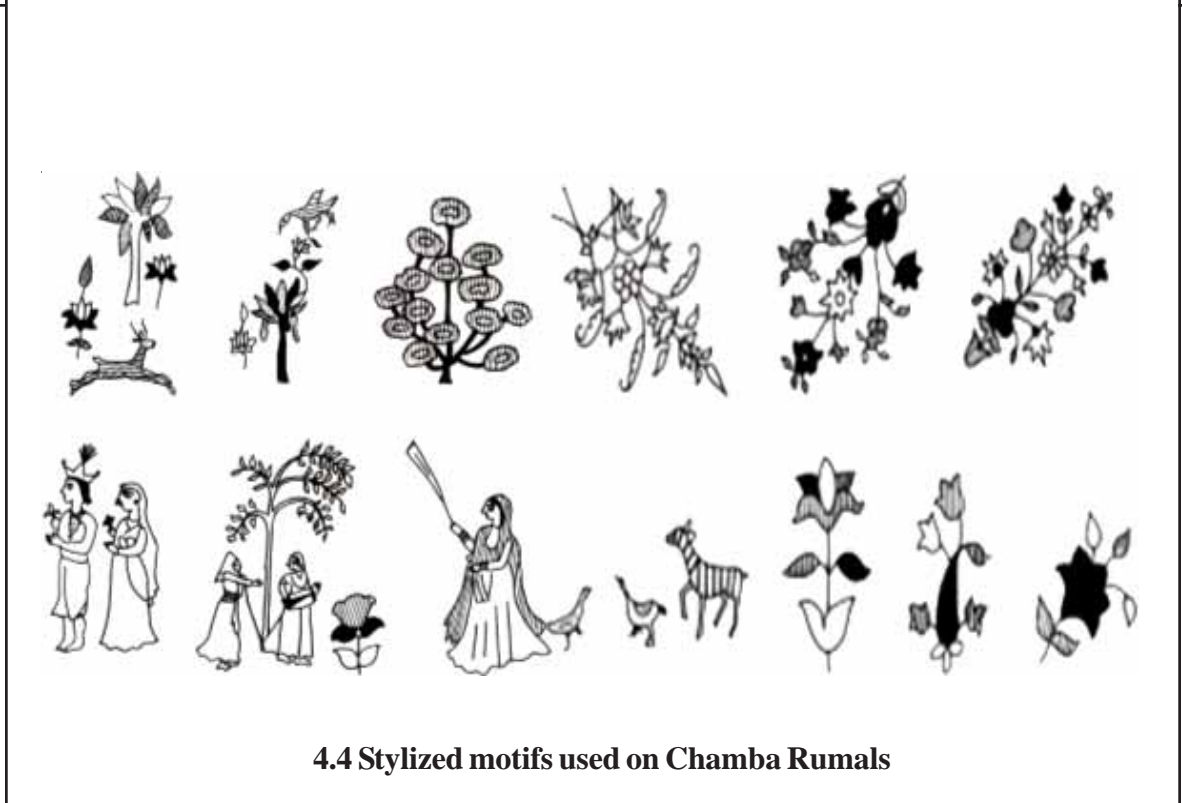
4.1 Kashmiri Kashida motifs



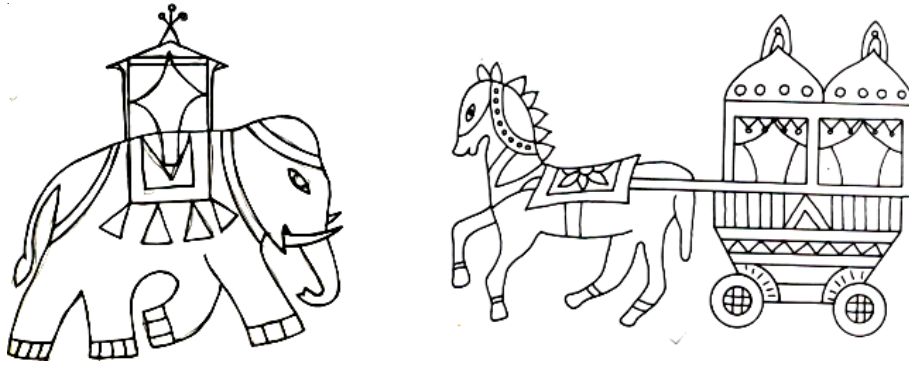
4.2 Punjabi Phulkari motifs



4.3 Kantha work motifs



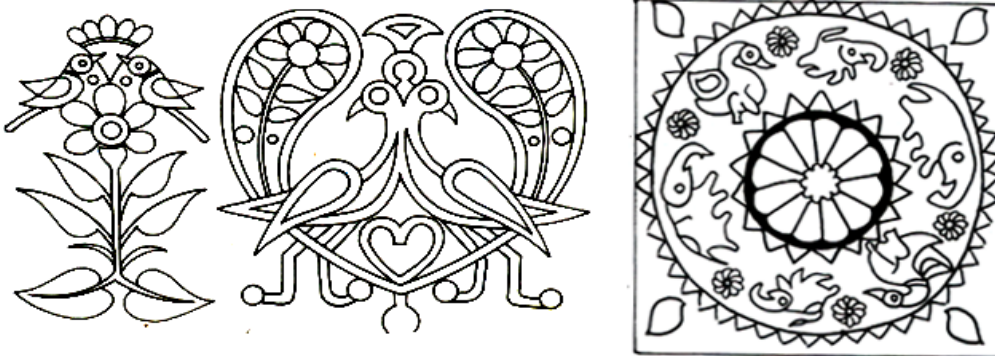
4.4 Stylized motifs used on Chamba Rumals



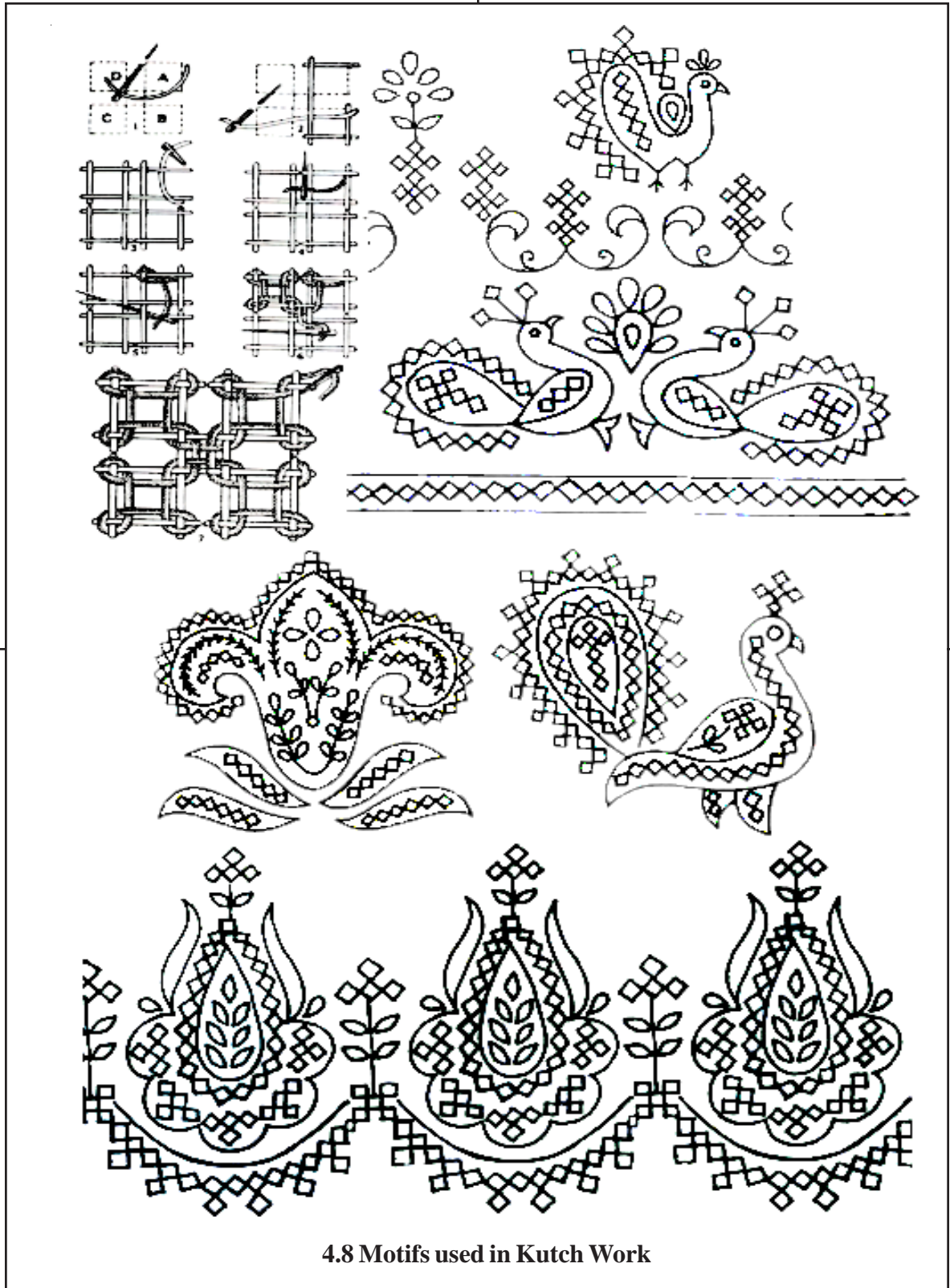
4.5 Elephant & Chariot motifs used on Chamba Rumals



4.6 Kairi motif used in Chikankari



4.7 Motifs used in Pipli work



4.8 Motifs used in Kutch Work

5.0 RESIST DYED FABRICS

5.1 Tie and Dye

5.1.1 Introduction

Tie dyeing is one of the techniques of decorating fabric. The technology is based on resist dyeing and the resisting material used is thread. The fabric is tied tightly with string so that when it is put into the dye bath, the colour cannot penetrate the parts tied. When opened out, this leaves a pattern on a coloured background. This technology is much suitable to the rural women as it can provide livelihood for them. It can ensure sustainable income to the rural families as there is great demand for these dyed and printed textiles.

5.1.2 Tools and Accessories Required: Basins, Bowls, Stove, Large wooden spoons, white thread (Sewing thread), Dyes, Fabric, etc.

5.1.3 Suitable Fabrics for Tie and Dye: Georgette, lawn, cambric, Poplin, Silk, Mulmul, Voile etc. Light weight fabrics are easiest as they take up the dye quickly, but heavier fabrics can also be used if they are left longer in the dye bath.

5.1.4 Preparation of Materials: Both new as well as used material can be given a new looking by means of applying fresh colours and design. In the case of new materials the starch or sizing present should be removed thoroughly. Further, soak the material in cold water for 6-8 hours. Then rinse in fresh water several times, dry the fabric and press it flat.

Thin materials namely georgette or mulmul may be tied after folding to minimize the work. First fold length wise into half and then width wise into half. Now the fabric is in four layers. The fabric should not have more than four layers. In case of thick fabrics the material should not be folded at all. The design must be tied at a time on all the layers of the fabric.

5.1.5 Techniques of tie and Dye:

- **Knotting:**

It is the simplest method of producing tie and dye designs. This produces some what circular hazy patterns without the use of any tying material. Pick up the fabric at a point and make a firm knot. When this technique is used on a square material make a big knot in the center and make knots at the corners.

- **Tiny Dots:**

This is the most widely used technique and is popularly known as bandhani work. Pick up little fabric and tie around three to four times to produce tiny dots. These dots may be lined or scattered or outlined into the shape of a design. The thread is generally carried from one tie to the other to speed up the work. Metal blocks with raised portions as per the design may be employed for design transfer.

- **Objects resist tying:**

To get even dotted patterns, tie objects of the same size and shape. Insert the objects into the fabric and tie around. To produce variety objects of different shapes and sizes can be introduced.

- **Pleating:**

Pleating and tying the fabric produces the stripes of various styles. For a straight stripe pattern, fold the fabric into tiny pleats either horizontally or vertically as per the direction of the stripes. Tie at intervals. If wider stripes are required, tie the thread covering wider space. For diagonal stripes, pleat the fabric diagonally and tie. Tying and dyeing in different colours produce multi colour stripes.

- **Bundling:**

Folding and bundling fabric produce wide variety of designs. Fold the fabric in various ways- horizontally, vertically or diagonally into a square or a rectangle or a triangle. Tie vertically, horizontally and also tie the corners for geometrical patterns.

- **Tritic:**

Tritic is a sewing technique suitable for producing more fine and sharp designs. Even though it is easier to produce geometrical designs, floral designs can also be achieved. Transfer the design onto the fabric and work running stitches with loose thread along the lines of the design. After all details of the design are stitched, pull each thread and draw the fabric tightly and then tie the thread firmly wrapping around and knotting. Stitches other than running stitch may be employed for producing various effects.

- **Spider Web:**

This generally forms the center pattern in a design and it resembles the spider web, hence the name. Pick up the center point of the fabric and gather the fabric around into tiny folds, depending on the radius of the web required, tie the thread

around the folds from top to the required depth. The direction of tying can be varied to produce various effects.

- **Marbling:**

Marbled effect is produced by holding the fabric in hand and crumpling into a ball and tying around securely. Care should be taken to expose the fabric from all sides, so that marbling is even. For getting multicolored effect, the thread can be opened after one dyeing and again tied in the same way exposing the uncovered areas.

5.2 Dye Preparations and Methods of Dyeing:

5.2.1 Naphthol dyes:

Naphthol dyes give brilliant colours to cotton and have a wide range of colours. Except green shades, other colours are possible using naphthol dyes. Generally naphthol dyes are used for producing yellows, oranges, reds and maroons.

Naphthol dyes has two components. Naphthol a coupling agent/or a developer and a diazotized salt or base. Naphthol and base are taken in equal quantities for most of the combinations. Table 1 gives the list of possible combinations of naphthol and base for getting a range of colours. The dyed cottons show good fastness to washing and perspiration and also resist staining. But it loses colour through crocking and sunlight fading. Care should be taken not to dry the naphthol dyed cotton in sun and avoid rubbing during use.

PROPORTION			
Material	: 100 gms	Caustic soda	: 3 gms
Naphthol	: 5 gms	Salt	: 5 gms
Base	: 5 gms	Sodium nitrite	: 2.5 gms
Monopal	: 5 gms	HCl	: 10 cc
		Water	: 2 liters

Naphthol is the developer and base is the dye stuff

Method of Preparation:

Take two vessels. In the first vessel mix Monopal soap with hot water and add the developer. Make a fine paste. To this add one cup of soft water and boil it for 10 minutes. Then add Caustic soda. Now this solution will become clear. Add cold soft water to make up to 2 lit and stir it well. Remove the fabric from steeping water. Press well to remove extra water. Open the fabric and immerse in naphthol solution, turn it up and down so that solution can be spread evenly. Leave the fabric in solution for 10 to 20 min.

S.No	Combination		Colour
	Naphthol	Base	
1.	AS/ASBS	Yellow GC	Yellow
2.	ASBS/AS	Red B Base	Red
3	ASBS/AS	Garnet GBC	Garnet
4	ASBS/AS	Blue B Base	Blue
5	ASBS/AS	Orange GC	Orange
6	ASG	Orange GC	Yellow (mustard)
7	ASG	Blue B Base	Brown
8	ASBS	Scarlet RC	Pink
9	ASBO	Bordeaux GP	Maroon
10.	ASBO	Blue B Base	Navy Blue

In the mean time, take the second vessel and prepare the base solution (dye). Make a smooth paste of dye with little hot water. Add this to two litres of soft water and stir it well. Add HCl. Add sodium nitrite to complete diazotization.

Now remove the fabric from naphthol solution and drench in the above solution for one hour. Turn the fabric up and down so that colour spreads evenly. To deepen the shade, wash the dyed fabric and enter into the naphthol solution and repeat the process.

After treatment:

Stoop the dyed material in hot detergent solution (2 gms soap or detergent/lit) to fix the dye and to remove the loose dye from the surface. It aids in better colour fastness properties.

5.2.2 Vat Dyes:

Vat dyes are fast dyes for cotton. These dyes offer a range of light and dark shades. The popular shades include greens, browns, purples, and limited yellow shades etc. Vat dyes are originally insoluble in water. They are made soluble by the addition of caustic soda and sodium hydrosulphite. The dye is impregnated on fabric in a reduced state and then reoxidised again on fabric. Hence, the colours are fast and do not generally loose colour through washing, crocking, perspiration and sunlight.

Two types of vat dyes are sold in the market. The hot colours are used for tie & Dye. The cold colours are used for Batik.

Combinations			
Material	100 gms	Sodium hydro-sulphite (hydrose)	6 gms for lighter shades
Vat dye	1 gms for lighter shades	Water at 80° C	8 gms for darker shades.
	2 gms for darker shades		Sufficient
Turkey red oil	3 gms	Material liquor ratio	1:20: (2 lit)
Caustic soda	0.5 gms for lighter shades	Working temperature	55°C – 60°C
	2 gms for darker shades.		

Method of Preparation:

Soak the desired fabric in cold water. Weigh the cloth to be dyed. Take the weighed dye and make it into smooth paste by adding Turkey red oil. Dilute the colour paste with measured quantity of water and add caustic to the diluted colour. Add measured amount of caustic and stir. Then add hydrose and observe the change of colour. Green colour changes to blue, yellow colour changes to violet etc. Then prepare the dye bath by adding water. The material liquor ratio should be 1:20 and then see the concentration of colour. If the colour changes back again to the original colour, sprinkle more hydrose till colour change is noticeable. This should be done in a closed vessel. Place this fabric in the dye bath for 20 minutes. Stir the liquid continuously. Then take out the material and wash it under running water. Oxidize the colour by frequent airing and washing or by using peroxide bleach. Soap the material, thoroughly as in naphthol dyeing to remove unfixed dye. Finally wash the material till the water becomes clear.

5.3 Dye Calculation: The dyestuff required to dye a material depends on the depth of shade required and weight of the fabric. If 2% shade is required to dye 100 gms of fabric multiply the weight of the fabric by the shade.

$$\begin{aligned} \text{Amount of dyestuff} &= \text{weight of the fabric} \times \% \text{ depth of shade.} \\ \text{Required} &= 100 \text{ gms} \times 2 = 2 \text{ gms.} \end{aligned}$$

Precautions:

- Make dye paste with little cold or hot water and never add more water. While making the dye paste.
- Accurate weighing is required.
- Store dyes and chemicals in air tight bottles to preserve the potency.
- Use gloves while dyeing, some dyes and chemicals are harmful to the skin.
- Care must be taken while using acids.

- The platform and floor of the dyeing place should be protected from the dye stains.
- The fabric should be opened fully and immersed in dye bath. It should always be in immersed condition with continuous stirring.
- The temperature should be maintained.
- Rinsing should be done thoroughly to remove excess dye.

To obtain three colours namely white, yellow and red

- a. After tying some dots for white, immerse the fabric in yellow colour. Then tie for yellow dots. Now immerse in red colour. This will result in yellow and white dots with red back ground.
- b. White, yellow and green: First tie the dots on white fabric. Then dye it in yellow. Tie a few more areas to preserve yellow dots. To obtain a final background in green colour, dye in green colour.
- c. To obtain two colours namely white dots and coloured background: Tie the dots according to the pattern or design and dye in any suitable dye.

Opening the thread of tied portion

If a continuous thread is used for tying of the dots, then the material should be pulled cross wise in order to open the tied portion. The fastened portion easily opens out when pulled. If the thread is cut after each dot or portion being tied, each knot should be removed or snipped separately. While snipping the thread, care must be taken to see that the material is not caught and cut.

5.4 Batik

5.4.1 Introduction

Batik is a resist dyeing method and the resisting material used is wax. Pattern on material is made by painting the design on the fabric with very hot liquid wax on both sides, before immersing in dye bath. The wax prevents the dye reaching the painted pattern and finished material is left with pale pattern on a colored background. The wax is sometimes deliberately cracked to form fine spider like line of colour where the dye penetrates through these cracks. The dye bath is always cold, otherwise the wax would melt.

5.4.2 Fabrics, Materials and Tools:

The fabrics used for batik should be smooth and thin in order to get a good effect. Silk is perhaps the easiest fabric of all to use, fine lawn comes second. Heavy coarse and thick fabrics are not much used. Any fabric for making batik should be thoroughly washed and ironed before use. Cottons should be desized before. Dyes will not be absorbed properly if the fabric is not clean.

Wax: Bees wax is the best wax for batik for fine lines and small areas. This is rather expensive but more manageable and forms less cracks than other kinds. Rosin can be added in proportion of 1:4 of bees wax. Rosin is used if fewer cracks are required. For design areas, bees wax and paraffin

Brushes: Brushes of various sizes will be needed to apply wax. Cheap brushes can be used for large areas and one or two good stable brushes should be kept for fine and delicate lines. Brushes should be rinsed well in petrol immediately after use, and then should be washed in warm water and soap and dried. The brushes made with long handle and pointed edge and ball of thread are handier to hold hot wax for a long time.

Tjanting and Tjap : Tjanting has a metal cup with a pointed spout and a wooden handle. Tjaps are metal blocks and the stamp face of the tjap is immersed in hot melted wax.

5.4.3 Tracing the design on the Fabric:

The fabric must be ironed well and must be stretched firmly over a frame. Then the design is traced lightly on the fabric with a pointed pencil.

5.4.4 Application of wax on the cloth

- 1. Design in single colour:** Batik, the design on the fabric is made by applying very hot liquid wax on both the sides, in the required areas of the design. The wax to be applied on cloth has to be hot so that the liquid penetrates through the cloth. The wax dries immediately as it is applied on the fabric. The wax prevents the dye penetrating into the design. After dyeing, the material is left with the patterns on a colored background. It is also possible to get a reverse effect by applying wax on the background and leaving the pattern untouched.
- 2. Multi-colour Design :** The multicolor design, parts of the design to be left white are waxed and dyed in the lightest colour. After it is dry, wax is applied on the portions of the design, which are to be retained in light colour. Then the fabric is dipped in the second dye bath which is brighter. Remove from dye bath and rinse well.
- 3. Crackled Design:** This can be obtained by applying wax throughout the cloth on both the sides or dipping in hot wax. Then it is soaked in water and after taking out from water, crackles can be made by pressing between hands. After this, it is dyed. If crackles of two colours are desired, apply wax again on the dyed cloth on both sides and repeat the process to get the crackles by pressing the cloth by hands in opposite directions.

5.4.5 Dyeing Procedure:

After applying wax, the fabric is immersed in cold water, before dyeing to ensure that the wax is quite hard and wet. This makes the fabric to absorb the dye easily. Dyeing procedure is as per the type of fabric chosen. Only cold dye methods are employed. When the dye bath is ready, the waxed material is taken out of cold water and squeezed well to crack the wax if necessary. It should be turned gently once or twice to ensure even dyeing and leaving in dye basin for 15 min to 30 min. rinse well and dry.

5.4.6 Removal of wax from the fabric

1. When the fabric is dry after dyeing, the wax must be removed. Thick wax can be cracked off by working the fabric with hands. Then wash in petrol.
2. Place the fabric in between two pieces of blotting papers or any paper and iron with a hot iron. The melted wax will be absorbed by the paper.
3. The wax from cotton material can be removed by soaking in hot soap water with little caustic soda and little kerosene. Several hot soaping are required to make fabric free of wax. Rinse it well immediately with soap and water.

5.5 Stages of dyeing

Textiles may be dyed during the fiber, yarn, or fabric stage depending on the colour effects desired and perhaps on the quality or end use of the fabric. Better dye penetration is achieved with fiber dyeing than with yarn dyeing and yarn dyeing than with piece dyeing.

5.5.1 Fiber-dyeing

In this process the fiber is dyed before yarn spinning

1. Solution (spun or dope) dyeing consists of adding coloured pigments or dyes to the spinning solution; thus each fiber is coloured as it is spun.
2. Stock or fiber dye: Dye is added to loose fibers before yarn spinning. Good dye penetration is obtained but the process is fairly expensive. Fibers do not spin as readily as undyed fibers it loses some of its flexibility. Woolens are often stock dyed.
3. Top dyeing gives results similarly to stock dye and is more commonly used. Tops, the loose ropes of wool from the combing machine, are wound into balls, placed on perforated spindles, and enclosed in a tank. The dye is pumped back and forth through the wool. Even dyeing is possible with this method.

5.5.2 Yarn dyeing

When dyeing is done after the fiber has been spun into yarn, it is described as yarn dyeing. Yarn dyeing is less costly than fiber dyeing but more costly than piece dyeing and printing. The primary reason for dyeing in the yarn form is to create

interesting checks, stripes, and plaids with different coloured yarns in the weaving process. Yarn dyed designs are more limited and large inventories are involved. Yarns are dyed in skeins or packages.

Yarns may be prepared in skein or hank form and then dyed. Skein dyeing is most costly method of yarn dyeing and the yarns retain a softer, loftier hand. Yarn is also done in packages and dyed as package dyeing. Most of the carded and combed cotton that is used for knitting outerwear is package-dyed.

5.5.3 Piece dyeing

Piece dyeing usually produces solid colour fabrics. It generally costs less to dye fabrics than to dye loose fiber or yarns. One other advantage is that decisions on colour can be delayed so that fashion trend can be followed more closely.

5.5.3.1 Cross dyeing : is a piece dyeing of fabrics made of fibers from different generic groups such as protein and cellulose or by combining acid dyeable and basic –dyeable fibers of the same generic group.

5.5.3.2 Union dyeing: is piece dyeing of fabrics made of fibers from different groups, but unlike cross dyeing the finished fabric is a solid colour. Dyes of the same hue, but of composition suited to the fibers to be dyed, are mixed together in the same dye bath. Piece dyeing is done with various kinds of equipment.

5.6 Methods of piece dyeing

The methods chosen for piece dyeing depends on fiber content, weight of the fabric, dyestuff and degree of penetration required in the finished product. Time is money in mass production so that processes in which the goods travel quickly through a machine are used whenever possible. Dyeing and after washing require a great deal of pure water, and the waste water is a cause of stream pollution. For this reason, dyers and finishers are always searching for new methods.

5.6.1 Jig dyeing

Jig dyeing consists of a stationary dye bath with two rolls, above the bath. The cloth is carried around the rolls, in open width and is rolled back and forth through the dye bath once every 20 minutes or so and is on rollers the remaining time. There are some problems of level dyeing. Acetate, rayon and nylon are usually jig dyed.

5.6.2 Pad dyeing

Pad dyeing is a method in which the fabric is run through the dye bath in open width and then between squeeze rollers that force the dye into the fabric. The pad box holds

only a very small amount of dye liquor, making this an economical method of piece dyeing. The cloth runs through the machine at a rapid rate, 30 to 300 yards a minute. Pad –steam processes are the most widely used.

5.6.3 Winch, Reel or Beck dyeing

It is the oldest type of piece dyeing. The fabric in loose rope sewed together at the ends, is lifted in and out of the dye bath by a reel. The fabric is kept immersed in the dye bath expect for few yards around the reel.

Penetration of dye is obtained by continued immersion in slack condition: rather than by pressure, on the wet goods under tension. This method is used on lightweight fabrics that can not withstand the tension of the other methods, and on heavy goods, especially woolens. Reels are of various shapes-oval, round and octagonal.

Summary:

Tie dyeing is one of the techniques of decorating fabric. The technology is based on resist dyeing and the resisting material used is thread. Knotting, Tiny Dots, Objects resist tying; Pleating, Bundling, Tritic, Spider Web and Marbling are some of the techniques discussed in this chapter. Methods of naphthol and vat dyeing were explained with the expertise of shade card preparation. Batik is a resist dyeing method and the resisting material used is wax. The Fabrics, Materials and Tools required in this art were explained.

Exercise:

1. Write the simple techniques of tie & dye suitable for dress material?
2. Explain the different colour combination of naphthol dyes?
3. Write the dye and chemical proportions of Vat for getting light and medium shades?
4. How can you obtain Multi-colour and crackled design in batik?
5. Explain the methods of piece dyeing?
6. Write about the stages of dyeing textiles:

Tie&dye fabric samples



Fig. 5.1 Knotting



Fig. 5.2 Diagonal stripes



Fig. 5.3. Spider web



Fig. 5.4 Sun pattern



Fig. 5.5 Tritic

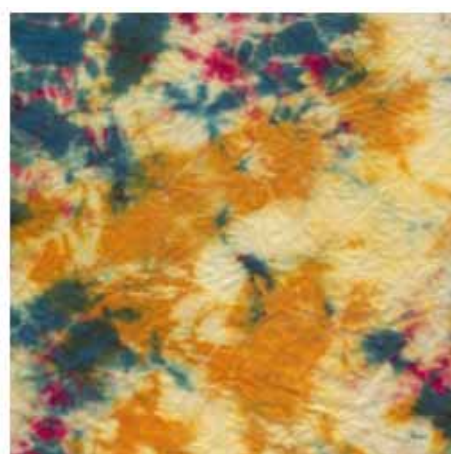


Fig. 5.6 Marbling

Batick fabric samples



Fig. 5.7 Multicolour batik

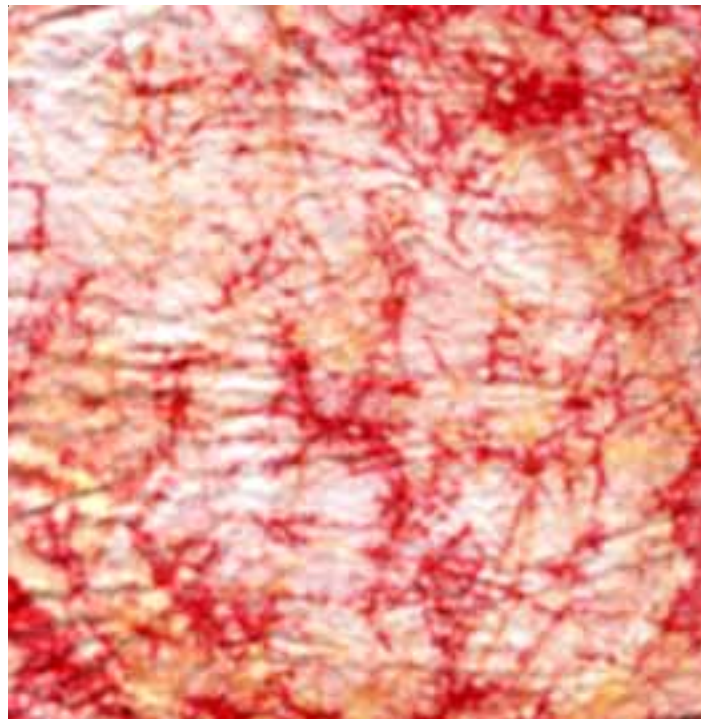
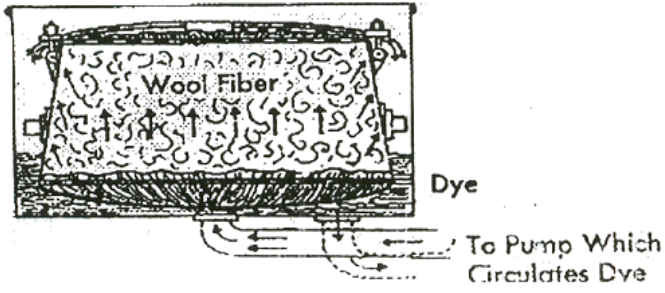
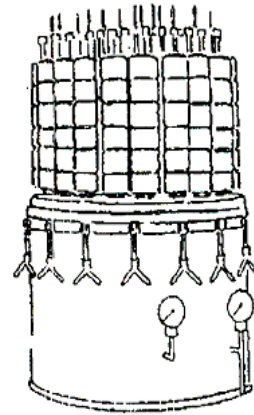


Fig. 5.8 Crackling

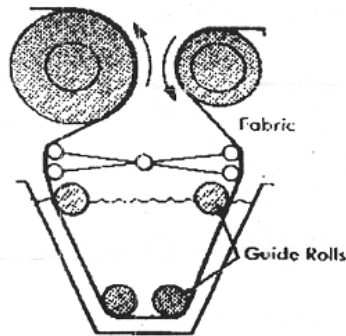
5.9 Methods of dyeing



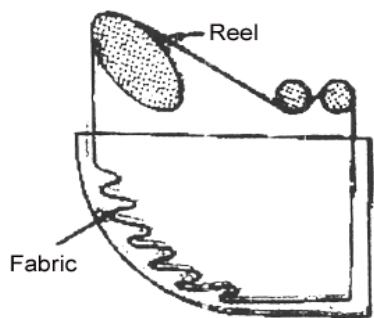
Stock dyeing



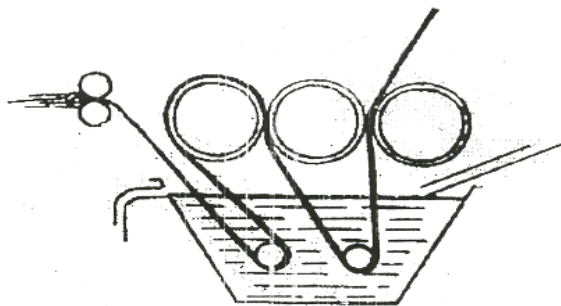
Yarn Dyeing



Jigger



Winch dyeing



Pad dyeing

6.0 METHODS OF PRINTING

Colour designs are produced on fabrics by printing with dyes in paste form or by positioning dyes on the fabric from specially designed machines. One form of applying colour decoration to a fabric after it has otherwise been finished is called printing.

Printed fabrics usually have clear –cut edges in the design portion on the right side and the colour seldom penetrates completely to the wrong side of the fabric. Yarns reaveled from printed fabrics will have colour unevenly positioned on them.

6.1 Block printing

Block printing is a hand process and the oldest technique for decorating textiles. It is seldom done commercially because it is costly and slow. A design is carved on a block. The block is dipped in a shallow pan of dye and stamped on the fabric. To obtain variation of colour in the same design, as many additional blocks must be carved as there will be additional colours. The more colours used the more valuable and expensive the block print will be. Slight irregularities in colour register or positioning are clues to block prints but these can be duplicated in roller printing made to resemble them.

Simple designs are suitable for block printing. Too many details in the design must be avoided. The number of colours should be kept to the minimum. Though these blocks can be made from potato, linoleum etc. , wood is the most commonly used medium. The design is varied by scooping the wood so that it is either outstanding or is in relief. The number of blocks required for a design corresponds to number of colours in the design.

6.1.1 Materials for Printing:

The materials required for printing are:

- a) A table of convenient size which is covered with several layers of jute hessi cloth & a layer of grey cloth.
- b) A few trolleys to carry dyes around the table.
- c) A few trays made of enamel wood.
- d) Thin sponge sheet
- e) Hessian cloth, muslin and mosquito net cloth.
- f) Wooden piece with a flat edge.
- g) Mortar and pestle for making dye paste.
- h) Containers for dye paste.
- i) Facilities for drying, steaming and washing.

6.1.2 Rapid Colours:

Dye proportion:

Dye	12.5gms
Sodium Hydroxide	6.5gms
Warm Water	18c.c. or (1 part)
Urea	9gms
Neutral gum paste	125c.c.
Water to make up to	500c.c.
Turkey red oil	few drops

6.1.3 Method:

Prepare smooth paste of the dye with little warm water and Turkey red oil in a mortar. Add half of the gum to which little sodium hydroxide has already been added to neutralize it. Make a homogenous paste by mixing with the pestle. Then add the remaining NaOH solution and stir well. Add the remaining gum and urea and stir. Add water to make upto 500c.c. and to obtain a dye of desirable consistency. The fabric after printing should be dried in sunlight for one day. Some after treatment has to be given to fix the dye.

6.1.4 After Treatments:

- 1. Sulphuric Acid:** The water to material ratio should be 20:1. in one litre of water 3-4 ml of sulphuric acid should be added. The material should be immersed in this solution for half an hour at room temperature and then washed with soap and water.
- 2. Steaming:** The printed material should be wrapped in news paper and steamed in a closed vessel for 10-20 minutes.

6.2 Screen Printing:

Originally this technique was referred to as silk-screen printing because the screens were made of fine, strong silk threads. Today they are also made of nylon, polyester, and metal. *Flat screen printing* was done by hand. It is done commercially for small yardages, 50-5,000 yards, and is used extensively for designs larger than the circumference of the rolls used for roller printing.

The design is applied to the screen so that all but the figure is covered by a resist material. One screen is used for each colour. The colour is forced through the screen by a squeegee. In the hand process, the fabric to be printed is placed on a long table. Two people

position the screen on the fabric, apply the colour, move the screen to a new position, and repeat the process until all the fabric is printed.

In the automatic screen process, the fabric to be printed is placed on a conveyer belt. A series of flat screens are positioned above and are lowered automatically. Colour is applied automatically, and the fabric is moved automatically and fed continuously into ovens to be dried.

Rotary screen printing is done with cylindrical metal screens that operate in much the same way as the flat screens except that the operation is continuous rather than started and stopped as the screens are raised and lowered in the flat. The rotary screens are cheaper than the copper rollers used in roller printing.

The chief advantages of screen printing are that the colours can be produced in brighter, cleaner shades than are possible with roller printing and the designs to be repeated can be much larger.

It is possible to have designs consisting of squares, circles, and ovals. On a knitted fabric, such as jersey, flat & rotary screen printing the transfer printing are the only printing methods that can be used. Other methods smear dyes as a knitted fabric stretches when it receives the impact of the rollers.

6.3 Stencil printing:

This originated in Japan. Its high cost limits its use and importance in the U.S. in stencil printing, the design must first be cut in cardboard, wood, or metal. The stencil may have a fine, delicate design or there may be large spaces through which a great amount of colour can be applied. A stencil design is usually limited to the application only one colour and is generally used for narrow widths of fabric.

Stencil printing is one of the methods of resist printing and the resisting material used is wax paper or stencil sheet. This can be used for printing design both on paper and cloth. The number of colours to be used on the design is same as the number of stencil sheets cut.

6.3.1 Design suitable for stencil printing:

Design for stenciling should consist of clear definite shapes. Fine lines and small details are to be avoided as they are difficult both to cut and to stencil.

6.3.2 Tools & Materials:

1. Thick drawing papers for marking the stencils.
2. A stencil knife or a sharp blade.
3. Glass sheet as cutting surface.
4. Stencil brushes of various sizes, sponges, gun spray.
5. Paraffin wax.
6. Water colours for paper.

7. Fabric paints.
8. Medium for paints.
9. Bundle of papers to provide backing.

6.3.3 Procedure:

Choose a suitable design for a mono and multicolor scheme. A convenient design is one which the individual parts of the design are separate from each other.

6.3.4 Preparation of Stencil Sheets:

Measure the size of the design and decide the colour scheme. Cut stencil cards separately for each colour. Prepare cards by cutting drawing paper 2" to 3" bigger than the size of the design. Transfer the design on to the cards leaving 1" to 1.5" border on all sides and taking care to transfer the design exactly in the same place in all cards. Mark the parts of the design to be cut for one colour in one card. Melt wax, dip the cards in wax and allow for dry. Laying the stencil on glass plate, cut smoothly along the parts of the design using a sharp stencil blade for achieving success. Cut the remaining cards separately for each colour. Hold all cards together against the light to check the accuracy of the design.

6.3.5 Printing:

Fabric paints are used for printing on fabrics and water colours can be used for printing on paper.

For applying colour, stencil brushes, sponges, tooth brushes and gun sprays can be used.

Stencil Brushes:

Select brushes with soft bristles and blunt ends which preserve the stencil better. Use separate brush for each colour.

Tooth Brushes:

They give sprayed effect. The brush is held over the area to be coloured and then rubbed with the thumb.

Sponges:

These can be used with water colours and thinned acrylics to create soft, mottled effects. Cut a flat sponge into strips about one inch wide and dip one end into the colour.

6.4 Air Brush or Gun Spray:

This special purpose tool is used for getting spray effect to colour large areas in limited time. Direct, acid or vat dyes dissolved in water, alcohol or other organic solvent may be used. Place a bundle of papers on the table to offer a soft backing while printing and place material to be printed over this and pin securely. Prepare the colour in a thick consistency on a palette. Try out the colour with the brush to see whether the colour is being transferred on the

material evenly by working the brush first on the glass sheet, then on the paper. When colour is applied evenly, then the work can be started on the material. While dabbing the colour, the brush should be kept up right to get a sharp neat outline. For a multi colour design, the second colour is applied after the first one is partially dry.

Precautions:

1. Never exert pressure on the brush while printing.
2. Never wet brushes.
3. Always dab up and down.

6.5 Roller printing

Direct roller printing was developed in 1785, about the time all textiles operations were becoming mechanized. It turns out colour designed fabrics in vast quantities at the rate of 1000 to 4000 yards an hour. This method of producing attractive designs is relatively inexpensive when compared with any hand method. It is a machine counter part of block printing.

Essential parts of the printing machine A cast-iron cylinder is the roller around which the cloth is drawn as it is printed. The copper printing roller is etched with the design. Originally, the design was engraved by hand an awl; today, the engraving is frequently done pantograph transfer & by photoengraving.

There are as many different rollers as there are colors in the fabric. In the diagram, three engraved rollers are used. Furnisher rollers are covered with hard rubber or brushes made of nylon, or hard-rubber bristles. They revolve in a small colour trough, pick up the colour, and deposit it on the copper rollers. A doctor blade scrapes off excess color so that only the engraved portions of the copper roller are filled with dye when it comes in contact with the cloth. The cloth to be printed, a rubberized blanket, and a back gray cloth pass between the cylinder & the engraved rollers. The blanket gives a good surface for sharp printing; the gray goods protect the blanket and absorb excess dye. Rayon and knitted fabrics are usually lightly coated with a gum sizing on the back to keep them from stretching or swelling as they go through the printing machine. After printing, the cloth is dried, steamed, or treated to set the dye.

6.6 Discharge printing:

Discharge prints are piece dyed fabrics in which the design is made by removing the colour. Discharge prints are usually done on dark backgrounds. A discharge paste, which contains chemicals to remove the colour, is then printed on the fabric. Dyes that are not harmed by the discharging materials can be mixed with printing solution if colour is desired in the discharge areas. The fabric is then steamed to develop design, either as a white or coloured area.

Discharge prints can be detected by looking at the wrong side of the fabric. In the design area the colour is often not completely removed and one can see evidences of the background colours, especially around the edges of the design. Background colours must be colours that can be removed by strong alkali. Discharge prints are usually satisfactory.

Summary

Applying colour decoration to a fabric after it has otherwise been finished is called printing. Printed fabrics usually have clear –cut edges in the design portion on the right side and the colour seldom penetrates completely to the wrong side of the fabric. Detailed process of block-printing was explained with rapid fast colours. Fixing of the print was suggested with suitable after-treatments. Cottage and industrial level screen printing was enumerated. With suitable illustrations, Stencil printing was enlightened. Different industrial methods of printing were explained.

Exercise:

1. How will you distinguish hand-block printing and roller printing?
2. Explain Silk-screen printing of textiles?
3. How will you prepare stencils for multi-colour stencil printing?
4. Write about the printing recipe with rapid colours?
5. How will you identify discharge printed fabrics?

Block printing



Fig. 6.1 Single block



Fig. 6.2 Filling block



Fig. 6.3 Block- printed Motif



Fig. 6.4 Border design

Fig. 6.5 Stencil Printing technique



Design Traced on butter paper



Stencil 1



Stencil 2



Stencil 3



Stencil 4



Finished design

