

DYEING & PRINTING

THEORY

50 marks

SCOPE AND LIMITATIONS

Unit	Topic	Sub –topic	Thrust area	Marks
1.	Block Printing	Introduction History and Origin What is Block printing Tools and Equipment's Procedure for Block Printing Types of Blocks <ul style="list-style-type: none"> • Vegetable Block • Fruit Block • Found Block • Mounted Block • Wooden Block <ul style="list-style-type: none"> Saanganeri wooden blocks Bagru wooden blocks Different states wooden blocks Gujarat and Rajasthan Kashmir Tips and Advice	Table preparation, fabric preparation, printing, finishing Potato, carrot, onion, French bean, lady finger, capsicum, etc. Apple, Pears, Pineapple, etc. Nature and Man made Glue, collage, nail head, etc. Mirchi design, Badha buta design Leheria, jaal, kangura Blocks used for Bandhani design Block design for yoke of a women's dress.	10
2.	Tie & Dye	Introduction. History of Tie & Dye.	.	10

	<p>Fabrics used for Tie & Dye.</p> <p>Tools & materials used in Tie & Dye.</p> <p>Resists used.</p> <p>Different folding techniques in Tie & dye.</p> <p>4 types of Rajasthani Tie & Dye dupattas.</p> <p>Dyes used.</p> <p>Procedure for Tie & dye.</p>	<p>different threads, cords, rubber bands, etc.</p> <p>Marbling, Knotting, Binding, Tritik, Circles (random circles), Folding (stripes), Rolling, Twisting & Coiling, Spirals, Lightning bolt.</p> <p>Bandhej or Bandhani. Leheria. Shibori. Mothra.</p> <p>Hot water dye, Cold water dye.</p>	
3. Batik	<p>Introduction</p> <p>History and origin</p> <p>Dyes and resists used.</p> <p>Fabrics used.</p> <p>Equipment's</p> <p>Batik process</p> <p>Application of wax</p> <p>Dewaxing.</p> <p>New innovative methods of batik.</p>	<p>Beewax, paraffin, resin, starch paste</p> <p>Cotton, silk, linen.</p> <p>Vessels, brushes, cold water dyes, brush, sponge</p> <p>boiling, ironing</p> <p>glue block batik, batik with hand painting , Batik effect to be obtained by painting with water colour.</p>	10
Stencil printing	<p>Introduction.</p> <p>History.</p> <p>Equipment's & material required.</p>	<p>The stencil, Devices for cutting stencils, Colours for</p>	10

		printing with stencils, tools for applying paint, other materials. Working out a design	
	Different types of Stencils	Positive, Negative, Simple symmetrical, Complex symmetrical. Repeat stencil	
	Stencil making & printing process.	Selection of a design. Transfer of the design. Cutting out the design on the stencil. Printing with the stencil. Cleaning the stencil.	
	Different techniques of printing with a stencil.	Printing by dabbing, printing with brush, Spray printing with stencil Roller.	
	New ideas for printing	Multi coloured design with stencil, printing with superimposed stencils, shading effect in stenciling, some very easy stenciling.	
Screen printing	Introduction What is Printing? Equipment's and material required Preliminary steps How to prepare the Screen Principles of Photographic Stencils.	Printing from Stencils Tieless Stencil Printing. Introduction Art work, Type setting, Machine Typesetting, Computerized Typesetting. Selection of Bolting cloth, Selection of frame size, Mounting the Screen fabric. Important points to note, Proportionate mixture, Even coating,	10

	Dark room, Perfect drying, Correct exposure duration, Perfect Developing, tight- contact.
Exposing Instruments/Equipment	Conventional exposing table, Modern exposing Instrument.
Steps Before Printing	Block out, Touch-up, Tapping
How To Print Cleaning Of Screen Screen Printing Machinery	Clamping, Registration. Digital Printing / Offset printing. *(can take students for visit at offset printing press.)
Commercial Value	

DYEING AND PRINTING

PRACTICALS

100 marks

UNIT 1

Block printing-----15mks

Fabric sample size 8"x8"

- Prepare a sample of one direction block print design, using potato or carrot blocks.
- Prepare a sample of a block print design using fruit blocks
- Prepare a sample of all over block print design, using any 5 vegetables and fruit as blocks.
- Prepare a sample of a block print design using nature (leaves, twigs, flowers, shells, etc.) as blocks.
- Prepare a sample of a block print design using found blocks.
- Prepare a sample of a block print design using a mounted block (macaroni/dal/ matchsticks) block.
- Prepare a sample of a block print design using a nail head block.
- Prepare a sample of a block print design using a lace block.
- Prepare a sample of a block print design using a thread block.
- Prepare a sample of a block print design using a glue block.
- Prepare a sample of a block print design using a block of crushed paper.
- Prepare a sample of a block print design using coir blocks
- Prepare a sample of a block print design using a wooden block (1colour).
- Prepare a sample of a block print design using a wooden block (2 colours).
- Prepare a paper sample of a visiting card/logo/envelope etc. of vegetable or fruit blocks.
- Prepare a paper bag using fruits and vegetables as your blocks.

Project -----5mks

*Block printing----1 item (e.g. Skirt, Blouse, dress, Scarf, salwar kameez, Orhni etc.) Report should be written in the journal.

Tie & dye-----5mks.

Fabric sample size 8"x 8"

- Prepare a sample of a Sunburst with knots.
- Prepare a sample of a circle.
- Prepare a sample of a leharia effect.

- Prepare a sample with bundis.
- Prepare a sample of a Square.
- Prepare a sample with tie in objects.
- Prepare a sample of a fan shape effect.
- Prepare a sample of a Marbling.
- Prepare a sample of bindis & combine this sample with decorative embellishments.
- Prepare a sample with wavy effect.

UNIT 2

Tie & dye -----10 mks

- Prepare a sample of Diamond effect.
- Prepare a sample of cross effect.
- Prepare a sample of a Doughnut effect.
- Prepare a sample with pegs as resist.
- Prepare a sample with knots as resist.
- Prepare a sample with Fold & dip technique.
- Prepare a sample with Tritik effect done in running stitch.
- Prepare a sample with Tritik effect done by machining.
- Prepare a sample with Rolling & gathering.
- Prepare a sample by dyeing in two colours using rubber bands & plastic bag.
- Design a sample with the neckline, using any technique.
- Using any technique, design the Border on a rectangular sample.
- Prepare a sample of tie & dye, combined with decorative embellishments.

Innovative ways of Tie & dye.

- Prepare a sample of a Swirling technique.
- Prepare a sample of Lightning bolt effect.

Note: step by step method of obtaining each effect should be shown in the journal in the diagrammatic form.

Project-----5mks.

*Tie & dye—1 item (e.g. Skirt, Blouse, dress, Scarf, salwar, kameez, Orhni etc.)

Report to be written in the journal.

Batik ----- 10 mks

Fabric sample size 8" x 8"

- Prepare a sample with more cracks.
- Prepare a sample with less cracks.
- Prepare a sample with organised cracks.

- Prepare a sample with centre design and side cracks.
- Prepare a sample with centre design in cracks
- Prepare a sample with a border design, done in two colours.
- Prepare a sample of instant batik.
- Prepare a sample of candle drip.
- Prepare a sample by etching the wax.
- Prepare a sample by splashing.

UNIT 3

Starch Paste Batik ---- 5mks

Fabric sample size 8'' x 8''

- Prepare a sample of starch paste batik in one colour.
- Prepare a sample of starch paste batik in two colours.

Project----- 5 mks

*Batik--- 1 item (e.g. dress, skirt, trouser, orhni, salwar, kameez, blouse)

Report to be written in the journal.

Stencil printing-----15mks

Fabric sample size 8''x8''

- Prepare a sample by using positive stencil & spray paint with a tooth brush.
- Prepare a sample by using Negative stencil & spray paint with mouth blown diffuser.
- Prepare a sample by using simple symmetrical stencils & paint with the paint brush.
- Prepare a complex symmetrical stencils & sample of its print.
- Prepare a silhouette stencil & sample of its print.
- Prepare a stencil with ties & sample of its print.
- Prepare a stencil for border & paint it with the sponge.
- Prepare stencils for two colours to be printed around a neckline & painting with a roller.

UNIT 4

Project-----5mks.

*Stencil printing—1 item (e.g. Baby layette set, blouse, handkerchiefs, pillow cases etc.)

Report to be written in the journal.

Screen Printing----15mks.

Fabric sample size 8''x8''.

- Prepare a sample of a screen print in one colour.

- Prepare a sample of a screen print in two colour.
- Prepare a sample of a screen print used as a border.

Journal ----- 5mks.

To be given for the presentation, neatness, & cover of the journal.

Units 1 & 2 have to be completed in the 1st term.

Units 3 & 4 have to be completed in the 2nd term before 26th January.

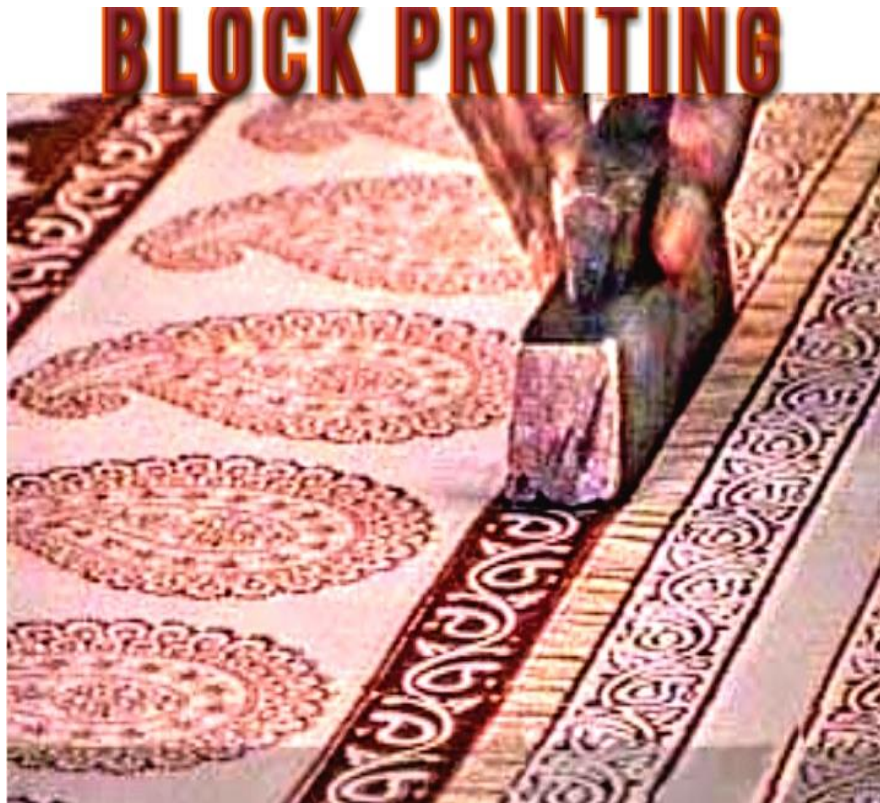
* Marks to be given as per the checklist & Performa (continuous evaluation)

* All the projects /Assignments have to be done individually by each student during school hours.

* A record of the practical marks obtained by each student should be maintained.

* This record should be presented to the auditor/examiner at the time of the Audit/ inspection.

* Maintain a journal /file for the practical which should be used in the Std XI & XII.



HISTORY AND ORIGIN OF BLOCK PRINTING

Block printing is one of the oldest printing processes. It is employed for high quality goods like wall coverings, and printing cloth. The earliest form of fabric printing was done using wooden blocks, carved with designs left standing in relief such printed textiles are thought to have existed in Egypt as early as 2500 B C. The early block printers used the resist methods employing various types of starch paste with which to print first and then colouring the fabric with natural dyes. Subsequently the cloth was washed leaving the design in the original color of the material, while the surrounding background too be dyed in colour. Later the direct printing method was introduced.

WHAT IS BLOCK PRINTING

Block printing is a form of dying and colouring a fabric using blocks. Block printing craftsmen use wooden or metal blocks to create beautiful designs. Block printing also known as relief printing is the earliest, simplest and slowest of all methods of textiles printing. It is a direct style of printing. Block printing by hand is a slow process.

Tools and Equipment's:-

Printing table, printing blocks (improvised blocks, vegetable blocks, fruit blocks) fabric printing ink, fabric dye paste or fevicryl paint, inking slab, printing roller, sponge or brush, fabric, pins

Procedure or The process of printing can be divided into following major parts:-

- Washing
- Marking
- Printing
- Drying
- Washing and fixing the colour

Washing:

The fabric brought from the market contains starch, dust etc. Therefore it goes through a preprinting treatment in order to get good results while printing. The fabric is therefore dipped in a solution of water and bleach for 1-2 days. It is then boiled and washed with water. Finally the cloth is stretched and spread on ground and left for drying. This process known as *Hari Sarana* takes 3-5 days depending on the weather conditions.

Marking:

The cloth to be printed is spread on the printing table and fixed with the help of pins. With help of scale and chalk, areas to be printed are marked and proper gaps are left for cutting and stitching.

Printing:

Printer dips the block in the color and stamps the design on the cloth. The blocks are then pressed hard with the fist on the back of the handle so that registration/imprint of the color is even. Printing starts from left to right. Number of colors used in the design defines the number of blocks to be used. Generally one printer handles one color and application is done simultaneously. In the case of sarees the pallu is printed first and then the border. First the outline color is applied and then the filling colors. Specific point in the block guides the printer for the repeat impression. The process of printing is called as *Chapaai*.

Drying:

After the printing is completed the fabric is dried out in sun for the colors to get fixed. This is done specially for the pigment dyes. The printed fabrics are handled with utmost care so that the colors are not transferred to other areas. Therefore they are wrapped in plastic or newspaper after drying. The process is called as *Sukhaai*.

Washing and fixing the colour:

Fabric then goes through the process of steaming in the special boilers constructed for this purpose. After steaming, the material is washed thoroughly in large quantities of water and dried in the sun. Once the fabric is washed and

dried, ironing is done, which further fixes the color permanently. This final process of washing is called *Dhulaai*.

Post Printing Care of Blocks:

After you finish the printing process, it is very important to clean and dry your precious wooden blocks before storing them in the boxes.

Just remember to follow these steps every time you are cleaning the blocks after printing:

1. Take a bucket filled with water and dip all dirty blocks in it. Leave them in the bucket for 5 minutes and then start scrubbing the blocks gently with a soft brush that doesn't harm the pattern (preferably a used soft toothbrush).
2. After you scrub the block, immediately dip it in another vessel filled with clean water. Repeat the same process for all dirty blocks.

Wooden blocks should be cleaned thoroughly after printing is completed

3. Wipe them with a dry cotton cloth.
4. Put the blocks under shade for drying. Once you are sure that blocks are perfectly dried, store them back in a clean wooden or plastic box.

Block printing though considered by some to be the most artistic is the earliest, simplest and slowest of all methods of printing. In block printing the blocks don't always have to be carved and the ability to draw is not necessary. The pattern and motifs are contained in the printing block itself and have to be arranged and printed to create the design. The idea is the same as the rubber stamp on which the numbers or the letters stand in relief away from the background. When the rubber stamp is pressed on the ink pad only the raised numbers or the letters make contact with the inky surface, this stamp when pressed on the paper leaves the print by transferring the ink from the numbers or the letters on to the paper. This type of printing is called relief printing. There are different materials that can be used as blocks. These are

- 1) Improvised blocks also known as Found Blocks
 - a) Printing from Nature
 - b) Printing with household objects
- 2) Mounted blocks are also called as Adding blocks
 - a) Adhesive or Glue Block
 - b) Collage Block
 - c) Nail Head Block
- 3) Vegetable Blocks
- 4) Wooden Blocks

Improvised printing blocks

In block printing, the block does not always have to be a specially carved out design on wood to any other sophisticated equipment. All sorts of things that you will find in the house, garden or anything interesting lying around which

make a suitable block can be used for block printing. These blocks are also known as Found Blocks.

Printing from Nature

Almost anything to be found in woods & fields suitable for printing like ferns, twigs, bark, nuts, seeds, small stones, grass, etc. Things which have flat surfaces like leaves, ferns & grass will give better prints.



Printing from household objects

Printing can also be done with household objects like striking side of match box and match sticks, tooth brush (bristle side), top of a cock screw, bolt, taps, bobbins, keys, curtain hooks, buttons & strings. The problem holding small objects may arise for example printing with string first stick a piece of string to a base may be a piece of wood or card board. Paint the string and then print. Padding should be used under the material to be printed in case of flat like comb, coils & scissors for softer jests like i.e. as or small pieces cloth, cover with folded newspaper than place a heavy book on top and apply pressure.



Mounted printing blocks

Mounted blocks are also called as adding blocks. A base has to be prepared and the material (buttons, paper clips, coins...) that is going to be printed has to be stuck or attached to the base with adhesive. The base can be a block of wood, a thick card, thermacol or a piece of hard cardboard. It is advisable to varnish a cardboard as it is absorbent.

Mounted blocks can be further classified as Adhesive or Glue Block, Collage Block and Nail Head Block.



Adhesive blocks or Glue blocks

Adhesive itself makes a raised printable design which is lines made of dried glue. A glue that is waterproof and that dries quickly has to be used. To create the raised lines that will print use a container with a nozzle to trail the glue on the design lines. These designs can be a free pattern or a pattern that is sketched on the base. It should be like piping icing on a cake. When the drawing is complete put the block in a safe place to dry.

Collage blocks

Collage means things glued on to a background. Various textures and shapes can be made by gluing different articles. Anything that creates an interesting raised shape can be used – but care should be taken that there is no difference in height of the glued-on articles or else only the highest will print. Articles that can be glued are pulses and grains like lentil, rice, beans, dals..., pieces of various textured cloths like corduroy, tweed, lace, knits..., crumpling a light cloth like net before sticking will also give an interesting result. The collage block can also incorporate (use) all sort of everyday articles like paper clips, safety pins, match sticks, buttons, rope, smooth string, etc. Even thick felt and pieces of cardboard or inner tube, wire screen can cut into various shapes and glued to form the block. Scraps of cork and vinyl tiles and different types of plastic will all print with their own particular qualities and textures.



Nail head blocks

During the eighteenth and nineteenth century textile printers developed a type of relief printing block which was made by hammering strips of metal edge on and nails into a wooden base. Nail head blocks can be prepared by hammering nails to follow a design into a wooden block. Nails with different shaped heads can be used. While preparing the nail-head block, care should be taken to have all the nails driven in to end at the same height, approximately



$\frac{3}{4}$ " (15mm), when all the nails are embedded in the base place a flat piece of wood over the nail heads and hammer on this to even them up. This type of a block prints as little spots or dots of colour according to the design.

Vegetable & Fruit blocks

Vegetables and fruits make very interesting printing blocks, vegetables and fruits which are firm and fresh have to be used. The vegetables and fruits that have too much of moisture in the e.g. tomato cannot be used as it dilutes the fabric printing ink and the print is not sharp. Some of the vegetables such as lady fingers, French beans, capsicum, and onion produce their own distinct design. Lady fingers produce hexagonal shapes, French beans give an oval shape or a tiny leaf shape, capsicum gives the shape of a flower, onion gives concentric circles when cut horizontally. When some of these are cut vertically they give other shapes, onion gives the shape of a petal and French beans gives the print of a bamboo. Apples and pears are little soft but easy to work with. The skins from various fruits & vegetables can also be used for printing.

Vegetables like carrots, radish, and turnips are solid to cut, carve and print with, but the worthwhile block for fabric printers is the potato. It is extremely easy to cut and prints very well on cloth with fabric dyes. Repeat and consistent prints can be obtained so this makes it an excellent medium for experimenting with different repeating patterns. Potato printing saves time and effort, there is no need to draw out a pattern in repeat, instead the same block can be used to make repeated prints.

When cutting the vegetables as blocks, cut with a sharp knife and be sure the cut surfaces are flat and even. The cut must be straight, so use a large knife for this, and cut it with one smooth motion. All the printing with vegetable blocks should be finished in one session as they tend to shrivel up and loose shape after a day or so.



Making the potato block

To make potato blocks a small pointed kitchen knife in wood cutting tools and a few potatoes are required, Use a firm medium sized potato. First wash & dry the potato but don't peel it, as the peel helps to hold the whole thing together.

Using a large knife cut the potato in half with one smooth motion. If very moist, blot the end (wipe the end) with a piece of paper towel or rag. The design can now be carved into the freshly cut surface. To draw a pattern on the surface



lightly indent the design with a pencil first, then with a sharp pointed knife make vertical incisions into the potato to mark out the boundaries of the pattern. Once this is done, move in from the side and carve off the negative spaces (unwanted edges or surrounding background). The cuts have to be sufficiently deep, not too shallow as it has to be free of the ink during the printing process. The

pattern or motif should be standing in relief once all of the negative spaces are removed. Leave enough potato to use as handle or base. Never carve a small design on a large potato as this creates a problem of judging the distance when the printing is done side by side, as a border, or as on over print.

After a day or so the potato block will shrivel up and become useless, so it is best to do all the printing in one session. A potato block will last well for a good number of prints, but if many meters of cloth have to be printed then the block will start to deteriorate and lose its definition.



Thus a duplicate has to be made. This is done by using the offset method.

Offset method: a print is made on a piece of paper and then a new half of potato is pressed on to the still wet print, the image will be transferred (offset) on to the new block. Do not move the potato once it touches the paper, except to press it more firmly into the paper, or to lift it straight off. Any side-to-side motion will smear the print. Then carve around this print making a replica of the original block. Remember that if the original block was printed straight on to the new block for carving then the design would be in reverse.

When printing either the brush on (fabric printing dye is applied to the raised design with a brush) or stamping pad method (dipping the block in the dye) and then stamping it on cloth are used.

Vegetable and fruit blocks can be used as borders or shapes built up out of grouped prints to decorate cuffs, collars and pockets. Even bed spread, table cloths, curtains cushions covers, and pillow cases can be printed.

Wooden blocks

Woodblocks for textile printing may be made of teak, jackfruit, holly, sycamore, or mango wood, the teak being mostly used in India. They vary in size considerably depending on the design, but must always be between two and three inches thick, otherwise they are liable to warping. The block, being planed quite smooth and perfectly flat, next has the design drawn upon, or

transferred to it. Transferring is done by rubbing off, upon its flat surface, a tracing in coalblack and oil, of the outlines of the design. The portions to be left in relief are then tinted, between their outlines, for the purpose of distinguishing them from those portions that have to be cut away. As a separate block is required for each distinct colour in the design, a separate tracing must be



made of each and transferred (or put on as it is termed) to its own special block. Having thus received a tracing of the pattern the block is thoroughly damped and kept in this condition by being covered with wet cloths during the whole process of cutting. A block cutter carves out the wood around the heavier masses first, leaving the finer and more delicate work until the last so as to avoid any risk of injuring it during the cutting of the coarser parts. When finished, the block presents the appearance of flat relief carving, with the design standing out.

Fine details are very difficult to cut in wood, and, even when successfully cut, wear down very rapidly or break off in printing. They are therefore almost invariably built up in strips of brass or copper, bent to shape and driven edgewise into the flat surface of the block. This method is known as *coppering*. Besides wood the other most common material used today for block printing is the linoleum block. Linoleum is a floor covering made from renewable materials such as solidified linseed oil (linoxyn), pine rosin, ground cork dust, wood flour, and mineral fillers such as calcium carbonate. These blocks are made of the heavy-gauge linoleum glued to 3/4" plywood. This is a good material as it can be easily cut and carved as compared to wood. It is also a much longer lasting substance than any of the other block printing materials. It is soft enough to cut (special cutting tools are used) yet firm enough to retain the cut image through a prolonged printing session. It also allows for greater control and therefore has more scope for designing. The designs can be a simple silhouette shape or an intricate composition with finely cut lines and a variety of patterns and textures.

{For linoleum, a special set of tools is required. This set contains a handle into which any one of four different-sized gouges can be screwed. One gouge is a knife-shaped blade. The others are either in the shape of a "V" or "U." The small "U" makes fine lines. When you combine these lines in various ways, they make up areas of fine textures. Delicate designs can be made from lines made from this one tool. The larger "U" tools make deeper or wider lines which you can vary by using firm pressure, then light, then firm in the same stroke. The shallow "U" makes bolder lines and is used to dig out large areas of linoleum. When gouges become dull, sharpen them with a Carborundum stone. Linoleum cutters can be used on wood.}

There are two distinctly different ways of printing with a linoleum block. In one method the printing surface of the block is left as it is. Linoleum, in its natural state is a non-absorbent material, so for this method sticky fabric printing ink and a roller are required as the normal linoleum surface would repel fabric dye paste which is too runny to apply with a roller.

The other method of printing uses dye paste, therefore the surface of the linoleum has to be treated so that it can absorb the dye. This is done by a process called *flocking*.

Flocking means glueing fine, dust-like powdered fabric fibers to the printing surface, thus creating a felt- like surface.

Printing Table

Cover a table or board with several layers of newspapers forming a newspaper pad, or an old uncreased blanket (pad of fabric), stretch it taut and secure it with thumb tacks or sticky tape. This pad makes the work place or the surface of work slightly resilient giving a cushion effect which helps the inked block make better contact with the fabric and it also helps force ink into the fibers giving a better, sharper print. {Over the table top a thick piece of woolen blanket is tightly stretched to supply the elasticity necessary to give the block every chance of making a good impression on the cloth. }The fabric to be printed is then pinned to this surface so that it won't slip while being printed.

Fabric printing dyes

Fabric printing ink: The consistency of colour used for block printing must be much thicker than that used for dyeing. It has to be of gooey enough to stick to the block. Acrylic colours are ready-to-use wash proof colours. They do not require a separate medium. Rich in colour value, their viscosity can be adjusted with water without losing colour intensity. They can be used on any type of fabric – synthetic and natural. They are available in many vibrant shades, also a new range of glitters which add to the beauty of designs, pearl colours which give a soft shiny texture and fluorescent colours which give brightness to the design. Silver, gold, bronze and copper shades are also available. Fevicryl and Crylin are some of the available acrylic colours in India.

Fabric dye paste: These are made with Pigment dyes. Pigment colors are mixed with kerosene and a binder. The consistency should be just right, for if it is too thick it gives a raised effect on the material, which spoils the design. Small enamel or plastic containers with lids are ideal for mixing and storing the mixed colors for a few days. Pigment colors are widely popular today because the process is simple, the mixed colors can be stored for a period of time, subtle nuances of colors are possible, and new shades evolve with the mixing of two or three colors. Also the colors are visible as one prints and do not change after processing.

Either the brush on i.e.) fabric printing dye is applied to the raised design with a brush or a brayer, **OR** stamping pad method i.e.) dipping the block in the dye and then stamping it on the fabric is used.

Brush On Method:

To ink the block, a flat brush or a small rubber roller called a brayer or a dauber is required. A Dauber can be made by rolling absorbent cotton into a ball about 1 ½" in diameter. Cover the ball tightly with silk or rayon, tying the cut edges together to form a "handle." The palette to be used can be a sheet of glass, a smooth stainless steel sheet or a large flat plate.



Inking the Block

If there is a lot of ink mixed on the palette, put some of it to one side. Roll a small amount (about two teaspoons) with a brayer until the brayer is evenly and lightly covered. If using a dauber, tap the dauber on the palette until it is evenly inked. If using the brush, load the brush with the ink.

Next, roll the inked brayer over the block, or tap the block with the dauber, or coat the block with the brush until the design surface is covered with ink.

Stamping Pad Method:

To ink the block, a colour sieve or stamp pad is required. The colour sieve or stamp pad consists of a tub (known as the swimming tub) half filled with starch paste, on the surface of which floats a frame covered at the bottom with a tightly stretched piece of mackintosh or oiled calico. On this the colour sieve proper, a frame similar to, the last but covered with fine woollen cloth, is placed, and forms when in position a sort of elastic colour trough over the bottom of which the colour is spread evenly with a brush. The stamp pad can also be made from three or four layers of cloth, sponge or felt placed in a shallow tray or jar lid.



Inking the Block

To ink the block, the block is pressed in two different directions on the colour sieve. This coats the design surface of the block with ink.

In choosing dye colors remember that the background color of the fabric will affect the color of the print, as the ink tends to soak in instead of remaining on the surface. For instance, yellow printed on blue may look green, red printed on green may turn gray.

Fabric

Most fabric will print well. Closely woven fabrics with smooth surfaces will give the clearest prints and are especially good for small designs or those with fine detail. Unbleached muslin, percale, broadcloth, batiste and fine linen are a few good choices. Heavier fabrics with rougher textures are fine for bold designs. Avoid corduroy, terry cloth and other pile fabrics as the pile prevents the block from pressing evenly into the fabric.

Before printing the fabric has to be washed thoroughly, dried and ironed. This is important as it removes any starch or sizing added during manufacture and dust which may prevent the dye from adhering to the surface. i.e.) what it does is to remove any coatings there may be on the fabric that interferes with the dye sticking properly. It also gives the fabric a chance to shrink, if it's going to. Also if the sizing is not removed before printing it will wash out later, taking some of the printed design with it.

It's important to iron the fabric before starting to print, as a flat surface is easier to print on than a wrinkled one and wrinkles can create havoc on a design.

Printing the Block on T-shirts or double layered articles

When printing a t-shirt or cushion cover or any double layered article, for the dye not to soak through from the front where it's being printed onto the back, a piece of card is inserted into the t-shirt or article. Card from an empty box is perfect, but it should not have a fold or crease as that may cause distortion and smudging of the print.

Printing the Block in even rows

When printing a block in even rows, some sort of gauge to keep the printing straight is required. It can be done in one of the following ways:

- Fold and crease the fabric into even squares which are the same size as the block.
- Divide the fabric into desired areas by drawing light pencil lines with a tailors chalk.
- If a crease or pencil mark is undesirable, secure the fabric to the printing surface so it will not slip. Then mark off the desired sized areas by laying fine string over the surface and securing it at the edges.

Printing the Designs in more than one colour

If the pattern contains several colours the cloth is usually first printed throughout with one, then dried, and printed with the second, the same operations being repeated until all the colours are printed.

FIXING THE DYE

Fabric printed with fabric printing dyes should be allowed to dry thoroughly. Then the dye has to be fixed to make it fast to washing. This is done with heat. Cover the painted area with a thin cotton cloth and iron for several minutes with the iron set at high temperatures as high as the cloth can safely take it. Block printing by hand is a slow process it is, however, capable of yielding highly artistic results, some of which are unobtainable by any other method.

SANGANER WOODEN BLOCK

Sanganer block prints are primarily done on an off-white or pure white background with the use of wooden blocks or screen printers. You will find vibrant floral patterns and geometric designs imprinted on the fabrics. One of the most noticeable characteristics of Sanganer prints is their intricate detailing. Customers are often seen admiring the finesse in the designs of delicate flower curves and petals. The borders of the fabric also showcase a variety of different floral patterns in stylish designs.

Some common flower prints used in Sanganer block printing are roses, lotuses, sunflowers, lilies, marigolds, rosettes and lotus buds.

Motifs of Sanganer



Mirchi Design



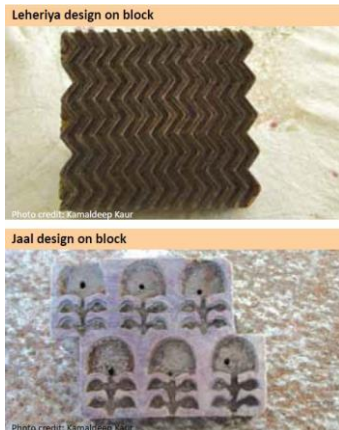
Badha Buta Design

BAGRU WOODEN BLOCK

Bagru printing is a traditional printing technique that is done using natural colours. It is a craft practiced by the 'chippas' community in a remote town of Rajasthan. Bagru printing is generally done on a blue or indigo background. This region is popular for two kinds of prints: Dabru prints and seyali-bagru prints.



Motifs of Bagru



Leheriya Design and Jaal Design

Kangura Jaal Design

Gujarat and Rajasthan Block

Blocks used in printing of designs for baandhani in Gujarat and Rajasthan.



Kashmir Block

Kashmir – block design for yoke of a women's dress, once the design is printed using the block, then the embroidery commences.



REVIEW QUESTIONS:

- 1) What Is Block Printing?
- 2) Briefly explain the history and origin of block printing.
- 3) Mention the tools and equipment's used in Block printing.
- 4) State the different types of articles found around in the house or yard, which will be suitable for printing blocks.
- 5) What is fabric dye paste?
- 6) Explain fabric dye paste and fabric printing ink used in block printing process.
- 7) Why are vegetable blocks wiped before printing on cloth?
- 8) Vegetable printing session has to be finished in a day. Give reason.

- 9) Explain in brief how the printing table is prepared to be used for block printing?
- 10) Explain the process of making nail head block.
- 11) Write a short note on nail head block print.
- 12) Explain the procedure of making potato block.
- 13) Explain the method of block printing.
- 14) Potato printing saves time and efforts. Give reason.
- 15) What are collage blocks?
- 16) Write a short note on printing from nature.
- 17) Explain the making of glue blocks.
- 18) Design a bed sheet using 3 vegetables and 3 fruit blocks and color it.
- 19) Draw a border print on the paper taking nature and found block as inspiration and color it.

2. TIE AND DYE

Introduction of Tie-Dye.

Tie-dye is a process of resist dyeing. The process of tie-dye typically consists of folding, twisting, pleating, or crumpling fabric or a garment and binding with string or rubber bands, followed by application of dye(s). The manipulations of the fabric prior to application of dye are called resists, as they partially or completely prevent the applied dye from coloring the fabric. The whole point of tie dyeing is to prevent the dye from reaching the fabric evenly. Any place that the dye can't reach will stay white, or a lighter color. The gradations of color from intense to light can be beautiful. You can accomplish this by folding the fabric, tying it with resists. Another reason to tie is that it makes each garment or piece of cloth a small, neat bundle much easier to handle if you have a lot to do. If you don't tie, but just apply the dye directly, you need more space and can do fewer garments or pieces of fabric at a time.

History of Tie & Dye or Bandhani.

Indian tie & dye or bandhani is a native craft in many countries over the world. Bandhani is one of the most recognizable Indian prints. Bandhani work in India was started by the Muslim Khatri Community of Kutch. The tradition has passed from one generation to the other. Having been around since the time of the Indus Valley Civilization, the term bandhani comes from the Sanskrit word 'Bandha' which means 'to tie'. The characteristic effect produced is more or less softening, bleeding of the colour along the edges of the shapes. It is an ancient art which is practiced mainly in the state of Rajasthan and Gujarat. Places in Rajasthan like Jaipur, Sikar, Bhilwara, Udaipur, Bikaner, Ajmer, and Jamnagar in Gurjarat are the well-known centres producing odhnis, sarees and turbans in Bandhani. Different communities in Rajasthan have for ages followed the tradition on tying turbans with different patterns of bandhani on their heads. These were used to identify which community the person belonged to. In Bandhani, different colors convey different meanings. While red represents a bride or recently married girl, a yellow background suggests a lady has become a mother recently. Also, the colours and patterns indicate the community the girl belongs. Motifs and colors of Bandhani may change based on region to region. Bandhani is a two-stage process where silk or cotton fabric is tied and dipped in chosen colours. Selected sections of the cloth are lifted with raised nails and tied up with thread. Women take up this challenging job of creating aesthetic patterns, which lends an impeccable look to the fabric before it undergoes further processing. It is a well-known fact that a Bandhani artisan can be easily recognized by looking at his or her finger. Artisans grow the nail of the little finger or wear a metal guard ring to facilitate easily picking the fabric for tying.

As per evidences in Historical Texts, the first Bandhani saree was worn at the time of Bana Bhatt's Harshacharita in a royal marriage. It was believed that wearing a Bandhani saree can bring good future to a bride. Ajanta walls stand for the evidences of these Bandhani saree, the dyers have experimented with the use of different elements both natural (dyes were extracted from roots, flowers, leaves, and berries) and manmade for ages. Also there are experiments with different binding/tying techniques to create patterns on cloth immersed in containers of dye. (The textile is decorated by plucking the cloth with the fingernails into many tiny bindings that form a figurative design. It features patterns like dots, stripes, waves or squares formed by first tying small portions of the fabric at intervals with continuous thread to form interesting patterns, and then dyeing it.) Different types of tie and dyes have been practiced in India, Japan, and Africa for centuries.



The technique involves dyeing a fabric which is tied tightly with a thread at several points, thus producing a variety of patterns like Leheriya, Mothra, Ekdali and Shikari depending on the manner in which the cloth is tied. Boond - a small dot with a dark centre, Kodi - tear or drop shaped, Laddu Jalebi (after the name of Indian Sweets) - the swirling effect. Very elaborate motifs are made, in tie and dye work. These include flowers, creepers, bells and jalas. Knots are placed in clusters each with a different name, for example, a single dot is called Ekdali, three knots is called Trikunti and four knots is called Chaubundi. Such clusters are worked intricately into patterns such as Shikargah (mountain-like), Jaaldar (web-like), Beldaar (vine-like) etc.

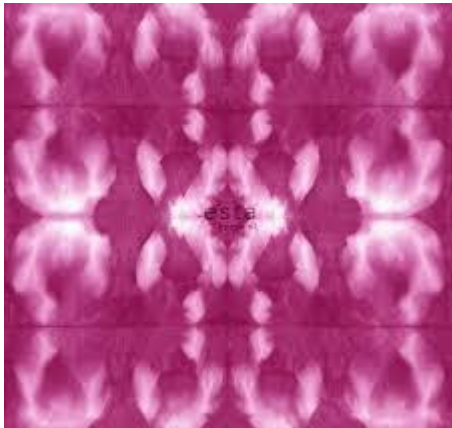
Flower motif



Creeper motif



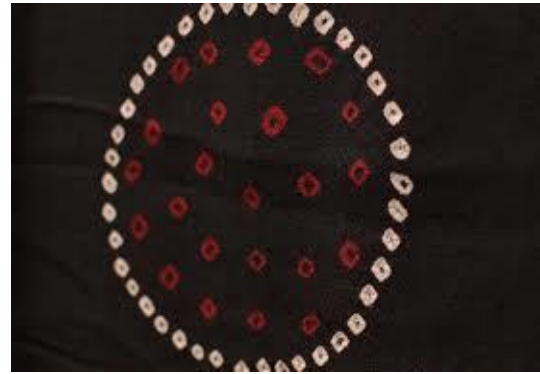
Bell motif



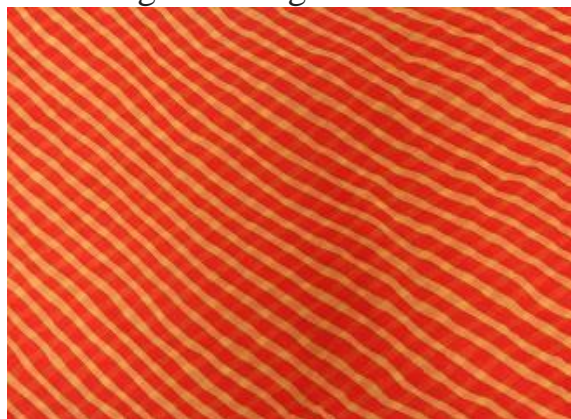
Jaala effect



Ekdali: Ekdali is possibly the most intricate printing of all tie and dyes. It comprises small circles and squares in different shades of one or more colors. This is popular in the Sikar and Jodhpur regions of Rajasthan.



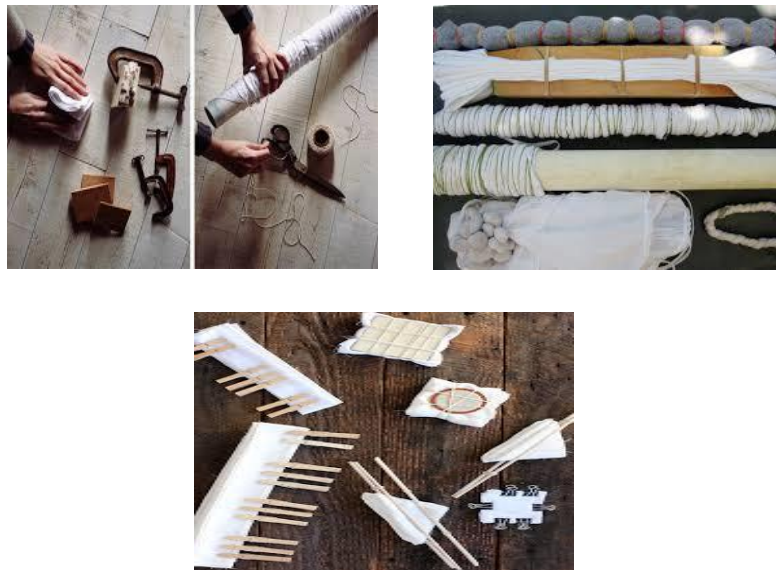
Rajasthan is well known for its Leheriya pattern or pattern of waves, which symbolizes water waves. Only two colours are used which alternate each other in a pattern of stripes arranged diagonally. Originally, the two colours used were the auspicious colours of yellow and red. The dominant colours in Bandhani are bright like yellow, red, green and pink. Maroon is also an all-time favourite. The Bandhani fabric is sold with the points still tied and the size and intricacy of the design varies according to the region and demand.



The process of tie-dye typically consists of folding, twisting, pleating, or crumpling fabric or a garment and binding with string or rubber bands, followed by application of dye(s).

Shibori includes a form of tie-dye that originated in Japan and Indonesia. Shibori includes a number of labor-intensive resist techniques including stitching elaborate patterns and tightly gathering the stitching before dyeing, forming intricate designs. Another shibori method is to wrap the fabric around a

core of rope, wood or other material, and bind it tightly with string or thread. The areas of the fabric that are against the core or under the binding would remain undyed.



Traditional textiles of India made by tie and dye technique.

There are two famous traditional textiles of India made by tie and dye technique they are Patola fabrics of Gujarat and bandhani of Rajasthan. Both are usually dyed in two or more dyes by resist dyeing techniques. But there is a difference between the stages at which they are tied and dyed. In Patola the yarn is tied and dyed according to the design before weaving and are then woven to form intricate multi-coloured designs. On the other hand, woven fabric is tied and dyed to have innumerable dots and lines (laheria -wavy pattern) in Bandhani.

PATOLA:



BANDHANI:



The Bandhani work has been exclusively carried out by the Khatri community of Kutch and Saurashtra. The city of Jamnagar, located in the Gulf of Kutch, in Gujarat is well known for its red Bandhani. Dyeing process of Bandhani is carried out extensively in this city, as the water of

this area is known to give a particular brightness to colors, specifically reds and maroons. A meter length of cloth can have thousands of tiny knots, these knots form a design once opened after dyeing in bright colours which convey different meanings. People believe that wearing Red brings good luck to a newlywed's life.

The Fabrics Used for Tie and Dye

The best fabric to use is light weight closely woven fabrics as these are easiest to handle when they are being tied and also clearly defined patterns are produced. Cotton fabrics, in particular mercerized cotton fabrics are considered to be the most appropriate for tie and dye work. (It is the best fabrics for dyers, and painters as it is a great lighter weight finished items, it takes dyes and paints particularly well. In fact it dyes several shades darker than the un-mercerized fabrics. A fantastic choice for any dye work where you need a lighter weight fabric) these include lawn, muslin or mulmul, cambric, poplin, voile, etc. Handloom fabrics, and silk can also be tie-dyed with attractive patterns. All new cloth should be given a hot wash in soap water & detergent to get rid of grease, starch, etc as a result it will absorb dye to the fullest. It should then be dried and ironed. Traditional dyes have been replaced from synthetic dyes due to many reasons such as cost, easy procurement and time involved in the process. It is really interesting to see that how two different fabrics dipped in the same dye solution can differ in color dramatically. Final outcome may vary drastically and depends on the texture and type of fabrics.

Tools and Materials Used for Tie and Dye

These include:

Objects for tying so that a variety of effects can be created (these include ball-shaped objects – coins, pulses, beans, pebbles, buttons, beads, rings etc.)

Pair of gloves is a must during tie & dye process.

Dyes used for tie and dye are direct dyes, also known as hot water dyes. These are usually in powder form, which is first dissolved in a little hot water to form a paste and then added to the hot water dye bath. Salt and lime are added as fixtures of the dye onto the fabric i.e.) to help the dye to be absorbed evenly and fix it. Cold water dyes or naphthol dyes can also be used.

Dye Bath- Any vessel of a suitable size which can be heated and will not stain can be used for the dye bath. Enamel, stainless steel, galvanized ware and copper vessels are the best for hot and cold dyes, while for cold dyes, vessels made of plastic or glass can also be used. The vessel should be big enough to contain enough water so that the fabric is properly immersed in the dye bath and stirring is done easily during the dyeing process.

The depth of colour depends on the amount of dye used and not on the amount of water, but if the water is in sufficient and there is no movement of the fabric

in the dye bath there will be an uneven penetration of the dye and the result is a patchy fabric.

An important point to remember while dyeing is to wet the fabric thoroughly before immersing in the dye bath as this helps the dye to spread evenly and properly and avoid getting a patchy effect.

Tying agents or resists commonly used are twine or thick thread, various other types of threads and strings which are water proof can be used like fine nylon and plastic thread. Wool or cotton thread rubbed on a candle can be used.

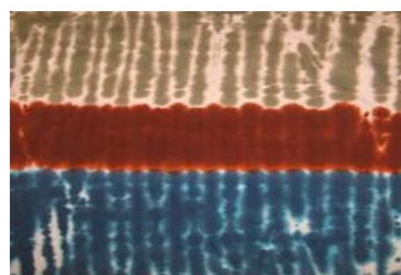
Coarse thread is good if wider stripes are required and is especially useful on thick fabric. Strips of cloth can also be used for this purpose. Rubber bands are also useful for bindings. Clothespins or pegs either metal or plastic ones can be used to grip the cloth with different folds to produce a dotted pattern. Clips of different sizes, pins, paperclips, etc produce other patterns. Little objects like grains, beads, beans, pebbles, buttons, marbles etc. can be tied in the fabric to produce different designs. Plastic bags or sheets are useful for a little advanced type of work. The large areas to be left undyed are wrapped in plastic sheets for protection and tied. This isolates the enclosed fabric. The fabric can also be isolated by tying knots in the fabric itself. The fabric can also be sewn with a needle and thread or machined and gathered to produce intricate designs.

DIFFERENT FOLDING TECHNIQUES IN TIE & DYE

There is no particular method it's all about creating with free mind, playing with colours and be creative. There are different technique which include marbling, twisting and coiling, knotting, binding, folding, sewing, tying objects, etc.... of the fabric.

Stripes

Roll the fabric very loosely, forming a long tube. The stripes will be at right angles to the tube. Tie at one inch intervals as far apart as you want the stripes to run. Loop impermeable bands or thread strings around the tube a few times and knot.



Make sure the ties are very tight. Now you can immerse the fabric in tie and dye water.

Random Circles

The random circles effect is made by tying knots with string, thread or elastic bands in different places.

The more fabric is tied, the larger the circles. The less fabric that is tied, the smaller the circles. If tied at the corner one will get half circle or semicircle.



Crumpled (Marbling): Lay the fabric flat on your work surface and gather it up into random wrinkles by spreading your fingers out and crumpling it up in a disc shape. You want to expose as much of the fabric to the dye as you can so make sure there are lots of little folds and wrinkles. When you have finished crumpling, wrap 3 or 4 bands around or tie with thread/cord & form it into a ball, then place it in the dye bath. One can even use modern direct application

method for the crumpled and tied fabric. Apply dye randomly to the crumpled fabric using the squirt bottles.

One can use combination of colours or can use one single colour to obtain desired effect.



The effect obtained will be variegated and irregular cloud-like texture which is dyed on the cloth by this method which also provides a rich and unusual background for prints, embroidery, etc. After the fabric has been marbled, it can be tied up again into a definitive design and dyed a second darker or contrasting colour so that in the resist areas, the marbled texture shows through instead of plain white cloth. As an illustration, take a piece of cloth about the size of a handkerchief and gather it up into a ball or bundle keeping the right side of the cloth on the outside. Bind the bundle round and round in various directions with a thread. Fasten the binding thread, leaving one end about 6 inches long, which

can be held while the bundle is lowered into the dyebath. It may be first dyed in lighter colour. After removing the surplus dye, it may be tied into a ball again and dyed in much darker shade.



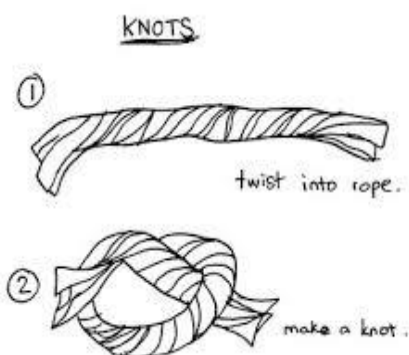
Knotting

An easy and quick way, of producing attractive coloured designs, is best done on fine fabrics such as muslin, lawn, fine cambric, voile, silk, etc. Coarse, bulky fabrics are unsuitable for this purpose.

Knotting is generally operated in three ways:

i) A length of cloth is tied into knots: In this case, a large number of small knots gives a superior texture than a small number of large, clumsy knots. First, the knot may be tied in the middle of the sample and then working outwards, a number of knots made. The knots should be tightened up until they are uniform in size. The sample is then ready for dyeing.

An alternative scheme may involve the following steps: after a small knot is made in the centre of the fabric—1. Wet the fabric and then dye in lemon yellow. Wash off surplus dye. 2. two knots on either side of the first knot. 3. Dye in black colour. 4. Rinse and squeeze. 5. Wash off surplus dye and dry the sample before untying. 6. Untie and iron.



ii) A square, rectangle or triangle marked on the cloth is knotted: After marking a square or a rectangle, a knot is tied in the middle and then each of the corners is tied into knots. In the case of a triangle, the knot can be tied at the apex or at the centre of the triangle. Then the pointed corners can be knotted.

iii) Knots tied in a length of cloth to form an over-all pattern. In all the three cases described above, the tied sample is immersed in the dye, then rinsed and dried. Second and third dyeing build up the texture and the pattern acquires form and substance.

Binding

Either alone or as a supplement to other methods, is an important process in tie-and-dye. If certain parts of the fabric are bound tightly with thread before they are dyed, they will resist dye penetration.

Binding applied before the first dyeing reserves the original cloth (usually white) while binding before the second dyeing reserves the first colour. Binding applied before the third colour reserves the second colour. For binding, linen thread, cotton yarn, cord, tape, rubber rings, etc. can be used. A number of patterns can be created with the help of binding. Line binding results in strips or bands.





Circles

Can be created as follows: Put a pencil dot to mark the centre of each circle and at the dot make a closed-umbrella shape. If now the binding thread is tied some way from the central point a large circle results. If the binding is just below the spot, a small circle results.

Spot can be created as follows. On a fine fabric, put a pencil dot on the cloth where a spot is planned. With a needle, pick up a minimum portion of cloth on the first dot. Wrap a sewing thread once or twice round the cloth immediately below the needle. A spot is thus formed. Alternatively, the dot design can be created by the following procedure: 1. Put the pencil dots according to the required design. Then tie white grams at the marked dots. 2. Wet the fabric and dye in yellow colour, Rinse and wash off surplus dye. 3. Tie the fabric where we want yellow colour. 4. Dye in green colour. Wash off extra dye.



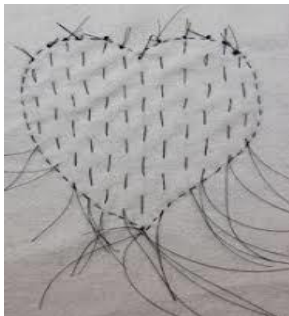
TRITIK or Stitching or Sewing resist



Consists of drawing up a thread sewn into the fabric so the puckers or folds that result resist the dye. Very intricate designs can be created by this method. As an example the following steps will result in a coloured circle design.

1. Draw three circles of different sizes on a fine fabric and sew along the lines. 2.

After the sewing is finished, pull up the thread as tightly as possible 3. Wet the fabric and dye in light blue colour. Wash off extra dye. 4. Tie the fabric where we want blue colour. 5. Dye in dark colour. Rinse and squeeze the fabric and wash off surplus dye. Dry, untie and iron the fabric



Folding

Many striking patterns and effects, especially stripes, are produced by the folding technique, combined with binding. Simple stripes can be made as follows: Rule a line in the middle of each planned stripe and crease. Fold the creased edges together like accordion pleats. Form the sample into a bundle of accordion pleats at right angles to the first crease. Make a solid band of binding around the bundle and dye. As an illustration, an attractive pattern can be created by folding following the steps listed below: 1. Fold the fabric in half, Turn each side back again to middle so that there are four thicknesses of cloth. Bind the middle of the bundle. 2. Dye in pink colour. Wash off surplus dye. 3. Tie the bundle across the first binding and at right angles to it. 4. Dye in black colour. Squeeze the fabric in cold water, and wash off surplus dye. Dry, untie and iron. Different sized round shapes like ping pong balls, rubber balls, marbles, coins, pulses etc. are used.



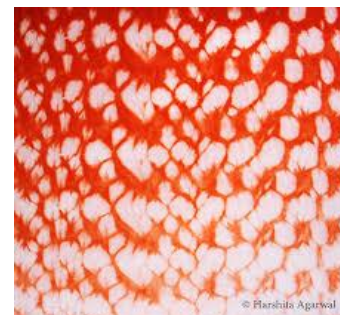
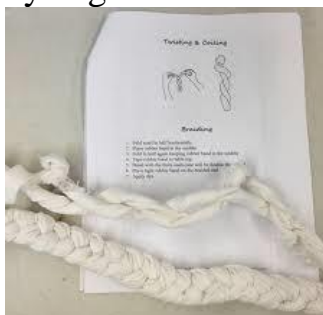
Peg Tying

You can also use cloth pegs or clamps as resist materials. Fold the fabric and put pegs at regular interval



Twisting and Coiling

Unlike marbling which can be employed to dye specific areas of a fabric, twisting and coiling involves the immersing of the whole length of the fabric in the dye bath. For making a texture, the selvages of the fabric are brought together to form a tube lengthwise keeping the right side outside. Each end of the tube is then gathered up and tied separately with thread. For a small sample this step is not essential. An end can be held in either hand while the tube is twisted into a cord. Finally, binding is done around the cord. It is now ready for dyeing.



Spirals

Spiral fabric involves pleats of fabric arranged in swirls around a central point, gathered into a round bundle. Different wedges of the circular bundle are usually dyed different colours. Lay the fabric out on a flat surface. Place your thumb and fingers together on the cloth where you want the centre of the design to be. Start twisting so that you create a spiral. After each twist, flatten the fabric so that it stays flat. Be careful so that the folds don't rise or lump up. Bring the loose ends into the circle so it looks like you have a pancake. Secure with bands or string so they intersect, like spokes on a wheel. The spiral pattern takes a lot of practice. Trial and error is the best way to learn to tie dye. Make sure you're satisfied before you place the fabric into the dye.



Lightning Bolt

Lay dampened shirt flat, face down. Smooth out any wrinkles, and align seams. Fold shirt in half vertically, again smoothing out wrinkles and aligning sides. Starting about the middle of the chest, fold shirt up to about the bottom of the sleeve. From about half-way between the bottom of the fold and the hem of the shirt, create another fold and bring it up to slightly overlap the first fold. Using a straight edge and a washable fabric marker, draw a diagonal line from a point between the neck and the sleeve to just above the hem. Starting at the bottom of the diagonal line, form accordion folds keeping the line straight as you go up to the shoulder. Accordion folds will be bulky due to the thicknesses of the horizontal folds. Use cotton string, or rubber bands to secure the accordion folds from the line over toward the sleeve, then dip dye or use modern direct application method for multiple colours.



**** Modern "direct application" method of tie dye**

In direct application tie dye, you make small, concentrated solutions of dye and squirt the dye onto the fabric. You do not make large buckets full of dye, and you do not dip the fabric into the dye. When using dyes and chemicals it is important to protect your work area, and always wear gloves and protective clothing.

Equipment you will need:

- Dyeing Surface: Disposable work surfaces such as cardboard or plastic tarp work well.
- Work space protection: Plastic sheets covered with newspaper provide good workspace protection.
- Personal protection: rubber gloves to protect skin from fixer irritation and dye staining; eye protection to protect eyes from splashing fixer water and detergent; dust masks to prevent breathing powders. "Paint shirts" to protect clothing.
- Cups, bottles or other containers in which to mix dye colors.
- Ties: Big, thin rubber bands, twine, cords, plastic strips, etc. all work well to tie fabric.
- Pipettes, squeeze bottles, or other tools to apply dye.
- Measuring cups and measuring teaspoons.

Procedure for tie & dye:**Step 1: Wash fabric**

Wash fabric to remove any sizing or oils on the fabric that may interfere with the dye. Dry the fabric & iron it.

Step 2: Prepare fixer water.

Dye fixer is a chemical called sodium carbonate or soda ash. Wear gloves to keep it from irritating your skin and avoid splashing it into eyes to avoid irritation and burning; treat it as you would a strong soap.

Step 3: Soak Fabric

Soak the material to be dyed in the dye fixer solution. Let the fabric soak in the solution for 5 to 10 minutes, or until the fabric is completely saturated. You can reuse the fixer water and treat several batches of fabric in the same mixture.

Step 4: Fold, Twist or Tie.

Fold, twist or tie it into the pattern you want to dye.. The dye spreads on the fabric in different ways depending on how wet the fabric is with fixer water. Wetter fabric causes the dye to flow out into fabric in more feathery or marbled patterns. Dryer fabric yields cleaner lines and less spreading. Different dye patterns look better with different wetness levels in the fabric. For example, marble patterns look better when starting with a wetter shirt, and striped patterns look better on dryer shirts.

Step 5: Prepare dyes.

Mix the dye powders with plain warm water.

Step 6: Mix dye colors

In this stage, you are not making big buckets full of dye. You will be mixing dye powder with plain warm water in cups, bottles, or other containers in small, concentrated batches. You can control the shade of the colors by using different quantities of dye in your concentrated dye solutions. Stir dye well to dissolve dye powder completely.

Step 7: Apply the dye

With fabric on dyeing surface, apply dye to fabric by squirting dye onto the fabric with a pipette, squeeze bottle, or other dye application tool. Most dyeing patterns call for saturating the fabric with dye. The mistake most beginners make is to not squirt enough dye into the fabric. Apply all the different colors at this time. Flip the fabric over and apply dye to both sides of the fabric, saturating each side of the fabric.

Step 8: After you dye

After you are done dyeing the fabric, leave it alone. Do not untie it. Do not hang it up to dry. Leave it tied up, and leave it alone. Let the fabric sit for 2-24 hours. The longer you can let the fabric sit, the easier it will be to wash out loose dye from the fabric. The length of time you let the fabric sit is not overly critical. If you are in a hurry, let the fabric sit for as long as your deadline will allow.

Step 9: Wash loose dye from fabric - Wear gloves while handling the fabric, as the dye will still stain your hands until after it has been washed. Place fabric under cold running water and rinse until no more dye comes out of the fabric. We always say “rinse until you’re sick of rinsing.” A lot of loose dye will wash out off the fabric. This is normal. The wash water may turn black or brown, and the fabric may look discolored with ‘dirty’ dye. This is normal as well.” After rinsing, move to washing machine. You may wash several pieces at once.

Step 10: Wash with detergent.

Put your dyed shirts directly into a top loading washing machine, adding regular laundry soap in amounts for a normal wash load. Wash fabric as many times as you need to until you've washed out all the loose dye and the water in the rinse cycle is clear. Dry as you would any normal fabric.**

THE 4 TYPES OF RAJASTHANI TIE & DYE DUPATTAS

Rajasthan is a land of art & culture. The Thar Desert has so much to offer in terms of clothes. The state several types of handmade Dupattas. In fact, the tie & dye dupattas are an integral part of the Indian ethnic clothing. But do you know the difference between a bandhej dupatta and a leheriya dupatta, they are not the same.

Here is a list of 4 Rajasthani Tie & Dye handmade Dupattas.

1. Bandhej Dupatta or Bandhani Dupatta:

Bandhej or bandhani literally means tying.

The technique is to tie the fabric with a grain, pearls, cotton etc to make a dot or square pattern. The size of the dots depends on the size of the object tied in the fabric. These dots ultimately make a pattern. Threads are secured till dyeing process is completed. The covered cloth remains uncolored and the exposed cloth gets dyed. Various patterns can be made by artisans by tying and/or stitching the fabric in different ways.



2. Leheriya Dupatta:

Leheriya which literally means "waves" is a tie & dye technique to make linear patterns on the cloth.



Method of Making Leheriya Dupattas - Tie the dupatta with accordion pleats at regular intervals. Dye the cloth in the color. The area of the fabric which was covered by thread would remain in the original color & the remaining cloth would get the color. This results in a linear pattern/leheriya pattern on the dupatta.

3. Shibori Dupatta:

The Shibori is a resist dyeing method which originated in Japan. The art of Shibori has been welcomed by the Rajasthani artisans with open arms. Rajasthani Shibori generally made by using a pleating and stitching technique.



Method of Making Shibori Dupattas - Rajasthani Shibori Dupattas are generally made by using a stitching technique. The cloth is stitched in very close sections to form various designs. The fabric is then dyed. The uniqueness in the design depends on the way it is stitched.

4. Mothra Dupatta:

This chequered pattern tie-dye technique is hard to miss. It is basically double dyeing the Leheriya



Method of Making Mothra Dupattas- First tying and making a leheriya pattern and then untying the thread of the initial leheriya. The fabric is again tied to make a diagonal leheriya along the former pattern. After the process is completed, you get a beautifully chequered mothra dupatta.

DYES USED:

There are various types of dyes which will give different effect on different types of fabrics, most commonly used dyes are Hot water dyes & cold water dyes. Which are usually in powder form & is available in craft shop in wide

range of colours. Use small containers to mix the dye, the dye powder have to be first dissolved in cold water & formed into a smooth paste and then it is added to hot water. Salt (a hand full) & lime juice (few drops) is added to the dye, which acts as fixer to a two mts of light weight cloth. Wet the tied cloth before dipping it in the dye bath, so that the dye spreads evenly. Now dip the tied cloth & leave it for twenty mins. in the boiling dye.

If you are using Hot water without boiling, than leave the cloth for forty mins. in the dye bath (remember that boiling will fasten the dyeing process.)

Procedure for tie & dye:-

-The fabric has to be first washed in cold/hot water to remove starch & then iron.

-Mark the areas to be tied & choose your colour combination.

-If it is a repeat design on dupatta, then fold the cloth according to your design (then do the marking).

-wet the cloth slightly, as it becomes easier to pick the area for tying. If it is a knot for sunburst effect then wind it around itself to form a knot, for pleats fold the cloth in pleats & tie. When you have worked the design & tied, then

-Prepare the dye bath, wear an apron during the process.

-Make smooth paste of powder dye in small containers for adding it to the main dye bath (hot water or cold water dye)

- Salt (a hand full) & lime juice (few drops) is added to the dye, which acts as fixer to two mts of light weight cloth.

- Wet the tied cloth before dipping it in the dye bath, so that the dye spreads evenly.

-Dip the tied cloth & leave it for twenty mins.in the boiling dye, if you are using hot water without boiling, than leave the cloth for forty mins. in the dye bath(remember that boiling will fasten the dyeing process.)

-Remove the cloth from the dye bath & wash under running tap till the colour stops running. (Only the excess colour which is not absorbed will run off.

-Open the ties & dry the cloth in shade. (If exposed to sunlight, colour fades easily & uneven patches will be obtained.

-Starch the cloth & iron it, if it needs a fresh look. (Usually crumpled look is more appealing in tie & dyed cloth)

Introducing more colours in the tie & dye article

There are two ways for dyeing the second and subsequent colours.

- Some of the original bindings are removed to reveal the undyed areas of the fabric. These will receive now a dip in the second or subsequent dye and get pure colour in open areas. For example, you want white, blue, yellow and green colours in your pattern. Then tie the areas that you want white and blue. Wet the cloth and dip it first in the yellow dye bath. Rinse it after the dye bath and let it dry. Open the tied areas where you wanted to have the blue colour,

retie the areas where you want to retain white and yellow. Now give the cloth a dip in the blue dye bath. The areas opened after the first dye bath will acquire a pure blue in them, and give green colour in the yellow untied areas.

OR

White fabric tied and dyed yellow gives white and yellow shade. Then the fabric retied and redyed red gives white, yellow, orange and red shades. Retied again and redyed blue gives white, yellow, orange, red, blue, green, brown and purple shades. This way three dyes will give you seven colours plus the white.

- With the second method only a few ties are made in the beginning, more being added between each dyeing. For this particular method the arrangement of the colours has to be carefully controlled as the colours are added one over the other. One thing must be kept in mind while dyeing.

Always work from the lightest to the darkest colour.

The best way to work is to have contrasting dyes like orange and violet, or yellow and blue, so that each colour stands out and brings out the design into relief. If you use closely related colours like yellow and orange, or green and blue, the two colours will merge into each other and the design will not stand out so clearly. You can use the same dye 2-3 times to get different shades. It is not very essential to use too many colours to get good effects. More colour combinations can be easily achieved by experimentation.

Useful information about tying.

- Use cottons & silk fabric for tie & dye and wash/rinse the fab. Thoroughly before use so that it is starch free.
- Thread used for tying should be of strong quality & does not break in the process of dying. It should be tied very securely to ensure pure colours.
- To ensure clear cut lines, bind the cloth very tightly leaving no space between the thread (which is wound several times)
- To acquire the net or the web effect, bind the cloth in a spiral form(x) & use a little thicker thread. Leave little spaces in between to let in the dye. Take note that thread is not loosely tied or you will not get the fine lines.
- You must keep a variety of tying agents to get various effects. E.g. Twine, thin thread, thick thread, rubber bands, clips/pegs, strips of cloth etc.....
- While using thick material remember to leave wide gaps between each tie, the thicker the material the larger the pattern should be to allow the dye to penetrate in every fold properly.
- If the fabric is to be given more than one dye bath. It is advisable to tie not only the undyed areas but also those which are to take the second & subsequent dyes also.

Useful information about Dyeing.

- Always keep a sheet of plastic or newspaper on the table surface to mix your dyes.
- See that the spoon you use is completely dry. A wet spoon in the dye powder can spoil your colours for further use
- Replace the lids on the dye jars, it should be kept air tight or will form lumps and get spoilt.
- Have a separate bowl or a separate bucket for each dye & put names on them.
- Use the same spoon measurement throughout for each recipe.
- Remember to make a paste out of the dye powder. & then only dissolve it in the water.
- Never do the dyeing with bare hands. Always protect them with rubber gloves.
- fabric should be dipped & stirred constantly while in the dye bath. This way dye will penetrate in all folds, even colour will obtain in sample.
- always rinse the fabric before & after each dye bath to get even & pure colour.
- Never leave the wet fabric in piles or colours may run from one to the other.

Useful information about opening the ties.

- Before untying the ties let the cloth be rinsed in cold running water till no excess dye is left.
- let the cloth get dry before untying, or the surplus dye in the inner folds may spread on to white areas.
- Never cut the threads with a blade. Always make use of scissors.
- After opening the fabric give it another rinse in the cold water and then iron if needed.

There are a number of other ways to do tie & dye, they are Reverse tie & dye (bleach method) e.g. instead of white pattern being isolated on white cloth & rest of the fabric being dyed, say blue, the result of using blue cloth & colour remover(bleach)is a blue pattern on a white fabric. First of all you must ascertain that the colour remover will work by testing a sample of the fabric as some dyes cannot be stripped. The fabric which you have dyed yourself in hot water/cold water dye will be suitable for reverse tie & dye. Also known as discharge printing.

Note :** Optional/ not for evaluation

REVIEW QUESTIONS

(Very Short Answers...1 mark)

1. What is resist?
2. What is other name for tie and dye?
3. Mention two famous traditional textiles made by tie and dye technique.
4. The style of printing used for tie and is _____.
5. Rajasthan is well known for its laheria pattern which symbolizes _____.

(Short Answers I...2 marks)

1. Briefly explain steps involved in tie and dye process.
2. Mention the characteristics effect of tie and dye.
3. How to identify bandhani artisans from Rajasthan or Gujarat.
4. What is Patola in tie and dye?
5. Name the resists used in tie and dye.
6. What is Tritik in tie and dye?
7. Name four types of Rajasthani tie and dye dupattas.

(Give reasons ...2 marks)

8. Mercerized cotton fabric is considered to be the most appropriate for tie and dye work.
9. All the new cloth to be used in tie and dye should be given a hot wash in soapy water.
10. Fabric should be dipped and stirred constantly while in the dye bath.

(Short Answers II...3 marks)

1. What is Shibori technique in tie and dye?
2. Differentiate between Patola and Bhandhani fabric of tie and dye
3. Explain any two folding techniques in tie and dye.
4. Explain any two types of Rajasthani tie and dye dupattas.
5. Write useful information about tying.
6. Write useful information about dyeing.

(Match the column ...1 mark)

Technique

Effect

1. Boond-----A small dot with a dark centre
2. Kodi-----Tear or drop shaped
3. Ekdali-----A single dot or square in different shades of colour
4. Trikunti-----Designs with three knots.
5. Chaubundi-----Designs with four knots.

Duppattas

Effect

1. Mothra-----Chequered Effect
2. Shibori-----Stitched in very close sections
3. Leheriya-----Tied with accordion pleats at regular intervals.

(Long Answers...5 marks)

Designing

3. BATIK

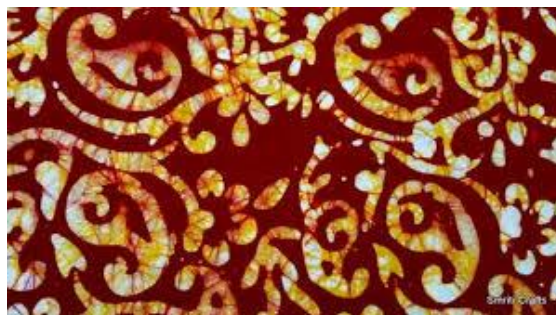


Introduction:

Batik is a process of creating a pattern or designs on cloth by wax resists technique. Indians used the resist method for printing designs on cotton fabrics long before any other nation. Rice starch paste and wax were used for printing on fabrics. Indian dyes were the only dyes available that could give bright and fast colours. The traditional Indian technique involved preparation of the design on a wooden block, which was then used to print the fabric with wax or starch paste. The cloth was then dyed.

Although batik had its root in India, this craft gradually spread to neighbouring countries like Indonesia, Malaysia, Thailand and Sri Lanka. The main characteristic of Batik is the crackled or veined effect. The fine cracks that appears in the wax, allows small amounts of the dye to seep in. It is a feature not possible in any other form of printing. It is based on the principle that water and wax repel. Different colours can also be used.

In India, batik was revived in the twentieth century due to the efforts made by Protima Devi, daughter of Rabindranath Tagore. India has all the raw materials and climatic conditions to do batik. Until recently batik process was used to produce dress materials and clothing, but today many artists are experimenting with new techniques using a combination of traditional methods. Beautiful murals, wall paintings, and articles are prepared. Batik has an international market which can be explored to its fullest for the benefit of the people.



HISTORY & ORIGIN:

Batik is a Javanese word and the island of Java is well known for this craft. They usually used colours of blues and browns and even make use of

instruments like T- janting and T- japs. India and China are some of the countries which are well known for batik.

DYES AND RESISTS USED:

For all batik printings, cold water dyes are used. Hot water dyes would melt the wax which is used as a resist. These dyes are used only on natural fabrics- pure cotton, silk, or rayon. These dyes are not used on anything with polyester or nylon.

These dyes are used in at least two ways. Small quantities can be made and painted or it can be dip dyed.

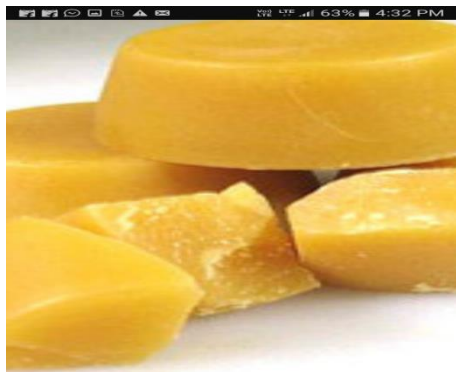
Making of the dye solution:

A required amount of dye powder is used depending on the material required. The dyes can be combined to make various colours. Mix these with a little warm water to form a smooth paste.

Resists used: The resists used for batik are usually wax, that is a mixture of paraffin and bee wax, starch paste made of rice powder, cassava plant, potato paste can be used, but the wax formula resists is the most commonly used. Batik wax consists of paraffin wax and bee wax in the proportion of 3:2. This gives a good amount of cracks.

The higher the percentage of bee wax the softer the wax, this gives less cracks. The higher the percentage of paraffin wax the harder the wax which means that more crackled effect. Paraffin wax is cheaper than bee wax but it does not stick to the material so a mixture of the two is used.

Paraffin wax is hard and brittle and white in colour. Bee wax is yellow in colour and is collected from the beehive.



Equipment's required:

- (i) Table – hard and broad surface.
- (ii) Pencil, Tracing paper, Drawing pins.
- (iii) Stove, vessels, wooden frames, brushes, Iron, newspaper, double boiler.



(iv) T-janting- a small copper vessel fixed with a bamboo handle, having a narrow spout through which the wax flows. Used to draw precise lines of wax onto the cloth.



(v) T-jap / block – a block made of thin copper strips and wire which forms intricate designs. It is used as a stamp to print wax designs on fabric.



(vi) Kalamkari Pens – made of thin bamboo ¼” thick and 7-8” long with an 1 1/2” long copper needle fixed at one end.



(vii) Old newspaper- used to protect the area near the wax.

(viii) Bowls, Buckets, Spoons, Measuring cups, Rubber gloves, are all basic materials and tools used for dyeing.

(ix) Colours- commonly used are cold water dyes, also naphthol dye are used.

Naphtol dyes are classified as fast dyes. These are the only cold water dyes available to home dyers which make them ideal for Batik.

(x) Vessels - Should be big enough so that the cloth can float easily. Long handled spoons are used for better stirring. During the waxing, gloves and aprons are used so that the hands and clothes are not stained with the dye.

(xi) Wooden frame – is used to pin and hold the fabric in place.

BATIK PROCESS

1) PREPARATION OF THE FABRIC:

All new fabrics contain a stiffening agent called sizing. The fabric has to be washed two or three times to remove the sizing (starch). It is then well dried and ironed and ready for the design to be drawn. The drawing is done free hand or with charcoal or even traced. The areas to be dyed are then marked. The fabric is then ready to be waxed.



2) APPLICATION OF THE WAX:

Take three parts of paraffin wax and two parts of bee wax and heat it in a double boiler. Be careful to regulate the temperature of the heat. Once it is melted to a temperature of 110°C and reaches liquid consistency, apply it on the areas where cracks are required and where you do not want the dye to seep through.



You can check that the wax is at the right temperature by testing it on a small area, if the wax is transparent it has penetrated the surface, if it is opaque it hasn't. Colour will not go on to the areas where the area is blocked with wax. The wax is applied with a brush or T-janting. After the wax is applied on the front side it is dried and then applied on the reverse side of the fabric. Allow the cloth to dry. Gently crush or crumble the fabric to obtain cracks. This will give the crackled effect.



3) DYEING PROCESS.

Cold water dyes are used for batik because if hot water dyes is used it will melt the wax. The cloth is dipped into the dye bath. The areas that are open will absorb the dye this is known as dyeing/immersion method. The dyed cloth is then put under a tap of running water so that all the excess colour is removed. It is then ready for dewaxing.



4) DEWAXING:

This is a stage in batik where the cloth after dyeing is put in hot boiling water along with a detergent and kept to boil. Keep stirring the cloth, this process is repeated two or three times. The stubborn wax that has not left is removed by ironing, where the cloth is put in between sheets of white or brown paper. This is known as *sandwich method*.



INTRODUCING MORE THAN ONE COLOUR:

If more than one colour is required, then after the 1st dewaxing, a repetition of waxing and dewaxing is done every time a new colour is to be introduced. It is important to use the lighter colours first. eg. If yellow and green are being used, first use yellow and then green.



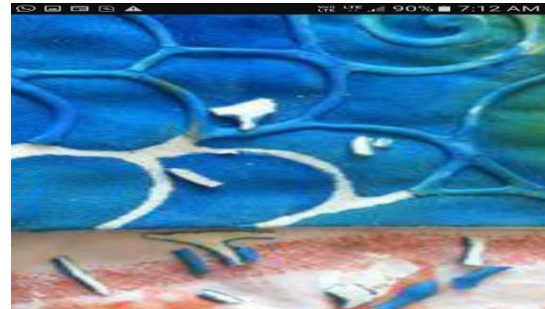
STARCH PASTE BATIK:

The Nigerians used a flour paste to act as a resist. The flour paste comes from the roots of the cassava plant. However wheat and rice paste can also be used. The resist paste is made by mixing together three parts of flour to two parts of water making a stiff batter without lumps. This is applied on the front of the cloth using a blunt knife. Leave the cloth to dry overnight. It should be kept flat while drying. As it dries the paste contracts, causing the material to pucker.

When it is completely dried, stretch it slightly to get cracks. Now paint slowly with sponge or a brush. More than one colour can also be used.

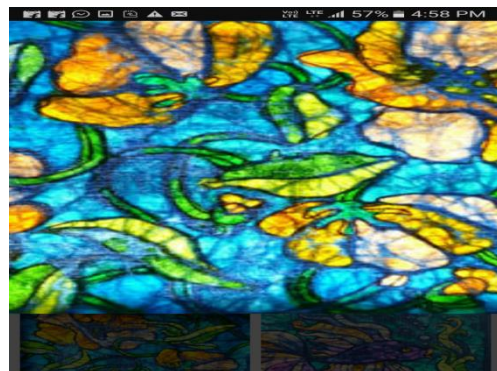
Allow the dyed batik to dry, now iron it to help fix the colour. Put the batik in a basin of water, for the paste to come off. Let it dry and then iron.

Liquid dye baths cannot be used to dip the fabric that is starched because the starch will get dissolved in the liquid dye bath and spoil the design. Therefore fabric inks or dye paste is used and applied with a brush. T-japs can also be used to apply the starch.



BATIK RUBBING:

Batik rubbing is also another art. This is done on a cloth with a candle and on any raised surface. The cloth is placed on the raised surface, e.g. carved furniture, stone carvings, metal embossed articles and rubbed with crayon or candle. Only the raised surface will be covered with wax. This is then dyed.



BATIK SPLASHING:

In splash method the wax is splashed with the brush or spilled onto the cloth.

BATIK DRY BRUSHING

The word 'dry brushing' expresses the very technique of applying wax on the cloth. One can get some lovely textures by this method. As the word suggests the brush should be free of excess wax. Before applying the brush to the cloth, squeeze

out the extra wax on a piece of newspaper or a rough piece of cloth (Do not make it completely dry). Now apply on the cloth with a gentle hand.

There are two different ways of dry brushing:

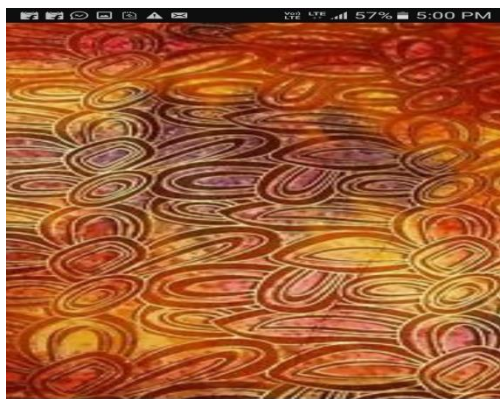
1. The dab method.
2. The cutout paper shape method.

Flat brush strokes are used for the cutout shapes to give soft, feathery effect while the dab method is used for breaking up larger areas. Brush can be twisted and turned in every way to get all sorts of brushing. The only way to understand the possibilities is to experiment. Dry brushing could be particularly good for painting landscapes or where shading is required. It is useful for those who want to use Batik as a medium for painting.

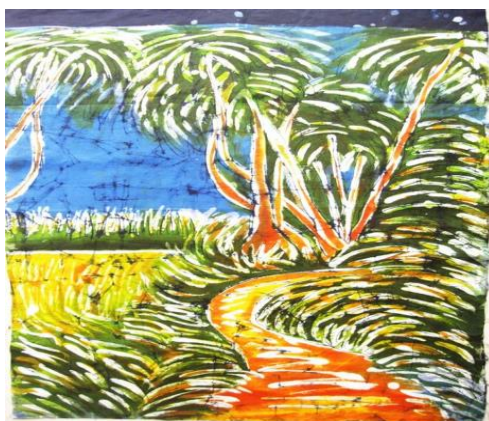
CANDLE DRIP

Direct drips from the candle can be of some amusement and fun. One can make all kinds of dotted patterns with the candle drips.

ETCHING: The removal of wax from the outline of a design is known as etching. This is done on both sides of the fabric.



BATIK IN COMBINATION WITH HAND PAINTING: (INSTANT BATIK)



This is an attractive way of introducing a number of shades and tints of colours to the fabric along with the batik cracks.

The batik process is the same.

- 1) The fabric is treated, dried, and the design is drawn.
- 2) The cloth is waxed leaving only the area to be dyed.
- 3) Cracks are given on the fabric and the cloth is dipped in the cold water dye bath

for dyeing. Remove from the dyebath and wash the surface. Dewax the cloth, wash and iron.

- 4) With the help of a brush apply the direct dye (fabric colour), a number of colours can be introduced in this manner.

USES OF BATIK FABRICS:

Batik looks very artistic on clothing as well as in the homes. Skirts, blouses, sarees, dress materials, curtains, bags, purses are all made and sold in the market. Indian batik is now world famous. Bed covers, table blankets, table runners even thick floor carpets are being widely used.



IMPORTANT TIPS FOR BATIK PRINTING:

1. Do not use synthetic material for batik, use cottons or silks.
2. Wash the fabric before use to free it from starch.
3. Stretch the cloth on a frame, the waxing will be easier and much neater.
4. See that the wax is kept hot while in use. It has to be at 110°C . Cold wax will peel off and the dye will penetrate inside.
5. Use a rough piece of cloth.
6. Make sure the brushes do not touch the bottom of the pan during the wax application because the bristles of the brush being synthetic may get burnt and blacken the wax.
7. Always use a double boiler for melting the wax so that it melts evenly and the wax will not burn and catch fire.

Useful information about Dewaxing

1. Do not boil the cloth too long in the same water or the fabric may reabsorb the loose dye and become muddy. Change the water 2-3 times to remove the wax.
2. Do not use very strong detergents while boiling or the colours will come out pale.
3. Another way of removing wax is to place several layers of newspaper above and below the cloth and iron it. But to be completely waxfree, it is better to give the cloth a final wash in very hot water.
4. Benzine and petrol will also do the trick except that it is quite a dangerous and tedious method.
5. Do not boil silk for too long as boiling will delustre the silk.

**** WATER COLOUR BATIK.(not for evaluation)**

Water colour batik is an amazing technique that combines melted wax and watercolours on rice paper/ fine blotting paper to create an exciting looking pattern.

(i) A design is drawn on the paper using a thin line waterproof black pen. Wax is applied on the areas which need to stay white. A little colour is also added onto some parts of the design as shown in the petals below.



(2) The leaves to the right of the drawing are painted. After they are painted apply wax to the leaves and then paint the entire background. See figure below.



(3) The last step is to apply the melted wax all over the background, let it harden and then carefully crumple to give delicate cracks. Then smoothen it out and paint a dark colour over the entire design. The dark colour settles into the cracks which gives it the authentic batik look.



(4) The final step is to iron in between sheets of white paper. As this is being done, the lighter areas that were waxed will emerge. It is always a surprise to see the beautiful and unique results of this process.



REVIEW QUESTIONS:

- 1) Why is batik called a resist technique of printing?
- 2) What is the main characteristic of batik printing and how is it produced?
- 3) What are the different resists used for batik?
- 4) Why are cold water dyes used for batik?
- 5) What is T-janting and T-jap in batik printing?
- 6) Why is preparation of the fabric important before the batik process?
- 7) What is dewaxing and how is it done?
- 8) What is starch paste batik?
- 9) Why are liquid dyes not used for starch paste batik?
- 10) Explain with an example how more than one colour can be introduced in batik.



4. STENCIL PRINTING

Stenciling is the craft of applying colour through a precisely cut out design onto almost any surface i.e. cloth, paper, walls, furniture, etc.

In China stencils were used by monks to produce some of the many images of the Buddha in the caves of the thousand Buddhism. Germanies decorated their clothing by means of stencils. Both Chinese and Japanese devoted attention to create elaborate and subtle designs.

The introduction of the stencil plate into Japan as a means of patterning fabric probably occurred at the end of the 8th century. Even though the technique was such a primitive one, the Japanese achieved amazingly fine details & intricacy of pattern with stencils. They also developed the idea of strengthening the fragile webs of paper with ties of human hair on fine untwisted silk.

Stencils were used in Europe during the middle ages to decorate church walls & wooden screens & to colour inexpensive popular prints of the Virgin Mary & the saints. At the end of the 17th century the French developed stencils for colouring the first wall paper which followed the luxurious contemporary art fabric wall hangings.

Few of the early settlers of New England were able to afford costly imported wall paper and furniture. Thus wall & furniture stenciling flourished in Colonial America. Artisans traveled throughout New England carrying their designs & dry pigments to make paint. Wall paper was manufactured locally & became inexpensive.

At the end of the 19th century architects revived the used of stencils for decoration of public buildings in Europe & US. Today stenciling is undergoing another revival as part of the present widespread interest in folk crafts.

Some of the earliest fabrics were produced by clamping the fabric between two boards cut with the patterns & which fitted exactly into each other. The stencil consisted of two layers of paper identically cut & between which the hair or silk threads have been sandwiched to produce a little extra strength & support. The

colour is gently pressed through with a large soft brush. Stencil printing can also be done by the stencil & subsequently dipping the cloth in a dye-bath.

Equipment's and material required

The stencil is cut in a special card paper or something similar which will stand up to wet dye paste and washing without going soggy. There are several suitable materials in the market. An art shop will sell stencil paper or thick acetate film. The latter has the advantages of being transparent and so it obviates the need for tracing.

You can prepare your own stencil material by giving some light weight coating or thick cartridge paper several coats of varnish, A liberal application of linseed oil followed by varnish makes a really long lasting stencil. . Another method of making stencil waterproof is, to rub the edges of the open areas of stencils with a candle, taking care not to tear the stencil.

Cut out the stencil shapes with either a very sharp scalpel type of craft knife or proper stencil cutters. These are little blades in different shapes make like pen, nibs. They will fit into a line cutters handle or an old fashioned dip pen holder, lines should be cut against a steel ruler a wooden or plastic one can very easily be cut by accident. A suitable surface on which to cut piece of heavy cartridge or a sheet of glass. Glass helps to achieve good clean cut edges but it tends to blunt the blades rather quickly.

Scalpels or stencil cutters can be used, for cutting the design and for bigger areas scissors can be used. Start off pushing the scissors through the card in the centre of what will be open space and then cut outwards, towards the edges of that space.

The stencil

The material for making a stencil should be thin and easy to cut. The following materials may be used for this purpose.

- Cartridge sheet
- Ivory paper sheet
- Bond paper
- Discarded photographic film negatives
- Discarded X-Ray film
- Plastic sheets

Devices for cutting stencils



Colours for printing with stencils

There is wide variety of colours ranging from modern synthetic colours to most primitive traditional variety of colours. Some of these will be briefly described.

Poster colours:

These are water soluble colours which are available in a wide range of shades in liquid form. They are best used undiluted. If they are used on wood, the application of several coats of polyurethane clear varnish, after the paint is quite dry, will render it waterproof and hard wearing as well as increasing the brilliance of the colours.



•Fabric colours

They are usually water soluble and are fixed by ironing the printed fabric from the backside with a hot iron. Fabric colours can also be sprayed and can be used on fabrics for stenciling and they produce a very subtle shade.



•Glass colours:

These colours are available in a wide variety, ranging from water soluble to gels, which produce a frosted or etched glass effect.



Tools for applying paints

Cotton pads

These are made by enclosing a small cotton ball in a white, coarse cotton rag and then tying it with a knot. This cotton pad helps in applying paint through the

Openings in the stencil while printing. It is advisable to have a different pad for each colour to be painted.

- Stencil brushes
- A stiff bristle brush (with trimmed bristles)



Other materials

- A sheet of glass to act as a surface for keeping the stencil paper while it is being cut.
- Pencils

- Thumb pins
- Adhesive tapes
- Clean rags
- Old newspapers
- Drawing papers
- Carbon paper
- Tracing paper
- A cleaning solvent like water, spirit etc.

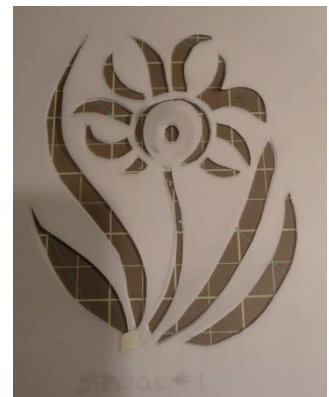
Working out a Design

First make a rough drawing of your design idea. This could be based on a Geometric pattern flower or leaf shapes, any sort of pattern but do not allow it to become fiddly because it will be impossible to cut out successfully, Aim for a bold chunky sort of design. Study the rough drawing you have made to see if there are any sections of the design which when cut out as open shapes will become completely detached from the



background. e.g. To this the letter 'A' cannot be cut out simply as it stands the whole of the upper triangular area will just fall out so some solution must be devised as to how to cut an instantly recognized, A shaped keeping the stencil still intact. Strategically placed cardboard ties must be left in the design. This gives stencil lettering its own distinctive style. Without the ties which leave gaps when printed it would be quite ordinary lettering. Similarly flower centre can't survive its even, it must be linked to the background by ties which can conveniently define the petals.

The ties should not be too narrow because they may break during the printing or cleaning processes. This is another reason for keeping the design bold it must be able to take quite substantial gaps and yet still read visually as whatever its supposed to represent.



Another way of designing a stencil is to use a silhouette shape. Here although it may at first glance look like an easier approach the drawing of the outline of the shape must be extremely accurate to convey the idea convincingly relies on the

solid image which must be really exact otherwise when printed it will be a meaningless blob object in a photograph you know it is a realistic image but the outside shape alone is quite insufficient for you to be able to identify it.

Understanding Ties

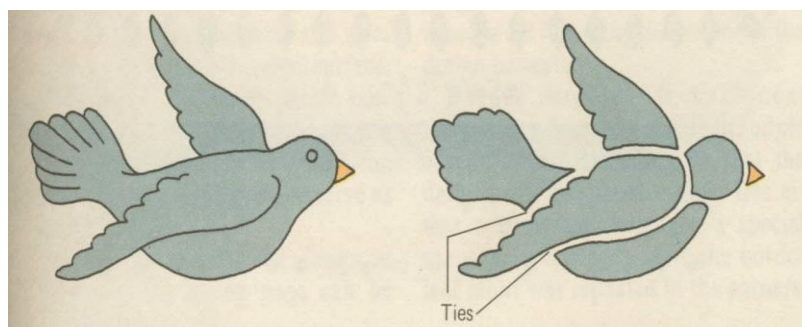
Ties are thin strips or thin boundaries around 1/8" wide, left while drawing a design for making a stencil that connects two or more edges of the parts of the design, or bridges the gap between the cut out areas of the design on the stencil. This would be clear from the following illustration.

The letter 'A' cannot be cut out simply as it stands as the whole upper triangular area will get separated from the background. This is prevented by introducing a diagonal tie in between the shape of alphabet 'A' itself resulting in a cut out that is an instantly recognizable 'A' shape, hence keeping the stencil intact. Therefore, the alphabetical stencils are devised strategically in their own distinctive style.



Now look at the simple drawings without any 'Ties'. If we cut out along the outlines of the original drawing of the bird, the different sections cut out as open shapes would become completely detached from the background and fall apart so that there would be only the remaining shadow of an unidentifiable bird.

We draw these wide strips or connecting ties specially to make a stencil of it. Now when this drawing will be cut out on a stencil card, it would give a perfect image of a bird with open wings.



Drawing with and without ties

Types of stencils

Positive stencil

In positive stenciling where the design will be coloured leaving background in the original colour of the fabric.



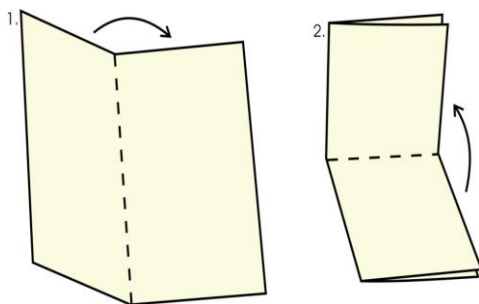
Negative stencil designs

So far only positive stencil printing has been considered. Try out the negative stencil idea too where you apply colour around the shape leaving the shape itself the colour of the fabric. This is just like the prehistoric cave man's idea of painting round his hand. You can use the pieces cut from a normal positive type of stencil as templates to develop an interesting design the dye colour can be gradually faded away from the negative image or you can enclose the template within some sort of frame. Use a weight or double-sided tape to hold the template in position when you print.



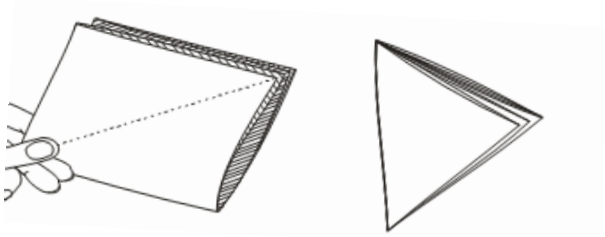
Symmetrical Stencil Designs

The stencil designs which have an axis of symmetry and look the same from all the sides are called symmetrical stencil designs. They can be cut on a paper by paper folding method.

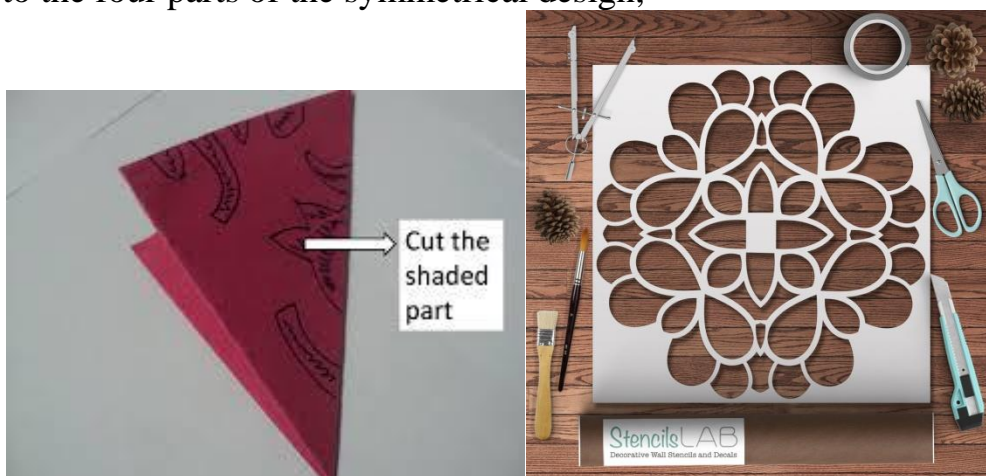


Symmetrical designs are very easy to draw and can be cut on a stencil. But they are purposely chosen depending on the area of the surface print and usage of the end product. For example they cannot be ornamented on a sari border or a formal wear, but they look good at the center of a table cloth or a dining sheet or a bed sheet. However, the symmetrical

designs can be used along with some repeated patterns printed by any other technique like block printing, screen printing etc.



The technique of drawing symmetrical designs is based on the Japanese art of origami. Square fold a paper and draw the symmetrical portion that is common to the four parts of the symmetrical design,



Drawing a symmetrical design for making a stencil on a sheet

The design can range from simple four petal shape to a complex eight sided polygon. We can also fold the paper into half and draw the design on the folded inner edge. Here we can draw suitable outlines derived from flowers, trees, or human or animal figures.

Complex symmetrical



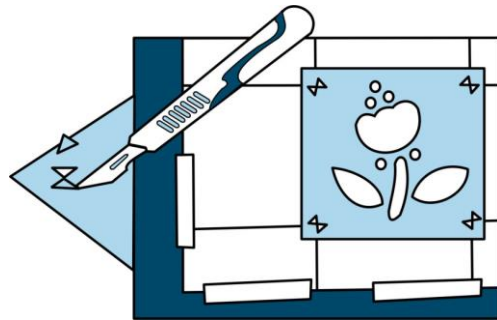
Complex symmetrical stencils can be produced by folding a square piece of paper two or more times, this delicate stencil will be symmetrical on all four sides. After the designs have been cut in the folded paper, it is important to transfer them to flat, waterproof stencil material for the final stencils.

Design can range from a simple four petal shape. Made by cutting a single shape along the long folded edge, being sure not to cut

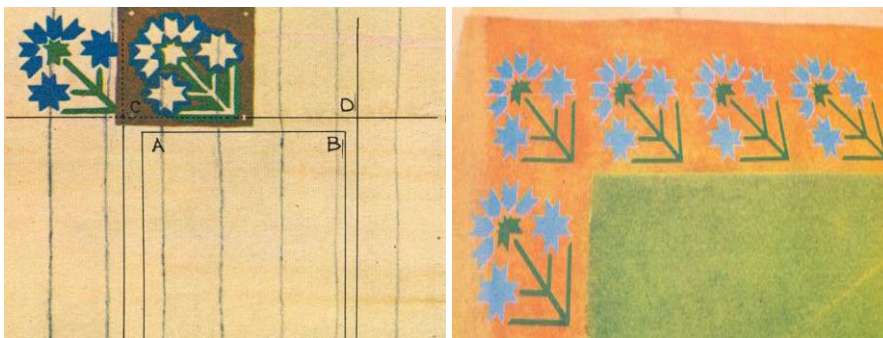
across either corner to subtle designs. Made from shapes cut into both folded edges.

A Repeat stencil

To print the stencil motif in repeat, mark with tailor's chalk on the repeat division on the fabric. With a sharp craft knife, cut little x-shaped, double triangular holes in the solid background area of the stencil card, to link up correctly with the repeat lines. X-cut holes at the corners of a stencil for repeat.



Extend this background area with taped-on card if it is too narrow. To position the holes, find the point at which repeat lines intersect and mark them on the stencil. Make two tiny crosscuts with a craft knife with each of these four corners, and with the point of knife, lift out the little triangles. The fabric is marked into the repeat divisions with lines of thread or tailor's chalk. As you lower the stencil on to the fabric you will be able to look through the little holes and see the corner crosses on the cloth.



Printing repeats of a stencil fabric with stenciled border repeat

The stencil making and printing process

The stencil making and printing processes as follows:

1. Selection of an appropriate design.
2. Transfer of the design on to the stencil material.
3. Cutting of the stencil.
4. Painting through the stencil on to the fabric.
5. Cleaning up of the stencil and brushes.

Selection of a design

An appropriate design suitable for the purpose of decoration in a particular context is first selected. The design can be taken from nature or from the surroundings or it may be based on some geometric pattern, Flowers, leaves, plants, birds or animals, cartoons, magazine illustrations, a piece of art or craft,

or one's own drawings, or alphabetical letters etc., all these are appropriate. A bold type of design is good for an efficient stencil printing output some bold types of symmetrical designs. Good, clear alphabetical letters can also be produced easily and quickly using a standard alphabet stencil sheet.



Animal silhouette design



Bold flower design

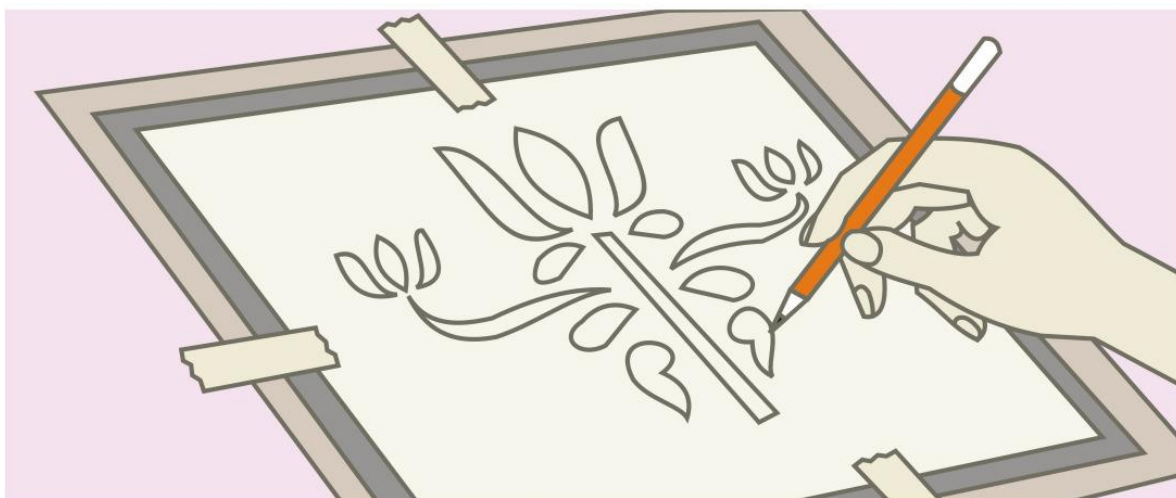


Symmetrical designs

A photocopier may be used to enlarge or reduce the size of the design according to the area of the surface.

Transfer of the design

The next step is to transfer this design onto a stencil card using a tracing paper or a carbon paper. A stencil card can be a suitable paper or plastic material. The stencil material may be fastened on to a glass sheet or a hard cardboard. The design outline is then transferred onto the stencil material using a carbon paper



Cutting out the design on to the Stencil

After transferring the design on to stencil card, the next step is to cut out the stencil carefully leaving the ties and a thick border around the outline. Keep the stencil sheet on the hard surface, like glass or a hard board, for easy cutting. Cut the entire design through the stencil board, using a stencil cutting knife or blade or a paper cutter. Try to make clean sharp cuts.



Printing with the stencil

The final and the most interesting part is to use the stencil to print a fabric. This is done by first securing the fabric on a rigid support (like a table) in a tight stretched state and then applying the colour with the help of cotton padding or stencil brush or a painting brush or even a tooth brush. Using any of these devices, the colour is applied evenly through the openings in the stencil onto wood, fabric, plastic, glass etc.

Cleaning the stencil

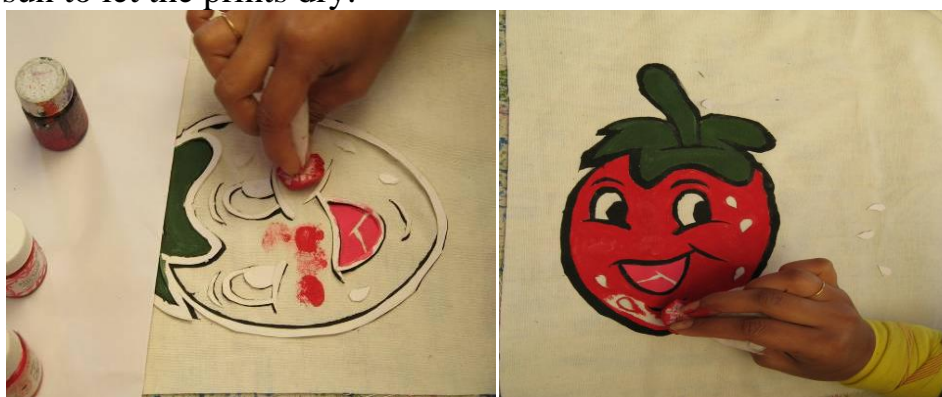
Finally the stencil should be cleaned immediately before the paint left on it dries up and becomes difficult to remove. For cleaning, place the stencil on a newspaper and wipe it with a rag moistened with water. Care should be taken that small bridges on the stencil are not broken while cleaning. Brushes should be cleaned thoroughly in solvent and then washed with warm soapy water.

Different techniques of printing with a stencil

Printing by dabbing

To start with, the washed and ironed fabric is placed on a rigid support in a tight stretched state and secured in this position with the help of pins. Then the stencil is placed at the appropriate location on the cloth. The stencil is secured with short lengths of masking tape on the cloth. A small amount of print paste is taken in a saucer and a sponge or cotton pad is dipped in it. The colour is applied by gently but firmly dabbing or pressing repeatedly over the open sections of the stencil by moving the piece of cotton or sponge firmly from outside the design outline towards the open areas.

The stencil is then carefully removed. The masking tape can be re-used for the next position of the stencil. After the printing is over the fabric is spread in the sun to let the prints dry.



Printing by dabbing

Finishing touch

Printing with brush

Beautiful designs can be stencil - printed on a wooden object using paint. First make sure that the surface is properly cleaned, otherwise the paint will not adhere to that surface.

Now start printing following the steps shown



Fix the stencil at desired place with the colours, and start painting

Choose suitable paint and with the help of adhesive tape hold the stencil in place.



Table ornamented with beautiful stencil printed Birds.



Spray Printing with Stencil

Spraying (as opposed to sponging fabric dye paste through a stencil) can produce a range of effects from a crisp clear-cut design to a freckled look or a delicately graduated, misty image. Four methods of spraying are described below:

- The first method employs an old toothbrush. The toothbrush is first wetted in paint of the right consistency. With the help of a spatula or a scale or a knife, the paint is spattered on the stencil over the cloth



- The second method makes use of a mouth-blown diffuser. For the diffuser to work successfully it will be necessary to thin the dye paste a little more than that used for toothbrush spattering.



Use of a mouth blown diffuser

- The third is a type of refillable spray used for casting a fine mist of water over indoor plants.



- Finally, the more professional approach is to use an airbrush, which you can buy from a model shop. An airbrush is more conveniently handled for giving misty effect to large printing areas.



New Ideas for Printing

Multi-coloured design with stencils

It is possible to use more than one colour within stenciled shapes by gradually merging one with the other, but you must bear in mind whether the two colours will produce the required effect when they actually meet.



Multi colour printing



Separate pad is used for different colours

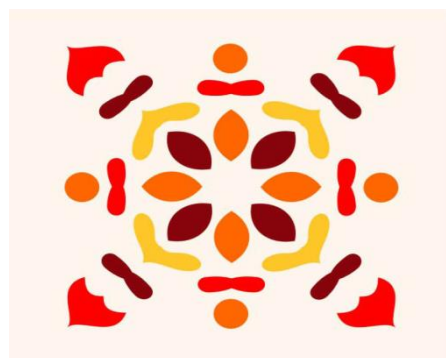
- Use a fresh piece of sponge for each colour, and use it only for that colour throughout the printing
- Try printing your design in separate colours. If yours is a large scale design this is quite feasible with stencil printing. The gaps you are not printing should be covered with paper secured by masking tape.

Printing with two or more superimposed stencils

More complicated multicoloured designs can be printed by separating the colour and making a stencil for each colour. By using several stencils one over the other, complicated designs can be produced without the insertion of too many ties in just a single stencil.



A set of superimposed stencils

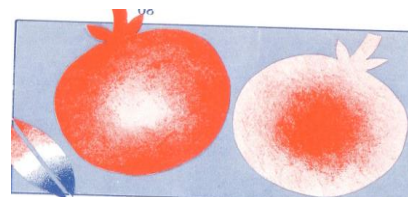


A multi coloured design

When a number of superimposed stencils are to be used, allow the paint of the preceding stencil to dry completely before positioning the next stencil to paint. Thus with the use of two or more tactically designed stencils beautiful multicoloured patterns can be printed, keeping one over the other one by one.

Shading effect in stenciling

Try heavy colour in the center of a shape fading out towards the outer edges. You can vary the textural quality of the print by using a coarser sponge or a ball of crumpled paper or cloth.



Some very easy stenciling

Techniques consider the negative template idea. Instead of cutting out a shapes look out some objects whose flat leaves are an ideal e.g. Just weight down the leaf in position on the fabric and apply colour around it.

For an extremely simple stencil-type of techniques use masking tape on its own. This will confirm you solely to straight lines but some interesting designs based on squares rectangles and triangles can be developed. Pin the fabric out as usual and stick pieces of masking tape directly on to it to cover all the areas you wish to protect from the dye paste. Apply the colour and when it is sufficiently dry peel off the tape. More tape can be stuck colour in a new arrangement and fill the container how to connect it to the cylinder and how to actually operate it. It is incidentally very easy and great fun. The manufacturers suggests that the consistency of the paint dye and so on should be like milk. Extremely subtle graduating effects are obtainable with this instrument. Make sure you clean up the nozzle and dye container thoroughly after work.

All cloth stenciled with fabric dye paste will need to be fixed according to manufacturer's instruction when it has fixed out completely.

REVIEW QUESTIONS

1. What is a stencil?
2. List the tools and materials required for the stencil printing method.
3. Name five types of colours that can be used in stencil printing.
4. Explain the process of stencil printing briefly.
5. Why it is necessary to clean the stencil after printing.
6. What are ties? Describe their importance.
7. What are symmetrical designs?
8. What is printing by dabbing?
9. Which paint will you apply to stencil print on a wooden surface?
10. Name the three methods of spray printing.
11. Define negative stencils.
12. What do you mean by superimposed stencils?
13. Explain the technique of creating repeat prints with a stencil.
14. How spray printing can be done with the stencils? Describe the technique.



INTRODUCTION

History of Screen Printing

Screen printing was a technique first used by the Chinese almost 2000 years ago. Human hair was stretched across a wooden frame to create a screen; stencils made from leaves were then attached to the screen. This is considered to be the first application of screen printing.

Later the Japanese adopted the screen printing process and used woven silk to create mesh and used lacquers (a hard glossy varnish) to make stencils. The use of silk, where screen printing got its alternative name "Silk Screening".

When it comes to apparel printing, screen printing is the technique industry standard for superior quality. Most graphic art sold in major retail stores have been screen printed. The process is designed to make garment bold in appearance yet cost effective at the same time.

What is Screen Printing

Screen printing is a technique that uses a woven material and a stencil or an art work (positive) to make a print onto a surface; paper, t-shirt, stickers, vinyl, wood etc.

One screen (mesh stencil) is used for each colour to be printed – screens must be lined up (registered) and printed on test sheets to ensure that all the colours line up correctly. Inks are then pushed through the screens one colour at a time onto the apparel. Finally, each piece is run through a large dryer to cure (dry) the inks.

Equipment's and Material Required

- Wooden frame (of required sizes)
- A piece of fabric nylon, polyester and silk (mesh)
- A stapler and staples
- Water resistant tape (gum tape)
- Scissors
- Hammer
- Exposing unit
- Hairdryer
- “C” or “G” clamp
- Squeeze
- Palette Knife
- Cotton waste
- P.V.A solution (screen coat)
- Dichromate solution (sensitizer)
- Ink
- Bleaching powder
- Reducer



Screen printers use a silkscreen, a squeegee, and hinge clamps (movable joint) to screen print their designs. The ink is forced through the mesh using the rubber squeegee; the hinge clamps keep the screen in place for easy registration.

Advantages and Disadvantages of Screen Printing

Advantages of hand screen printing

1. **Less investment cost:** as there is no machine required in hand screen printing and it is possible to print in a shorter space; the total investment in hand screen printing is comparatively lower than other screen printing system.
2. **No risk:** no heavier instrument or machine tools are used in hand screen printing. So there is no risk
3. **Multi -colour design can be printed:** In hand screen printing procedure various colours can be used effectively
4. **Less floor space required:** as no heavier and bigger machines and related tools are used, the hand screen printing requires lower space to install
5. **Suitable for small scale production:** if you want to install a screen printing factory for your local business, you can choose the hand screen printing at the initial stage as it requires lower cost or investment.

Disadvantages of hand screen printing:

1. **Slow production rate:** as no machine is used and all the process are done by manually the production rate becomes lower than other printing process.
2. **Small scale production:** if you want to own a big screen printing factory or if you have some bigger plan in future the hand screen printing is no for you because this kind of printing process provides you lesser production rate.
3. **Labour intensive process:** A labour has to work manually and all the process of the hand screen printing is done by the hands. So it needs more time to produce a product.
4. **Fastness properties are average:** As all of the process is done manually, the fastness properties of the printed fabric is not permanent.
5. **Difficult to maintain even penetration and print paste.**
6. **Skilled man power is required.**

SILK SCREEN PREPARATION

Making a Frame

A frame is constructed out of planed soft wood which should be free of large knots and should not be warped. About 8 feet of the above mention wood is required. Saw the wood into two 31 inches length and two 18 inches length (or as per the requirement of frame). Join each corner by first applying wood working glue and then hammering in corrugated fasteners (nails). The frame should be absolutely flat on the table when it is finished. Smoothen the surfaces of the frame by polishing it with sand paper.



How to stretch a mesh on frame

Terylene is recommended for screen making. Other fabrics like nylon and cotton organdie can be used but they are not as tough and durable as terylene. Nylon tends to become baggy when covered with dye paste and cotton organdie tears easily.

1. Cut a piece of mesh a few inches larger than a frame.





2. One person pulls the fabric tight along one side of the frame while the other staples a straight line.

(TIP: When pulling and stapling fabric, it is best to work from one side and then the opposite, to keep the tension and alignment of the fabric. Do not pull too tight or

the fabric will tear.)

3. Now pulling tightly across the frame, staple along the opposite edge starting from the centre and working your way out.

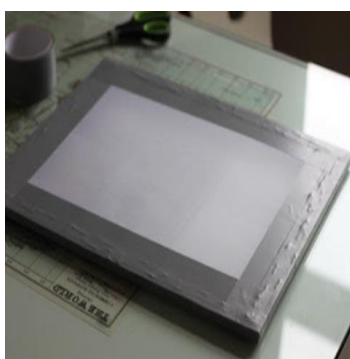
4. Pull the fabric towards one of the remaining sides and add 4-5 staples in the centre.

5. Repeat on the opposite sides with 4-5 staples in the centre.

6. Work back and forth from one side to the other until both sides are stapled completely.

7. Lastly stretch the fabric out diagonally from the corners and staple any remaining openings.

8. Tap any raised staples and then trim off the excess mesh with a knife.



Remember – the screen needs to be VERY tight. Be sure to pull tightly to remove all the ripples and bubbles in the mesh or will not have a nice crisp print.

COATING OF SILK SCREEN

Mixing Of Photo Emulsion

Add 2 tablespoons of water to sensitizer and shake well. Then add the half-full bottle of sensitizer to the entire bottle of photo emulsion (screen coat). Stir until the sensitizer is combined. Place the lid back on the bottle and shake well.

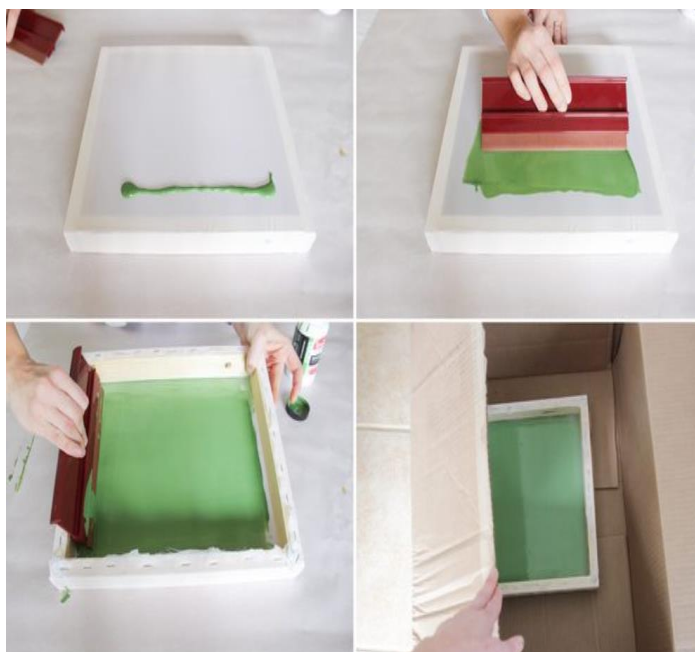
TIP: when the sensitized photo emulsion is not being used it can be stored in refrigerator for 3-4 months. The cool temperature slows the



degradation that naturally occurs once the two components are mixed.



Spread Photo Emulsion On The Screen



Pour a generous amount of photo emulsion along one side of the screen. Pull the emulsion across the screen using the squeegee. Pull in both directions until one side is coated. Turn the screen, over and, while keeping it elevated with one hand, use other hand to spread the emulsion evenly on the other side. Scrape any excess emulsion back into the bottle. Repeat this process until there is an even amount of emulsion on both sides. Place the screen, top facing down in

a dark location and let the emulsion dry completely. Drying time can take up to 12 hours but this can be done by hairdryer or under the fan. Make sure to wash the squeeze immediately after use.

WARNING: Photo emulsion is light sensitive and will start to change colour and harden when exposed to light. Make sure to work quickly when spreading it across the screen. And do not keep it in a room that has any light source while it dries.

EXPOSING A SCREEN



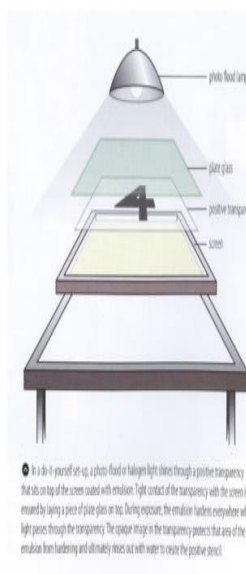
Here, a box type table is used which contains 3-5 florescent tubes. At the top of this box a glass sheet is fitted, a switch board is provided with two buttons.

Directions For Using Exposing Table:

1. Once the photo emulsion is dry, the screen is ready for exposing.
2. Switch on a tube inside the exposing table and keep the positive or transparency (with the design printed on it) on the glass. The readable side should be upwards.
3. Keep the screen on the positive (fabric side in contact with positive) ensuring that, the positive is within the emulsion area. Then put off the light immediately as the light is only for the purpose of such adjustments.
4. Keep a book of a suitable size inside the screen and a sufficient weight on it. A bag filled with sand may be used for this purpose
5. Switch on all the tubes and expose the screen for a required period of time (i.e. minimum for 10 minutes & maximum for 12minutes). Once the timer is done put off the light and remove the transparency.

Process

Exposing & Rinsing Out a Screen



One of the great things about screenprinting is that you can easily create a setup for it at home similar to the diagram to the left.

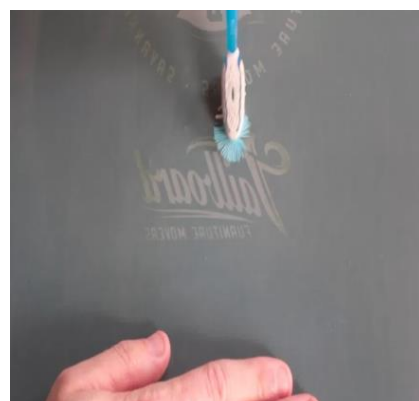
Our shop exposure unit is a bit more advanced with bigger, better bulbs and a vacuum to maintain optimum contact between film and screen.

Also, the light comes from below the screen on our unit.

Wash Off Photo Emulsion from Design



1. Place the screen under running water
2. Let the running water wash off the photo emulsion that did not harden
3. Gently scrub the design with a



toothbrush to fully remove the emulsion from the design.

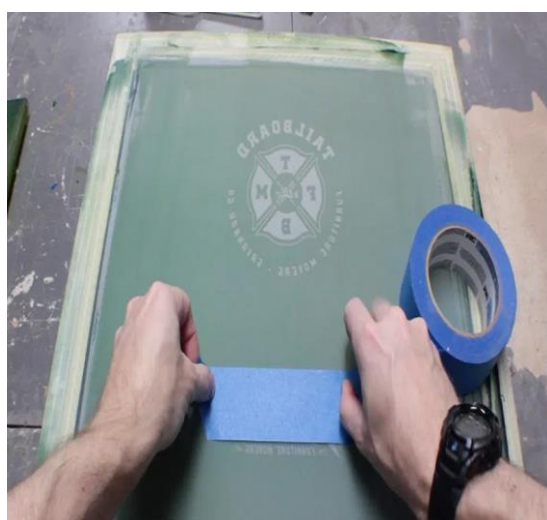
4. Dry the screen off completely.

STEPS BEFORE PRINTING

Block Out

While applying the photo sensitive emulsion or the film, the screen is never completely covered. In such areas, holes in the screen fabric are left open. It is very much essential that, only the printing area should remain open and the non-printing area remain closed. For this purpose the mixture of screen coat and sensitizer is applied over such areas (non-printing area). Precaution has to be taken to avoid spilling of the emulsion on printing areas. After this procedure is complete the screen to be dried thoroughly.

Masking The Screen



Masking the edges of the screen is important. This has to be done whichever type of stencil you may use. It makes a permanent seal around the screen and stops dye from smudging out. It also forms the dye reservoir.

Cut four lengths of gumstrip to fit the inner edges of the screen. Fold each piece lengthwise and wet the gummed side thoroughly with a damp sponge. Place the gum strip inside the frame along the right angle between the wood and the mesh. Push the gumstrip with a soft dry rug;

make sure it is sticking properly. Turn the screen over and stick lengths of gum strip over all the outer edges of the frame half on the wood and half on the mesh. Allow all the damp gumstrip to dry out completely. Instead of gumstrip masking tape can also be used.

Printing table



For screen printing the table should be preferably long. Whether you are operating on a stout kitchen table or on a specially made printing table, the table covering is the same as for block printing. First cover the table with a thick blanket on a piece of carpet under felt. This is stretched tight and is kept wrinkle free each edge is then secured to the underside of the table top which staples and drawing pins. A sheet of heavy plastic is stretched over the felt and fastened in the same way rubber sheeting also can be used instead of

plastic for more professional screen printing.

Screen clamping

After the screen is ready, it is clamped to the printing table. The “C” clamp or “G” clamps are used to fasten the screen on to the printing table.

Registration

The registration guides are placed on the printing table to facilitate uniform and exact feeding. These guides are small pieces of cards placed at right angles. It is done after taking measurements and finding proper location.

PROCEDURE FOR SCREEN PRINTING



Pour a generous amount of ink across one side of the screen where the design is. Using the squeegee spread the ink evenly across the screen with a very little pressure. Once the ink is evenly distributed, apply more pressure with the squeegee and pull the ink across. The pressure should be constant during the whole travel of the squeegee. The angle of the squeegee should be between 45° to 50° . The

pressure on the squeeze, its angle and speed of the print-stroke should be constant for each individual print. Repeat this process of spreading the ink 3-4 times in alternating directions. Carefully lift up the screen and place it off to the side.

CLEANING OF SCREEN

Remove all the paper from the screen. The cleaning up process should be carried out as soon as finishing of printing. Never let dye dry up on the screen or on the squeeze as printing ink becomes hard and is extremely difficult to remove it. Put the screen on some newspapers and with a palette knife or blunt knife, scrap as much as dye and put back into the pot. Scrap and wipe the squeeze to. Ideally use a cold water spray or sponge the screen and squeeze thoroughly and repeatedly with cold water. Then wash both screen and squeeze with detergent and warm water, rinse and allow it to dry.



Review questions

- 1) Name any five equipment's required for screen printing.
- 2) State the advantages of screen printing.
- 3) Write down the disadvantages of screen printing.
- 4) Write a short note on making of a screen frame.
- 5) Name the fabric recommended for making a screen.
- 6) Why are cotton organdie and nylon not very good fabrics for making a screen?
- 7) Write down the steps to be followed in stretching the mesh on frame?

- 8) Write the process of spreading of photo emulsion on the screen.
- 9) Briefly explain the directions for using exposing table.
- 10) How photo emulsion can be removed from the design?
- 11) Name the steps to be done before printing process.
- 12) What is meant block out?
- 13) Why it is necessary to mask the screen?
- 14) How is printing table prepared to carry out screen printing process?
- 15) Why is it necessary to clamp the screen to the printing table?
- 16) Name the equipment's used to clamp the screen on printing table.
- 17) What is registration?
- 18) Briefly explain the screen printing procedure.
- 19) Write a note on cleaning of screen.
- 20) It is necessary to do registration before starting printing process. Why?

PRACTICAL

Block printing-----15mks

Fabric sample size 8"x8"

I. Prepare a sample of a block print design using potato or carrot blocks.

❖ Materials:-

The following materials are required for potato or Carrot block printing work:

1. Large potatoes or carrots
2. Kitchen knife or craft knife
3. Paper towels
4. Black marker pen or pencil
5. Fabric paints, poster colours, or Ink pad
6. Brushes
7. Sponge
8. Craft paper Or fabric



❖ Steps:-

1. Cut a potato, length-wise, into half.
The two raw surfaces will be used as the stamps for printing.



2. With a black marker or pencil draw the shape of the block you wish to make, on the flat surface of the cut potato.

3. Simple shapes can be used for making blocks, like a star, a fish, moon, sun, triangle, a smiley face etc. Use the kitchen knife to carve the background away, so that the design is at least 1/4 inch above the surface of the potato.



4. Once you finish cutting out your design, remove any additional moisture with a paper towel.



5. Pour various colours of paint on the paper plates or use a ink pad
6. Dip the potato block in the paint or on an ink pad and gently place the block onto the paper or fabric and press. Allow to dry. You should try the printing on paper first.



II. Prepare a sample of a block print design using fruit blocks

❖ Materials:-

1. Fruits (apples, pears, oranges, unripe bananas, lemons)
2. Knife
3. Chopping board
4. Poster paint
5. Plastic plates or trays
6. Sketch paper



❖ Steps:-

1. Clean the fruits. Wash and towel dry.
2. Prepare the fruits and vegetables by cutting or trimming them.

Here are some suggestions:

Apples and pears- cut lengthwise in half;

Bananas- cut in half;

Oranges and lemons- cut crosswise in half



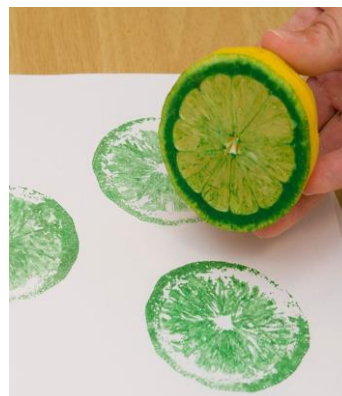
3. Put paint in shallow plates or containers.
- Prepare your sketch paper as well.



4. Dip a fruit in one color of paint, making sure that the bottom is evenly-coated with paint.



5. Press the fruit firmly on your sketch paper.



Go ahead and use the other fruits to paint.

III Prepare a sample of a block print design using any 5 vegetables and fruit as blocks.

(For material and steps follow the above instruction)

Below are some example of different Fruits and vegetable prints.



CARROT



LADY FINGER/OKRA

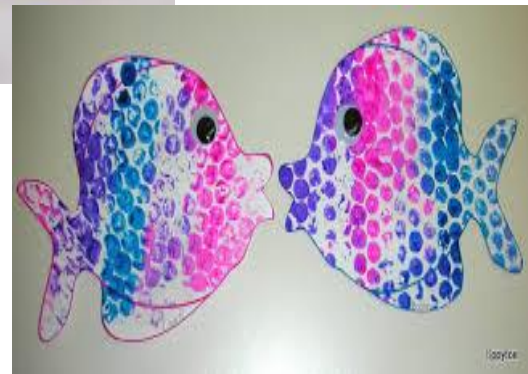
CAPSICUM



**CORN****CELERY****PEAR****APPLE****CABBAGE****BROCOLI****FRUITS AND VEGETABLES**

IV. Prepare a sample of a block print design using found blocks.
(Below are some examples of found blocks)

BUBBLE WRAP



BALLOON



FORK

PLASTIC BOTTLE BASE



V. Prepare a sample of a block print design using nature (leaves, twigs, flowers, shells, etc.) as blocks.

(below is the example of the design created by leaves as a block)

❖ MATERIAL:-

1. Leaves
2. Paint brush
3. Acrylic paints
4. Fabric or paper
5. Colour palette

❖ STEPS:-

1. Take fresh leaves, wash and dry it. Then with the help of the paint brush apply colour on it.



2. Stamp the leaf on the fabric or paper according to your design.



3. Then complete your design and let it dry.



FLOWER



SHELL

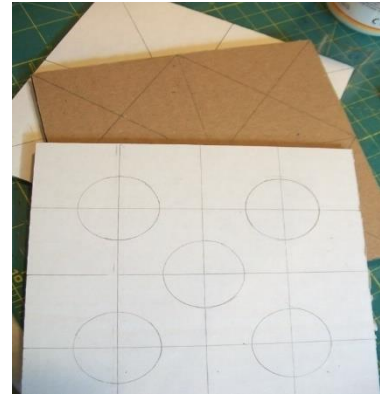
VI. Prepare a sample of a block print design using a mounted block (macaroni/Pasta/dal/ matchsticks) block.
(E.g. the following material is to create pasta or spaghetti print blocks)

❖ **MATERIALS:-**

- ❖ Assorted types of pasta. Include spaghetti, if you want to try some of the inlay designs.
- ❖ -Cardboard cut into 4" or 6" squares
- ❖ Craft knife
- ❖ Ruler
- ❖ Fevicol or White Glue
- ❖ 1" foam brush/sponge
- ❖ Small plastic container or colour palette hold the colour, or glue.
- ❖ Pencil or pen
- ❖ Plastic or other table covering

1. Cut measure and cut cardboard into squares.
2. If you would like to try an "inlay" design, use a pencil and clear plastic ruler to draw some simple geometric designs.

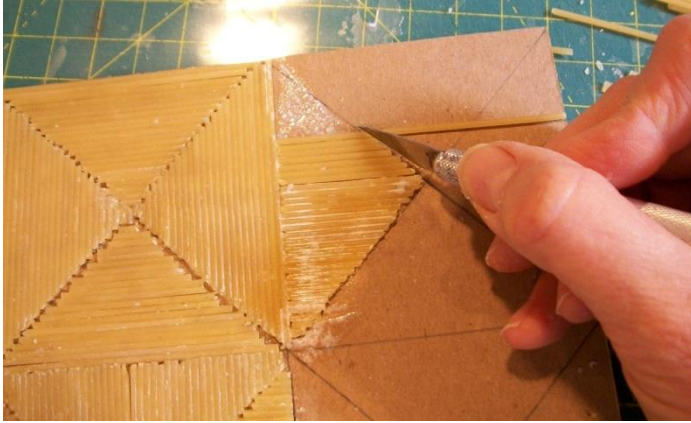
3. If you are using shaped pasta, spend some time arranging designs before gluing them down.



4. Cover your work area with plastic to protect it from glue drips.
Glue the pasta to the cardboard squares.
Work on one section of the design at a time, brushing the fevicol/white glue only on that part of the cardboard.

Inlay Designs Using Spaghetti.

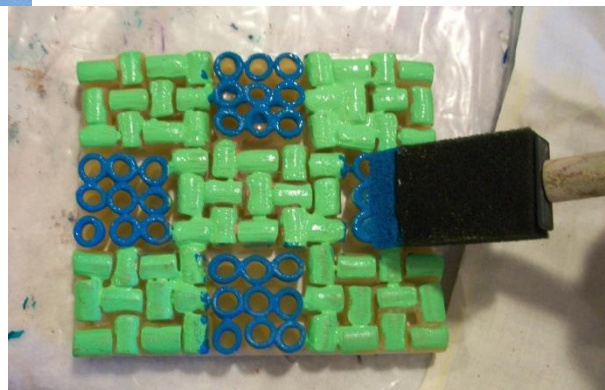
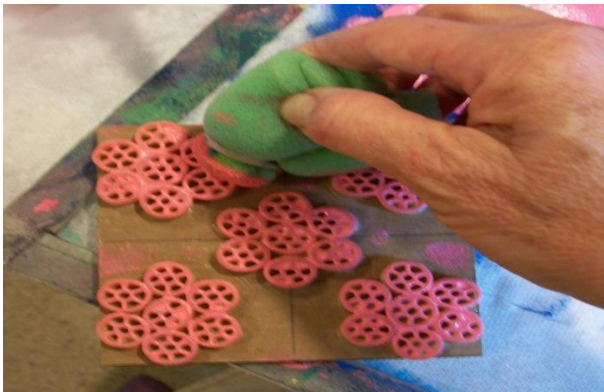
5. Try some “inlay” designs using spaghetti.
Glue parallel segments of spaghetti to the cardboard to build-up the patterns.



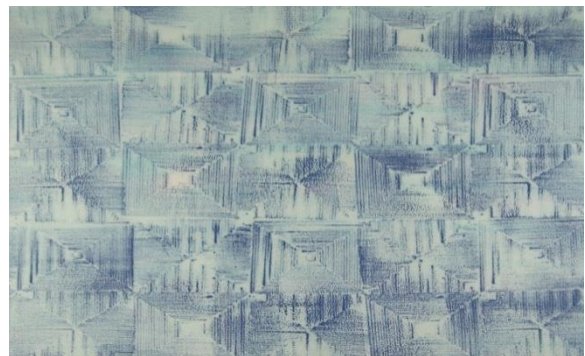
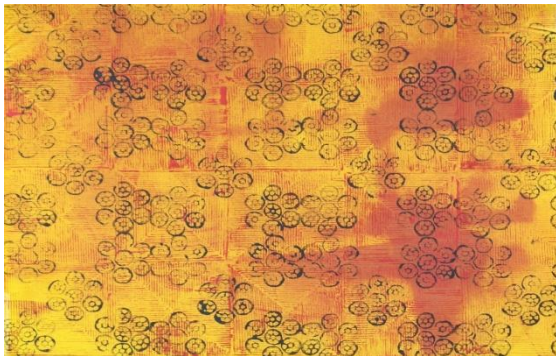
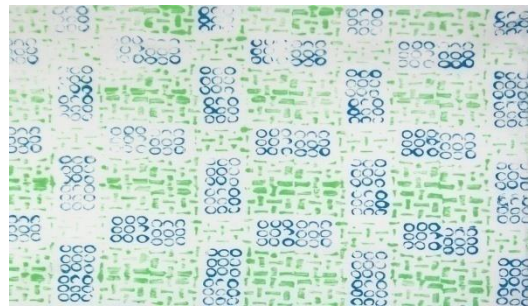
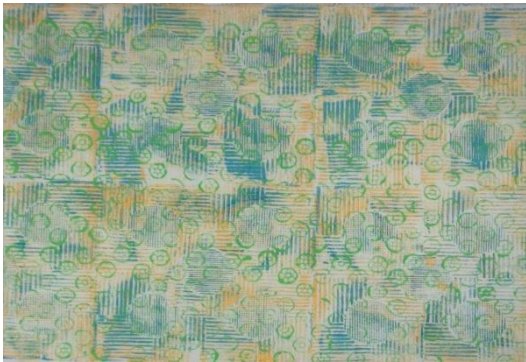
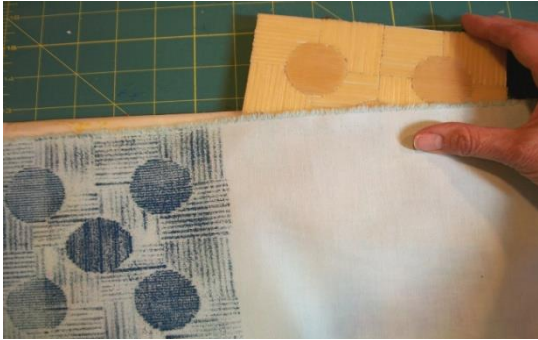
6. Seal your blocks by brushing them with at least one layer of white glue or gel medium.



7. Apply colour with the help of a paint brush or sponge.



8. Stamp the block on the fabric and get the print.



VII. Prepare a sample of a block print design using a nail head block.

❖ **MATERIAL:-**

1. Paint
2. A container to put your paint in and some sponges or material to make 'stamp pads'
3. Paper
4. A selection of nuts and bolts
5. An apron
6. A damp cloth to wipe hands.

STEPS:-

1. Wipe the nut bolts or nails.
Apply paint on it.



2. Stamp it on the fabric



VIII. Prepare a sample of a block print design using a lace block.

❖ **MATERIAL:-**

1. Lace
2. Scissors
3. Measure tape
4. Rolling pin
5. Glue
6. Acrylic paint
7. Paint roller
8. Tray
9. Paper
10. Ruler
11. Pencil

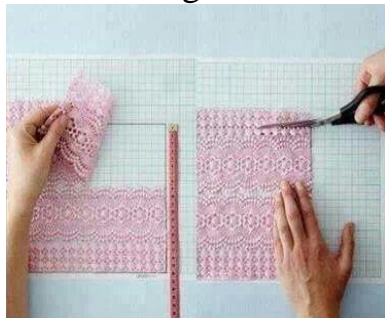


❖ **STEPS:-**

1. Take the measurement of the rolling pin.



2. According to the measurement of the rolling pin cut the lace.



3. Then wrap the lace around the rolling pin and fix it with glue .



4. Apply paint with the help of paint roller on the lace fabric.



5. And finally roll it on the fabric.



IX. Prepare a sample of a block print design using a thread block.

❖ **MATERIAL:-**

1. Wool/cotton yarn
2. Fabric paints
3. Fabric /chart paper
4. Hard cardboard/a flat wooden square piece
5. Paint brush



STEPS:-

1. Wind the yarn on the cardboard or on the wooden piece to form an abstract design.





2. Apply the paint on the block with the help of a paint brush.
3. Stamp the block on the fabric/chart paper.



- X. Prepare a sample of a block print design using a glue block.

❖ **MATERIAL:-**

1. Glue gun or fevicol
2. Flat wooden surface
3. Acrylic paints
4. Fabric

❖ **STEPS:-**

1. Turn on the glue gun and let it heat up. Place the tip of the heat gun lightly to the surface and press the trigger while drawing interesting designs onto the wooden surface. Or you can also use fevicol. Let the glue dry.



2. Apply acrylic paint with a paint brush or with a spray paint and stamp on to the fabric. And let it dry.



XI. Prepare a sample of a block print design using a block of crushed paper.

❖ **MATERIAL:-**

1. Plastic sheet / paper
2. Ink pad /colour palette
3. Fabric /paper

❖ **STEPS:-**

1. **Prepare the fabric.** Iron out all the wrinkles. Crumple the plastic sheet or crush the paper.
2. Press the crushed paper or plastic sheet in the ink pad or in the colour palette.



- Stamp the paper on the cloth and create a design.



XII. Prepare a sample of a block print design using coir blocks.

XIII. Prepare a sample of a block print design using a wooden block (1colour).

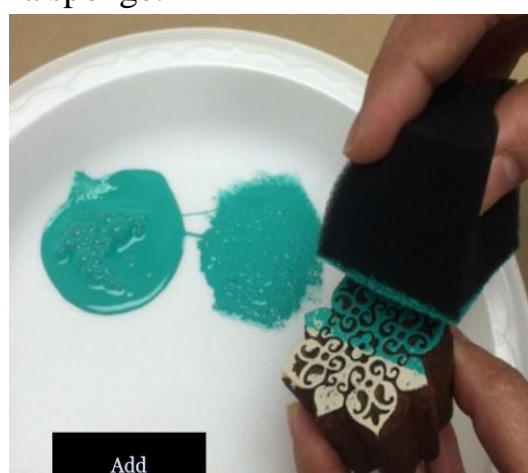
❖ **MATERIAL:-**

1. Wooden block or stamp
2. Fabric
3. Acrylic paint or Fabric paint
4. A fabric medium if you want to dilute acrylic paint
5. Small bowl for the paint
6. Paper towels/ sponge
7. A large pinnable surface/ a large piece of cardboard

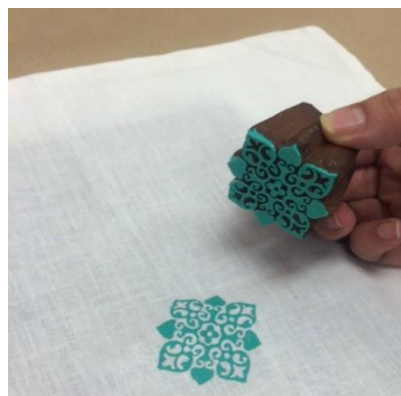


❖ **STEPS:-**

1. Prepare the fabric. Iron out all the wrinkles.
2. Take the paint in a plate or a palette. Apply the paint on the block with the help of a paint brush or a sponge.



3. Press block firmly onto fabric and lift to reveal the stamped design.



XIV. Prepare a sample of a block prints design using a wooden block (2 colours).

(For material and steps follow the above instruction)

Additional colour can be added to the design by using another block



XV. Prepare a paper sample of a visiting card/logo/envelop etc of vegetable or fruit blocks.

(Follow the above instruction of fruit and vegetable block)

Tie and Dye



Tie & dye process require simple & minimum of apparatus it can be a very useful as well as a playing profession. This simple craft, as the name suggests is a simple method of tying the cloth in various places & dyeing it. The process involves three important stages: Folding, isolating (by tying the cloth), & dyeing. With the practice & imagination one can achieve a variety of patterns. The knotted, sewn or tied parts of the fabric resist the dyes in varying degrees, depending on the way you tie the cloth & tighten it. The tied part will retain the original colour of the fabric. Further tying after dyeing will resist other parts of the fabric. Thus one goes from the light colour, to the darkest shade achieving four to five colour in between.

The right fabric to use:

The most important thing is that the cloth you choose is fast in colour & the dyes you choose, are also fast colours. This way you will be able to make use of the cloth for various purposes & be able to wash it also. The dyes work best on materials such as cotton, mulmul, cambric, poplin, linen, handloom khadi, & silk.

The dye penetrates well into above mentioned fabrics & comes out evenly so that the pattern is clearly viewed. thick material like canvas can also be used , provided you remember that the thicker the material the larger the pattern to be made, so that there is a bigger gap between each knot to allow the dye to enter the cloth properly.

Other synthetic materials like nylon, non-crease materials are not good for tie & dye as they do not absorb dye, some of the extra glazed cottons also tend to become patchy after dying. so avoid any synthetic fabric. so before doing anything else, wash the cloth thoroughly & rinse out all starch from the cloth so when you dip in the dye bath the colour will be properly absorbed by the fibres & the fabric that comes out will be even & bright instead of dull & patchy. It is best to work with wet fabric as it is much easier where definite folds have to be given

Tying agents:

A few tying agents which are commonly used are thick or thin thread for creating thin spidery stripes or web pattern. For the net pattern the thread is wound around the cloth in a fairly widely spaced spiral, then it is wound to & fro to make an X spiral, this technique is usually used for the centre of the circular pattern. Coarser thread is useful in achieving wider stripes, one can use this especially on thick material where the pattern is large & the folds are thicker. Strips of cloth can also be utilized for this purpose.

Rubber bands are useful for binding the edges of the material, they are also useful when you want to secure marbles, buttons, seeds & stones etc. in the cloth.

Cloth pins, metal or plastic ones can be used to grip the cloth with different folds to produce dotted pattern. Make sure the grip is good, otherwise the pattern may not be very clear. One can combine the tying & the clipping method depending on the design.

Plastic bags or sheets are useful for a little advanced type of work. The large areas to be left undyed are wrapped in plastic sheets for protection, & then tied. The encased material is completely isolated. After one or two dye baths one may open the isolated areas & tie that part & dip it in a contrast dye bath.

Different types of basic folds:

A-regular fold.

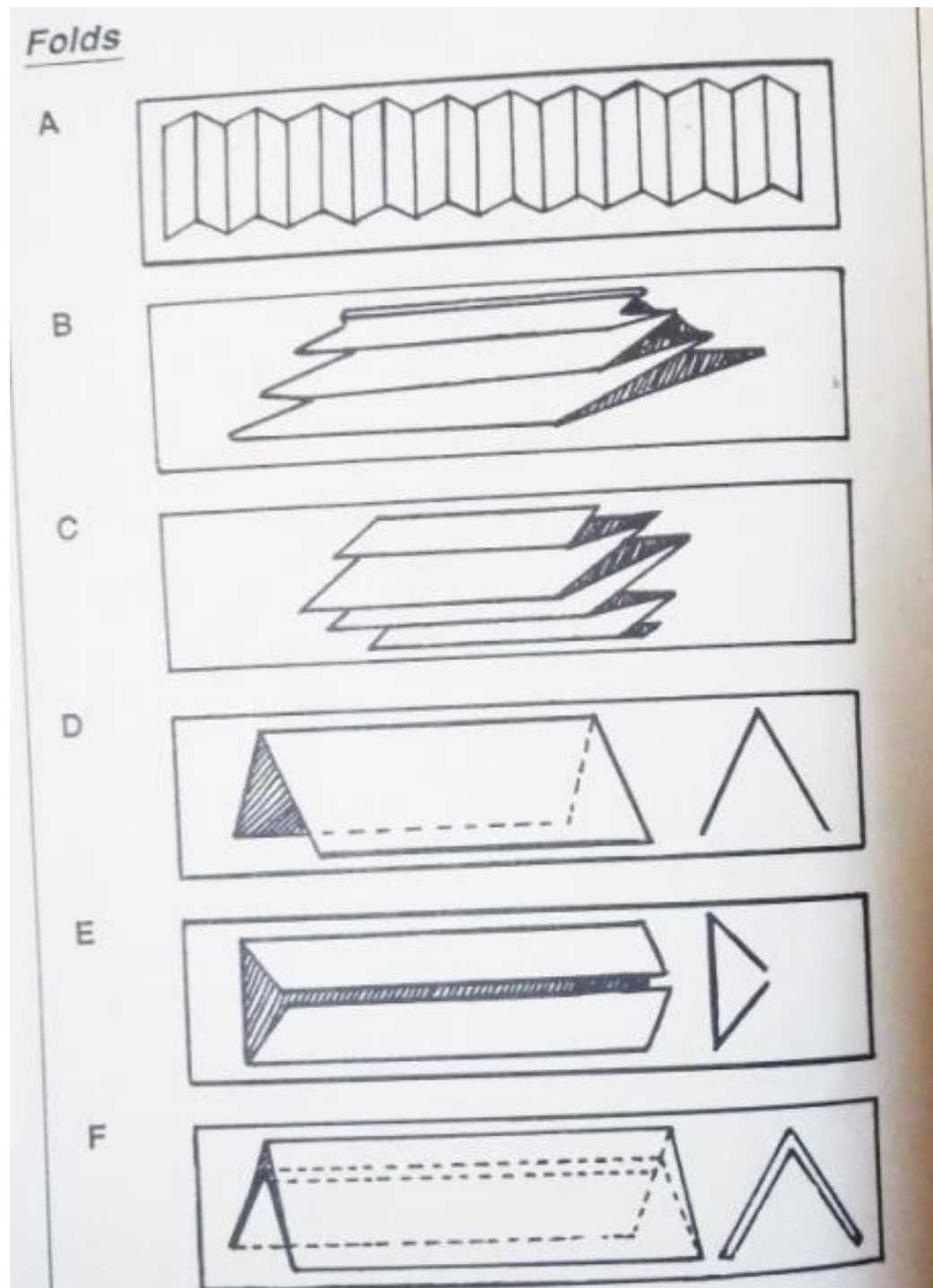
B-Expanding regular fold increasing downward.

C- Expanding regular fold increasing in the centre.

D-Centre fold.

E-Centrally joined fold.

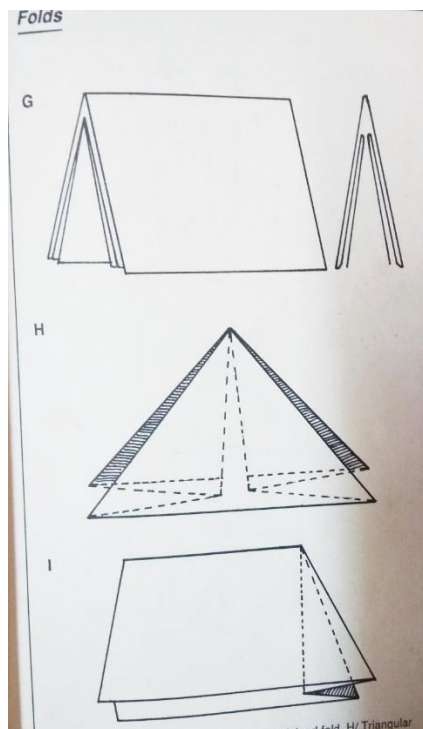
F-Combined centre & Centrally joined fold.



G-Double combined centre & Centrally joined fold.

H-Triangular fold.

I-Concealed corner fold

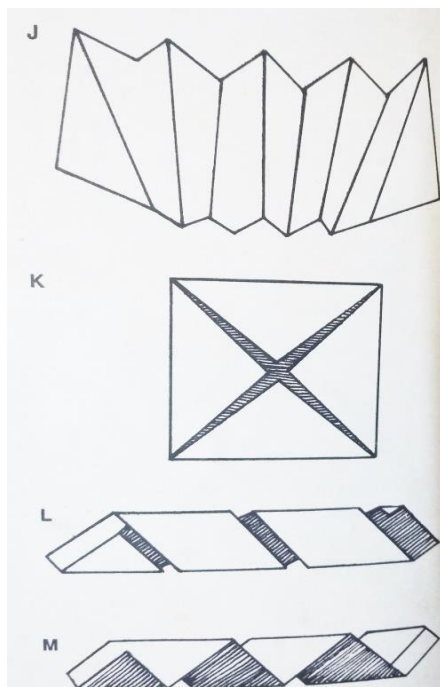


J-Fan fold.

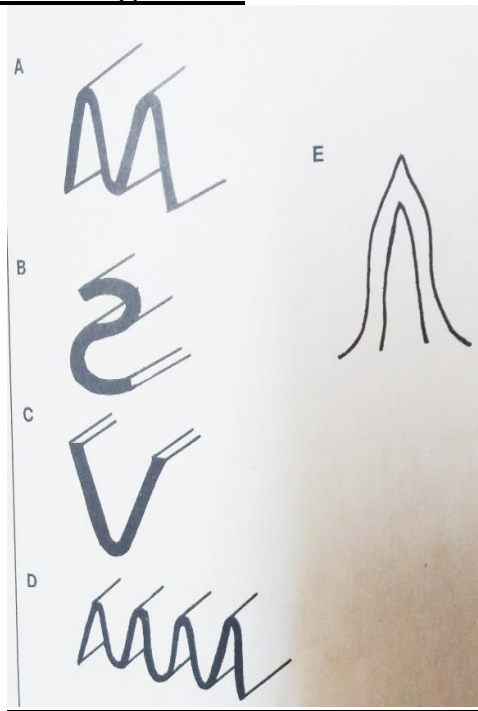
K-Envelope fold.

L-Spiral fold.

M-Zigzag fold.



Isolating holds:



- A- "M" hold.
- B- "S" hold.
- C- "V" hold.
- D- "Regular" hold.
- E- "Spear" hold.

Folding & tying.

Stripes - Fold the fabric into a narrow strip of accordion pleats and bind at regular intervals, or Put the fabric flat on a table. Pleat and fold it uniformly in lengthwise direction. Tie it with a yarn at regular intervals, to get widthwise lines after dyeing. For horizontal lines, pleat and fold the fabric widthwise. Roll the fabric from one corner to the diagonally opposite corner and tie at regular intervals to get diagonal lines.

Vertical Stripes



Horizontal Stripes



Diagonal stripes:



Marbling – Crumpling up the fabric and binding it into a tight ball. Dye, then untie crumple and bind again before dyeing with a second colour.

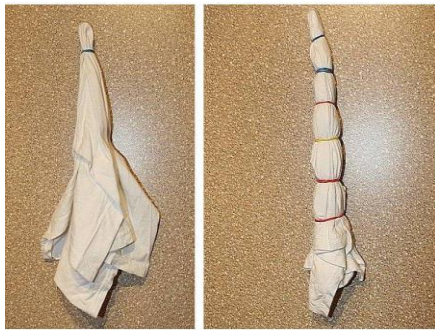


Circles & sunburst:

Take a clean white t-shirt and lift up part of it by picking up a point from, at the centre and twist it to form a point & then bind it tightly round using string to tightly bind it at various points. The thickness of the thread you use & the space between the threads as you go round the fabric will all affect the final pattern. Each time you start binding leave a length of thread loose so that you will be able to tie it to the other end when the binding is completed.

While tying t-shirt in concentric circles using rubberbands, wrap the first rubber band around the gathered shirt, right below the part you held when you lifted it.

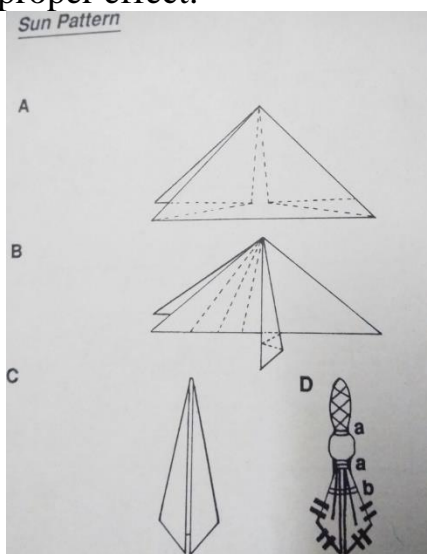
Use several more rubber bands down the length of the t-shirt. Space them about 1- to 2-inches apart.



© Sherri Osborn



Sun pattern: For sun pattern, precision is necessary, or else you will not get the proper effect.



A-Take a square piece of cloth& make a centre fold& then a triangle fold.

B-Make two pleats of the top right & then two pleats of the left layer.

C-Turn over the cloth & make similar pleats on the reverse side. If precise pleating is done it should look like drawing in diagram C. To get better folds it is advisable to wet the cloth first.

D-Tie strings as shown above at “a”, give the first dye bath & tie the top part in a spiral with a coarse thread & tie again at place marked “b”

You may open one or two knots between each dye & give further colour this way you will achieve different colours like for e.g. if you use white cloth & give first a yellow bath. Open one or two ties where it was white previously & tie a few of the yellow areas & give a dip in the blue dye bath. Green occurs at areas which have yellow & light yellow. Thus you will get white, yellow, blue & green.so always keep in mind the various possibilities. For instance you can add clothespins if you want to, on the lower portion as shown in diagram

E. It will give a lovely dotted effect.

Floral border:

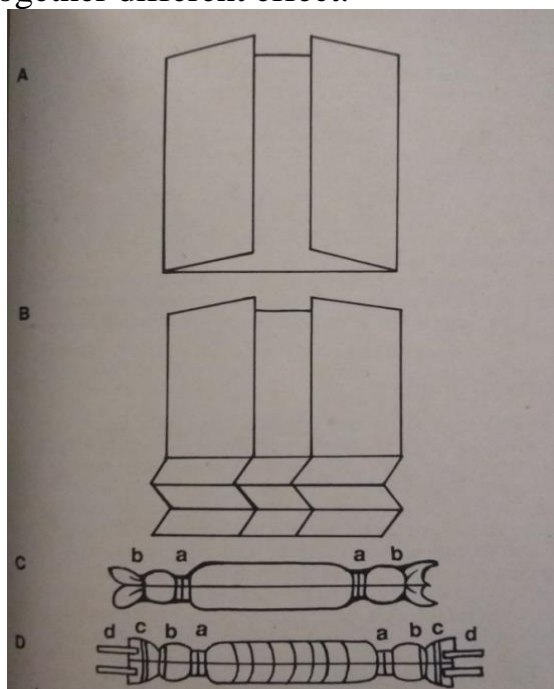
A-Take a longish piece of cloth & fold in a centrally joining fold.

B-Fold again in the regular pleat fashion.

C-After pleating tie at positions ‘a’ & ‘b’. Take note that the ties at position ‘a’ are wider than while the ones at position ‘b’ are thinner.

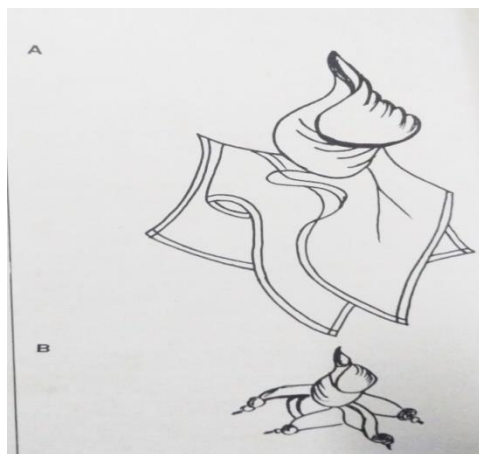
D-After first dye bath put two more ties at positions ‘c’ & ‘d’ or you may attach clothes pin on the outer edges to get the dotted effect as shown in diagram D & dip into second dyebath

-Additional ties in the centre can be given & further dyeing may be done to get an altogether different effect.



Knotting:

The simplest approach is to lift up the centre of the sample twist the material round & tie it into a knot. Knot should be hard enough to resist the entry of dye into the fabric at the time of dyeing. This produces circular motif. Try knotting at each corner in the same way too this will produce semicircular effect at four corners. Try design shaped rather like a flower.



Another way of knotting is to fold the fabric into narrow accordion pleats to form a long thin rectangle, use cloth pegs to hold it together temporarily then tie knots along the length of the piece. This will produce irregular striping effect. It is essential to remember that tie & dye is not totally neat, tidy ordered craft, the technique really seems to have a secret power of its own, so don't try to over organize it.



Tie in objects:

Tying objects in the material will produce other kinds of motifs based roughly on a circle. The final pattern depends upon the shape of the object being used. If you are doing on large scale on a bigger or thicker material, select pebbles about the size of the tennis ball. Tennis ball, ping-pong ball can be used provided you don't object its changing colour. Smaller objects also should be used. Pull the cloth up around it & bind it round with string securing it tightly. The cloth that is stretched over the objects is obviously exposed to the dye. The way in which the binding thread causes the fabric to pucker up & resist the dye

can create some very unexpected designs/patterns. Different shaped objects will produce widely different designs. Experiment with things like coins, buttons, lengths of wood, bottles or cans, etc.

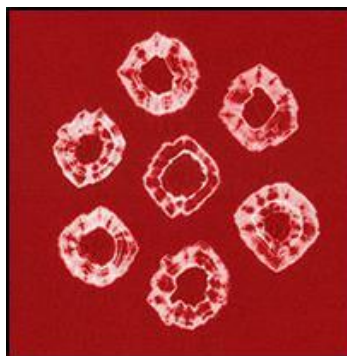
Another fascinating idea is to enclose a coloured item that is not dye fast with the intention of allowing its colour to seep out into the fabric during the dying process, this will produce different coloured centre to the motif.

For small scale designs, you will need a number of little objects, grains of rice, dried peas, lentils, etc. along with slender needle, fine nylon thread, & a degree of patience.

Choose a design which is not too complicated, or can do a Geometrical pattern, but keep it simple. Each tiny object will produce a minute, irregular star like motif. This can be used very effectively to outline a design making a kind of dotted line, or it can also be the main design.

Because little objects such as rice is too fiddly to tie into the material individually, it is much easier to sew them in. thread a needle & tie a knot in the thread about 4 inches from the end. Pass the needle through the fabric from the wrong to the right side so that the knot & the trailing ends are underneath. Hold a rice grain in position on the wrong of the material & lightly bind the thread round the grain a number of times on the right side, then right next to the grain, insert the needle bringing it out again where you want the next grain to be.

Continue all the way round your design like this. Don't space the grain too far apart because then the design won't read as a dotted line, but only as some dots spotted randomly around. If it helps you, one could mark intervals at which a grain must be inserted with little cross lines. Finish off by tightly knotting the thread to the trailing end left at the beginning.



Oval effect:

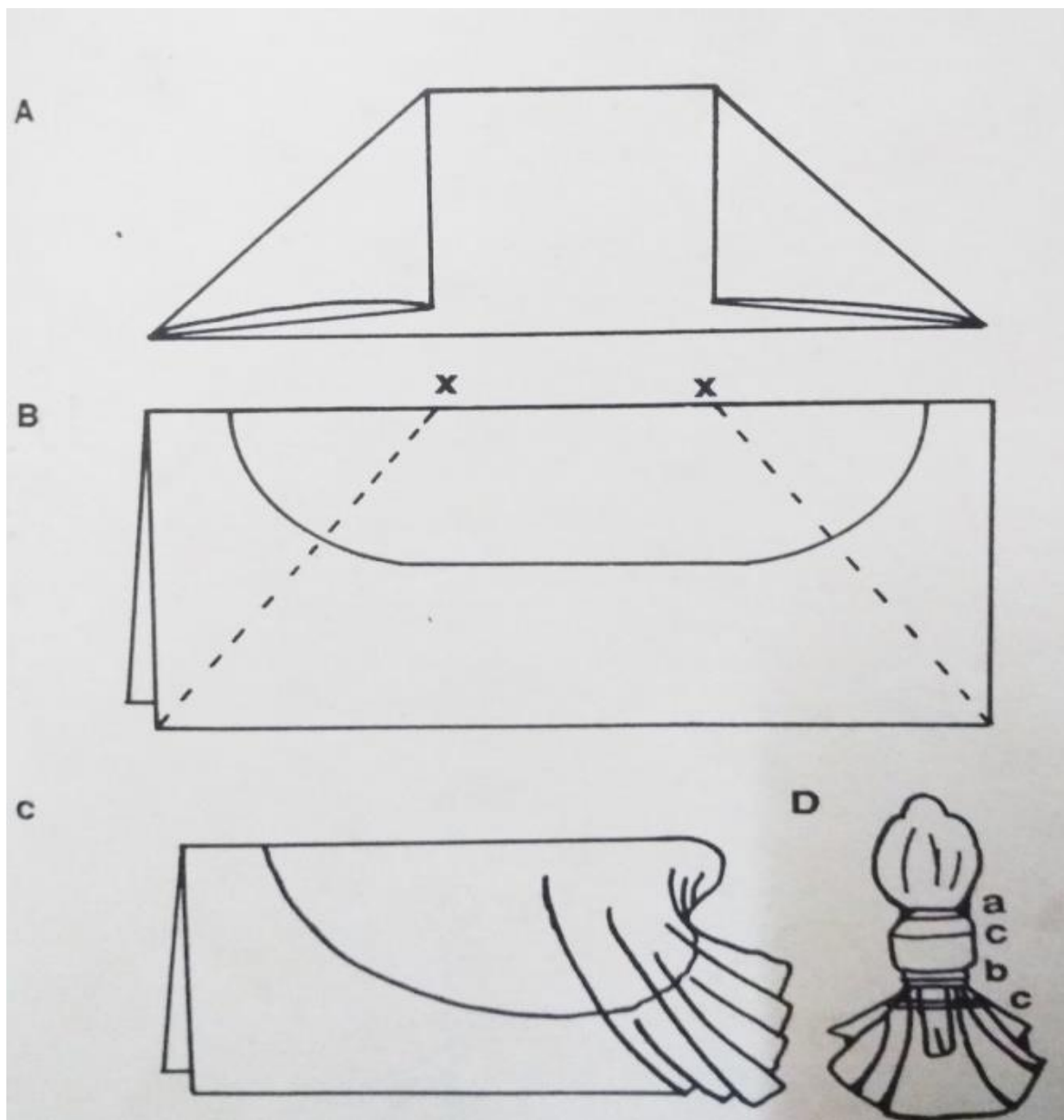
A-Take an oblong piece of cloth & fold from centre horizontally & turn in the corners.

B-Unfold the corners & draw dotted lines & taking X-X as centre draw two quarter circles. make sure circles are not too near the edge of the cloth or tying may become difficult. Now draw a straight line to join the two quarter circles.

C-Gather material around the pencilled line.

D-Bind the cloth on the gathered pencilled line at 'a' leave space & tie again at 'b'.

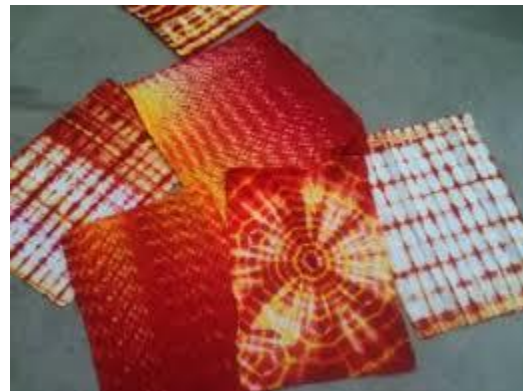
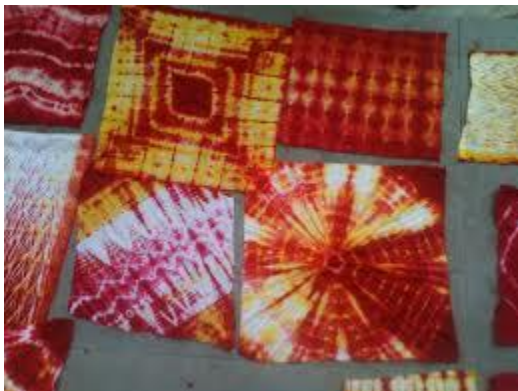
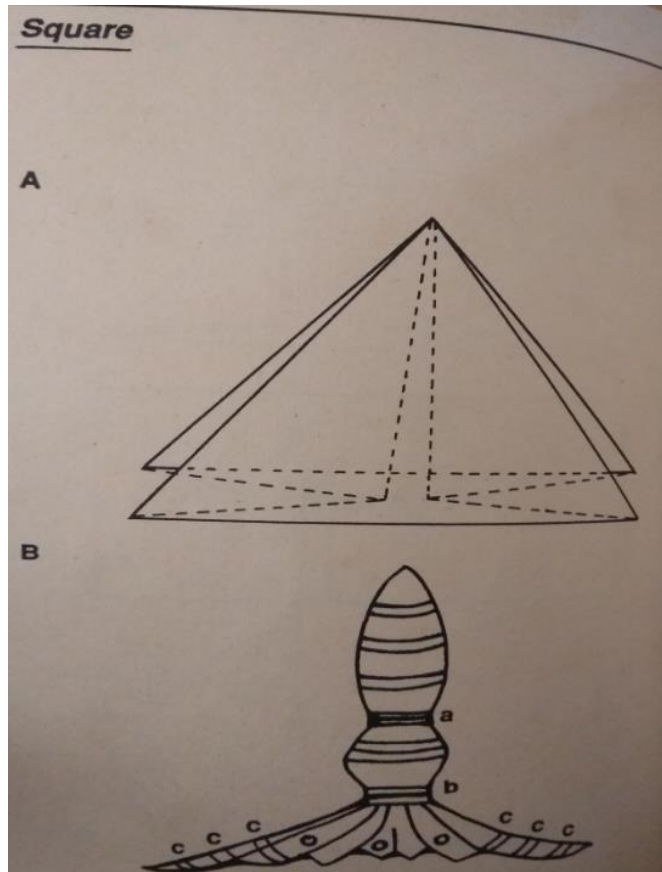
Give first dye bath, bind cloth at 'c' and dye in contrast bath.



Square:

A-To make a square take a square piece of cloth and make a centre fold & then insert the two sides to make a triangle.

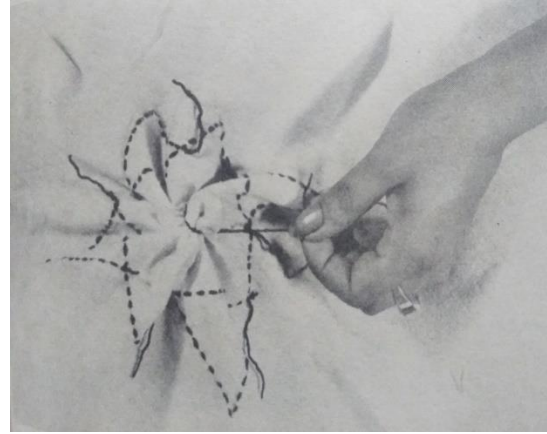
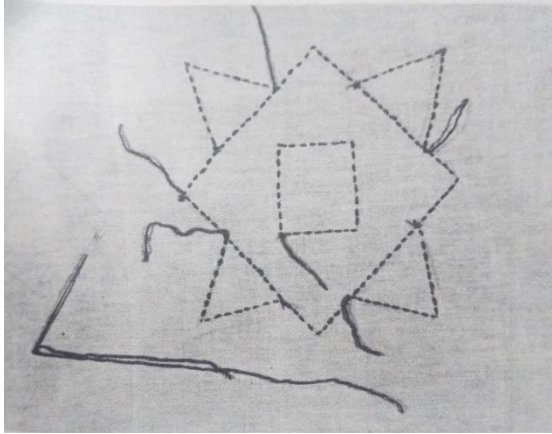
B-gather the folds together & tie knots at 'a' and 'b'. Give the first dye bath and then the isolating thread on the top part or on the lower edges as at 'c' to get stripes or you could make small circles at the lower edges & dye it in the second dye bath.



Tritik (Stitch tie & dye):

A strong thread is first sewn into the fabric with a running stitch(stitch with loose ends)First the square was sewn by leaving the thread.Each of the triangle

is sewn separately with loose thread at one end to tie with. Pull the thread from the loose end to draw up the cloth tightly & then tie the thread firmly, wrapping it two-three times to keep the fabric drawn up securely. It is essential to knot before & after drawing up



Fan shaped pattern:

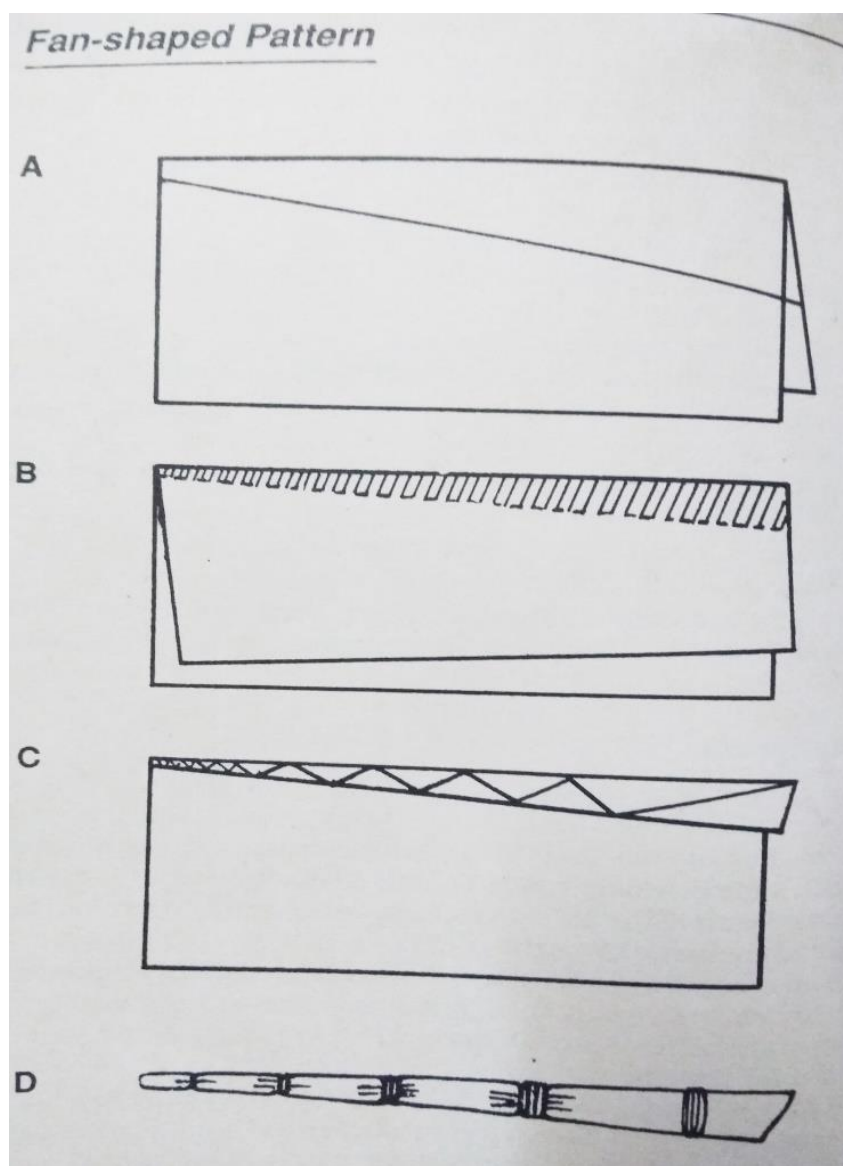
Take a cloth which is a little rectangular-make a centre fold & mark.

“A”-A slanting line where first fold will come.

“B”-Top layer to be folded to follow the centre line fold. Shading indicates the main fold.

“C”-Fold rest of the material on top of the first pleat to match. Turn over the material & fold the other side in the same manner.

“D”-Bind the folded cloth at intervals. Gaps between each tie increasing as you move upwards.



Tying for second & subsequent dyes.

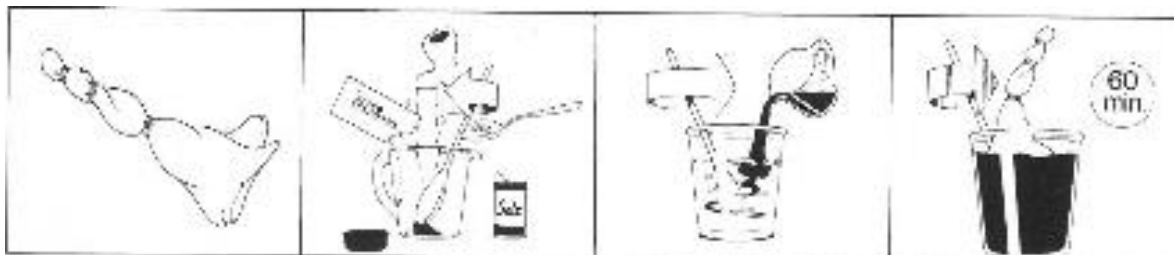
If the cloth is going to have more than one dye bath it is better to isolate not only the undyed areas but also the parts which are to take second or subsequent dye bath also. This is one way of achieving bright & pure colours, e.g. Blue

colour will come pure blue only on white & not on areas where there is colour like yellow or any other colours.

The third stage in tying is the 'holds', the material is held in different ways while dying. Each hold is easy to execute.

Dyeing:

This is the final stage, involving the dipping of the tied fabric into one or more dye baths, depending on the colours needed for the pattern.



Mix the dye solution by pouring the dye powder into a measuring jug and mix it with little of warm water & form it into a smooth paste

Pour the contents of the jug into a bigger bucket or similar vessel. Make sure that there is enough cold water in the vessel to cover the garments/samples and to ensure free movement. Add salt & lime juice, Stir the solution to make sure it is properly mixed

Wet the tied garments/samples before putting it into the dye bath. Stir continuously for 10 minutes taking care to keep the garments/samples submerged. Then stir occasionally for the next 50 minutes. When the hour has elapsed remove the garments/samples rinse wash and dry in the usual way.

The finished result will be an individual design that was simple to make and took no time at all

EXTRA PICS

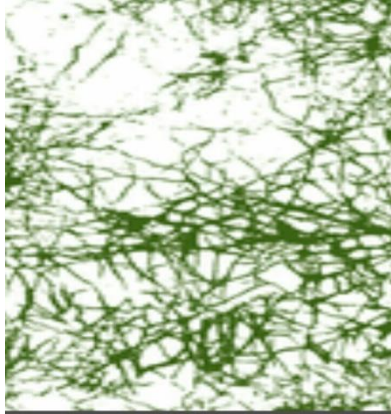






BATIK

CRACKS



CANDLE DRIP



ETCHING



MULTI COLOUR

BORDER



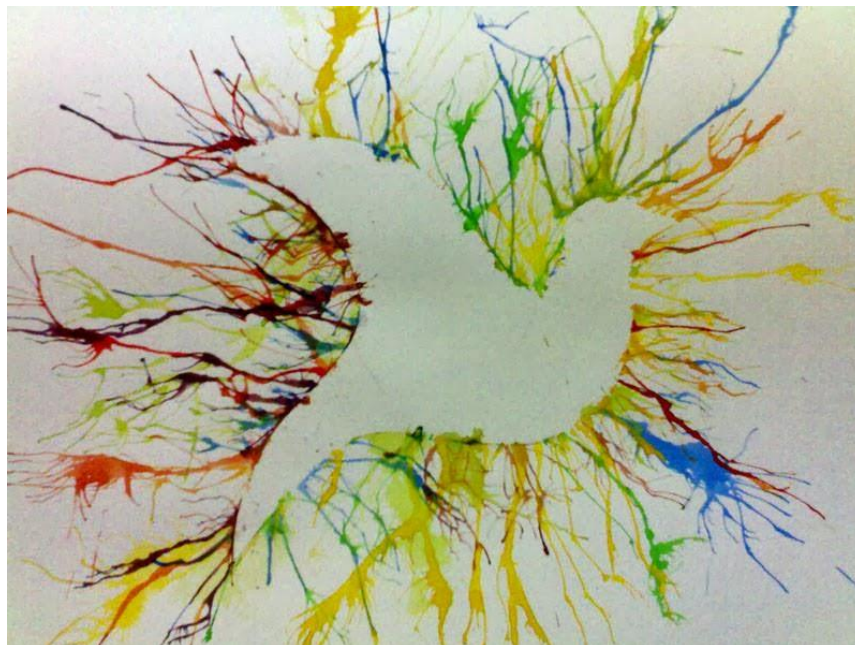
INSTANT

Stencil printing

- Prepare a sample by using positive stencil and spray painting with a toothbrush.



- Prepare a sample by using negative stencil and spray painting with mouth blown diffuser.



- Prepare a simple symmetrical stencil and paint with paint brush and sample of its print.



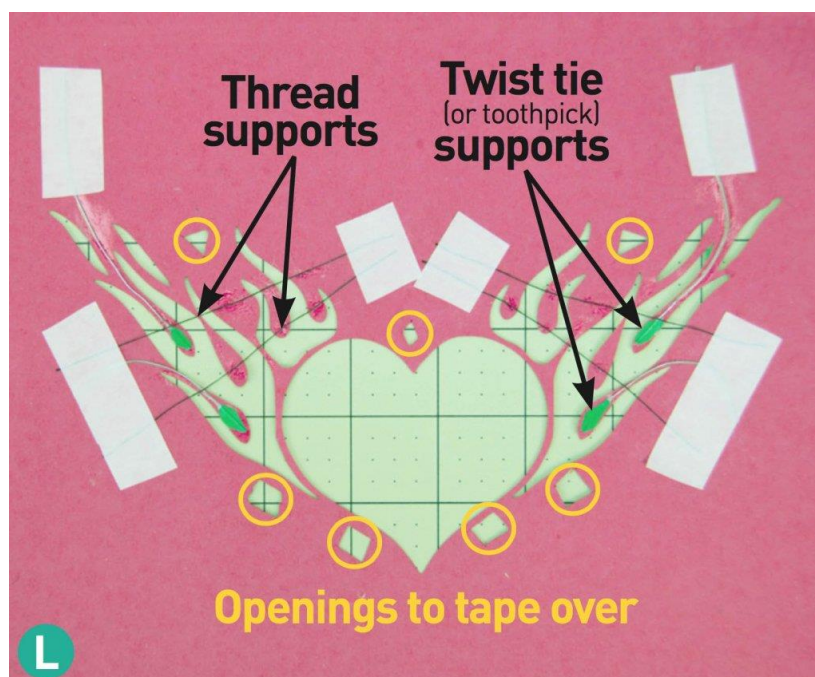
- Prepare a complex symmetrical stencil and a sample of its print.



- Prepare a silhouette stencil and a sample of its print.



- Prepare a stencil with ties and sample of its print.



- Prepare a stencil for a border and painting with a sponge with two colours.

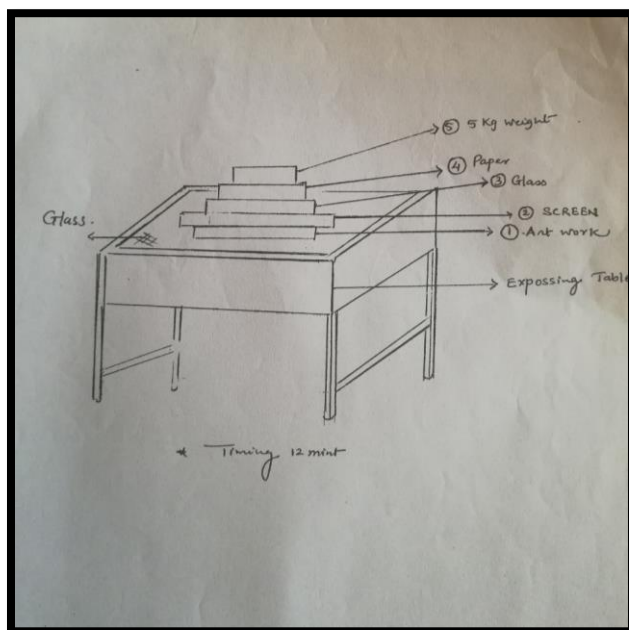
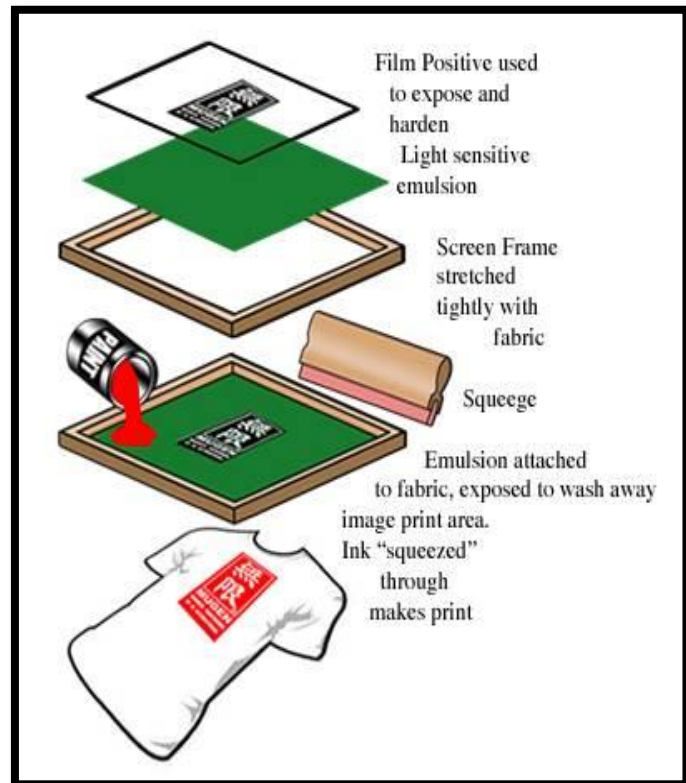


- Prepare a stencil for two colours to be printed around a neckline and painting with a roller.



Screen printing

EXPOSING OF SCREEN.



Different types of artwork.



*Prepare a screen print sample in one colour.

Step:1



Step:2



Step:3



Step:4



Step5: Final Product



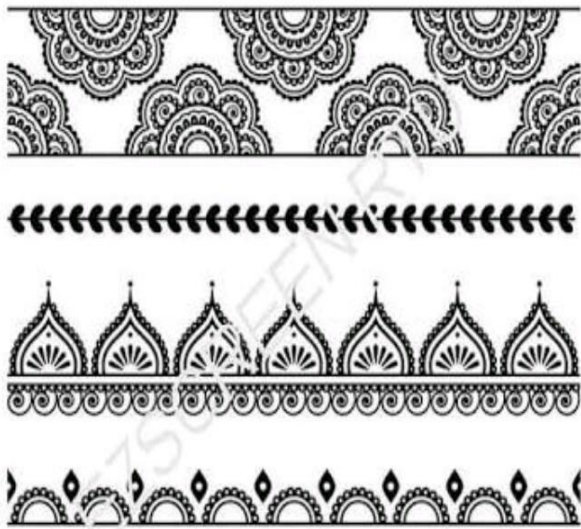
*Prepare a screen print sample of two or more colours.



*Prepare a screen print sample of napkin.



*Prepare a sample with screen printed border



Different types of articles of screen printing

Envelopes



Greetings



Visiting cards



Invites



Books



Bags

Garments

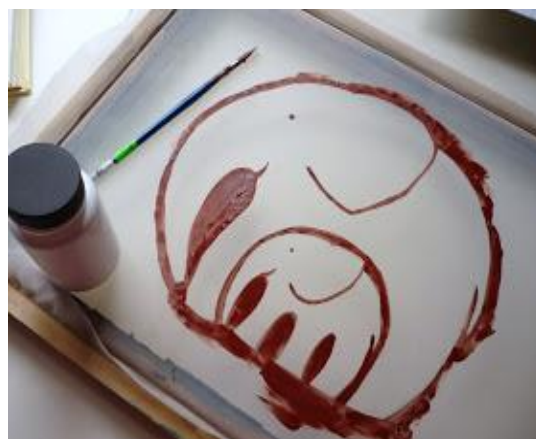
Tshirts



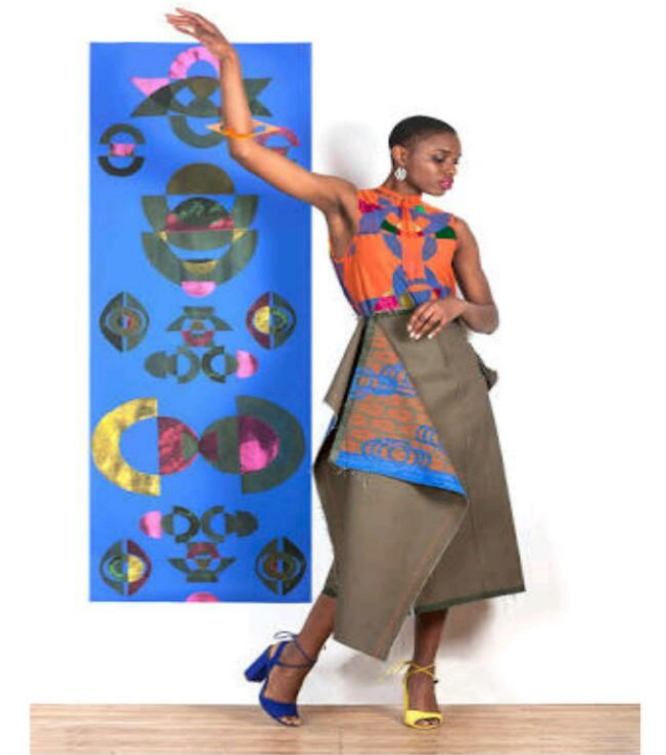
(Different abstract designs done with screen printing)



Pillow cases



Dress Material



Handkerchiefs



DYEING AND PRINTING (PRACTICALS)

XII CGDM

Note: use the following quality rating scale & submission rating scale for your evaluations.

RATING SCALE: Poor----- 1mk, Average 2mks, Good----3mks, V. Good --- 4mks, Excellent--- 5mks.

SUBMISSION RATING SCALE: On time --- 5mks, 2days late---4mks, 4days late---3mks, week late --- 2mks, 2weeks late--- 1mk

UNIT 1

Sub Unit 1

BLOCK PRINTING

* Prepare a sample of a block print design using potato or carrot blocks.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using fruit block.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks

* Prepare a sample of a block print design using any 5 vegetables and fruit as block.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using found blocks.

- Choice of the blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using nature (leaves, twigs, flowers, shells, etc.) as blocks.

- Choice of the blocks ---- 5mks.
- Print on the Fabric --- 5 mks

*Prepare a sample of a block print design using a mounted block eg. (macaroni/Pasta/dal/matchsticks) block.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using a nail head block.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using a lace block.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using a thread block.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using a glue block.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using a block of crushed paper.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using coir blocks.

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block print design using a wooden block (1colour).

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a sample of a block prints design using a wooden block (2colours).

- Preparation of blocks ---- 5mks.
- Print on the Fabric --- 5 mks.

*Prepare a paper sample of a visiting card/logo/envelop etc. of vegetable or fruit blocks.

- Preparation of blocks ---- 5mks.
- Print on the paper --- 5 mks.

*Prepare a paper bag using fruits and vegetables as your blocks.

- Preparation of blocks ---- 5mks.
- Print on the bag --- 5 mks.

CONTINUOUS EVALUATION OF UNIT 1.....I

Roll no	A (10)	B (10)	C (10)	D (10)	E (10)	F (10)	..... (10)	..... (10)	O (10)	TOTAL (160)	Average (10)

To find the average for Block printing add all the totals of the practical sample multiply by 16 and then divide it by 160.

Ex. Average = $\text{total} \times 100 / 160$

Project -----5 Mks

*Block Printing-----1 item (eg. Paper bags, pillow covers, Table napkins etc.)

Report should be written in the journal.

a) Planning

- Sketched the motif to be carved yes/no
- Designed the article with block printing yes/no
- Kept the equipment ready yes/no
- Table was prepared by padding yes/no

b) Process

- Accuracy of preparing the block yes/no
- Placement of the block is appropriate yes/no
- Used the appropriate amount of dye paste yes/no
- Size of the block is appropriate to the article yes/no

c) Product

- Creativity of the article yes/no
- Colour combination yes/no
- Neatness yes/no
- Accuracy of the block print yes/no

d) Attitude & Precautions

- Presented the completed article in an artistic manner yes/no
- Cleared the place on completion yes/no
- Care while working & finishing the article yes/no
- Utility of the article yes/no

e) Submission

- Completed and submitted in the stipulated time....4mks
- Completed and submitted 2 days later.....3mks
- Completed and submitted a week later.....2mks
- Completed and submitted after a week.....1mks

Every YES carries 1mark

Every NO carries 0marks

Roll No.	Planning (4)	Process (4)	Product (4)	Attitude & Precautions (4)	Submission (4)	Total (20)	Average (5)

To find the average for the project divide it by 4.

Ex. Average = $\text{total} \times 5 / 20$

TIE AND DYE

Fabric sample size 8"x8"

*Prepare a sample of a circled knotted sunburst in the centre & semicircle knots at the corners.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of a circle.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with bundis.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of a leheriya effect.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of square effect.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with tie in objects.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of fan shape effect.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of a marbling.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of bindis and combine this sample with decorative embellishments

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with wavy effect.

- Effects of the bleeding of the sample.....5mks

- Presentation on the journal of steps to be followed.....5mks

CONTINUOUS EVALUATION OF UNIT 1.....TIE AND DYE

Roll No	A (10)	B (10)	C (10)	D (10)	E (10)	F (10)	G (10)	H (10)	I (10)	J (10)	TOTAL (100)	AVERAGE (5)

To find the average for tie and dye add all the totals of the practical sample and then divide it by 20.

Ex. Average=total*5/100

Statement of marks of continuous Evaluation in practical of **DYEING AND PRINTING** **UNIT 1**

Sr. No.	Roll No.	Name of the students	Block printing (15)	Tie and dye (5)	Project (5)	Total (25)

Subject in charge

Date

UNIT 2

TIE AND DYE.....10mks

Fabric sample size 8" X 8"

*Prepare a sample of diamond effect.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of cross effect.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of a doughnut effect.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with pegs as resist.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with knots as resist.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of tritik effect done in running stitch

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of tritik effect done by machining

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with rolling and gathering

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample by dyeing in two colour using rubber bands and plastic bags

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with neckline using any technique.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*using any technique design the border on a rectangular sample.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample with fold and dip technique

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of tie & dye, combined with decorative embellishments.

- Effects of the bleeding of the sample.....5mks
- Decorative embellishments5mks

Innovative ways of tie and dye

*Prepare a sample of swirling technique

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

*Prepare a sample of lightning bolt effect.

- Effects of the bleeding of the sample.....5mks
- Presentation on the journal of steps to be followed.....5mks

CONTINUOUS EVALUATION OF UNIT 2. TIE AND DYE

Roll no.	A (10)	B (10)	C (10)	D (10)	E (10)	.... (10)	.... (10)	O (10)	Total (150)	Average (10)

To find the average of tie and dye add all the totals of practical sample and then divided by 15

Ex. Average=total*10/150

Project.....5mks

Tie and dye....1 item (eg. dress, skirt, trouser, salwar kameez, orhni, blouses, etc.)

Report should be written in the journal.

a) Planning

Planning on paper the design yes/no

Quantity of cloth for article yes/no

Kept the equipment and tying agents ready yes/no

Marked the design on the fabric yes/no

b) Process

Quantity of dye and water of dye bath was appropriate yes/no

Temperature of dye bath was appropriate yes/no

Prepared dye bath following precautions yes/no

Steps followed in opening of the dyed article yes/no

c) Product

Creativity of the article yes/no

Colour fastness yes/no

Effect of technique yes/no

Design is proportionate to the size of the article yes/no

d) Attitude and precautions

Presented the completed article in an artistic manner yes/no

Cleared the place on completion yes/no

Care while working and finishing the article yes/no

Utility of the article yes/no

e) Submission

Completed and submitted in the stipulated time 4mks

Completed and submitted 2 days later 3mks

Completed and submitted a week later 2mks

Completed and submitted after a week 1mk

Every YES carries 1mk

Every NO carries 0 marks

Roll no	Planning (4)	Process (4)	Product (4)	Attitude and precaution (4)	Submission (4)	Total (20)	Average (5)

To find the average for the project divided by 4

Ex. Average = total * 5 / 20

BATIK5mks

Fabric sample size 8"X 8"

*Prepare a sample with more cracks.

- Effect of the cracks.....5mks
- Effect of dye.....5mks

*Prepare a sample with less cracks.

- Effect of the cracks.....5mks
- Effect of dye.....5mks

*Prepare a sample with organized cracks.

- Effect of the cracks.....5mks
- Effect of dye.....5mks

*Prepare a sample with centre design & side cracks.

- Effect of the cracks.....5mks
- Effect of dye.....5mks

*Prepare a sample with centre design in cracks.

- Effect of the cracks.....5mks
- Effect of dye.....5mks

*Prepare a sample with a border design, done in 2 colors.

- Effect of the cracks.....5mks
- Effect of dye in 2 colors.....5mks

*Prepare a sample of instant batik.

- Effect of the cracks.....5mks
- Effect of instant dye.....5mks

*Prepare a sample of splashing.

- Effect of the cracks.....5mks
- Effect of dye.....5mks

*Prepare a sample of candle drip batik.

- Effect of the cracks.....5mks
- Effect of dye.....5mks

*Prepare a sample by etching the wax.

- Effect of the etching.....5mks
- Effect of dye.....5mks

CONTINUOUS EVALUATION OF UNIT 2BATIK

Roll no	A (10)	B (10)	C (10)	D (10)	E (10)	F (10)	G (10)	H (10)	I (10)	J (10)	K (10)	L (10)	TOTAL (100)	Average (10)

To find the average for Batik add all the totals of the practical sample and then divide it by 10.

Ex. Average = total * 10/ 100

Statement of marks of Continuous Evaluation in Practical of **DYEING & PRINTING** **UNIT 2**

Sr. No.	Roll No.	Name of the student	Tie & Dye (10)	Batik (10)	Project (5)	Total (25)

Subject in charge

Date:

GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION

ALTO BETIM – GOA

Statement of marks of Continuous Evaluation in Practical of

DYEING & PRINTING

Course: **COMMERCIAL GARMENT DESIGNING & MAKING**

.....HIGHER SECONDARY SCHOOL

GOA

Year: 20 -20

Sr. No.	Roll No.	Name of the student	Unit 1 (25)	Unit 2 (25)	Total (50)

Subject In-charge

School Seal

Principal

UNIT 3

STARCH PASTE BATIK -----5mks

Fabric sample size 8"X 8"

*Prepare a sample of starch paste batik in one color.

- Effect of the cracks.....5mks
- Effect of starch paste.....5mks

*Prepare a sample of starch paste batik in two colors.

- Effect of the cracks.....5mks
- Effect of starch paste.....5mks

CONTINUOUS EVALUATION OF UNIT 3BATIK

Roll no	A (10)	B (10)	TOTAL (20)	Average (5)

To find the average for Batik add the totals of the practical samples and then divide it by 4.

Ex. Average = total * 5/ 20

Project -----5mks

- Batik -----1 item (e.g. dress, skirt, trousers, salwar kameez, orhni, blouses etc.)

Report should be written in the journal.

a) Planning

- Planning on paper the design yes/no
- Quantity of cloth for article yes/no
- Marked the design on the fabric yes/no
- Kept the equipment ready yes/no

b) Process

- Washing of the fabric
- Application of the wax yes/no
- Preparation of the dye baths yes/no
- Dewaxing yes/no

c) Product

- Creativity of the article yes/no
- Colour fastness yes/no
- Neatness yes/no
- Accuracy of the batik print yes/no

d) Attitude & Precautions

- Presented the completed article in an artistic manner yes/no
- Cleared the place on completion yes/no

- Care while working & finishing the article yes/no
- Utility of the article yes/no

e) Submission

- Completed and submitted in the stipulated time....4mks
- Completed and submitted 2 days later.....3mks
- Completed and submitted a week later.....2mks
- Completed and submitted after a week.....1mks

Every YES carries 1mark

Every NO carries 0marks

Roll No.	Planning (4)	Process (4)	Product (4)	Attitude & Precautions (4)	Submission (4)	Total (20)	Average (5)

To find the average for the project divide it by 4.

Ex. Average = total * 5/ 20

STENCIL PRINTING-----15 mks

Fabric sample size 8"x8"

*Prepare a sample by using positive stencil and spray painting with a toothbrush.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

*Prepare a sample by using negative stencil and spray painting with mouth blown diffuser.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

*Prepare a simple symmetrical stencil and paint with paint brush and sample of its print.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

*Prepare a complex symmetrical stencil and a sample of its print.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

*Prepare a silhouette stencil and a sample of its print.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

*Prepare a stencil with ties and sample of its print.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

*Prepare a stencil for a border and painting with a sponge with two colours.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

*Prepare a stencil for two colours to be printed around a neckline and painting with a roller.

Choice of a design.....5mks

Accuracy of cutting the stencil design.....5mks

Accuracy of printing the design.....5mks

Neatness and colour combination.....5mks

CONTINUOUS EVALUATION OF UNIT 3.....STENCIL PRINTING

Roll no	A (20)	B (20)	C (20)	D (20)	E (20)	F (20)	G (20)	H (20)	TOTAL (160)	AVERAGE (15)

Ex. Average = total*15/160

Statement of marks of Continuous Evaluation in Practical of **DYEING & PRINTING** **UNIT 3**

Sr. no.	Roll no.	Name of the student	Stencil printing (15)	Batik (5)	Project (5)	Total (25)

Subject in charge:

Date:

UNIT 4

Project5mks

Stencil printing.....1 item (pillow cases, table cloth, 6 handkerchiefs

Report should be written in the journal

a) Planning

- Planning on paper the design yes/no
- Quantity of cloth for article yes/no
- Marked the placement of the stencil on the fabric yes/no
- Kept the equipment ready yes/no

b) Process

- Washing yes/no
- Choice of the design yes/no
- Accuracy of printing the design yes/no
- Accuracy of cutting the stencil yes/no

c) Product

- Creativity of the article yes/no
- Colour fastness yes/no
- Neatness yes/no
- Accuracy of the stencil print yes/no

d) Attitude and Precautions

- Presented the completed article in an artistic manner yes/no
- Cleared the place on completion yes/no
- Care while working and finishing the article yes/no
- Utility of the article yes/no

e) Submission

- Completed and submitted in the stipulated time4mks
- Completed and submitted 2 days later3mks
- Completed and submitted a week later.....2mks
- Completed and submitted after a week1mk

Every YES carries 1 mark

Every NO carries 0 marks

Roll No	Planning (4)	Process (4)	Product (4)	Attitude and Precautions (4)	Submission (4)	Total (20)	Average (5)

To find the average for the project divide it by 4

Ex. Average=total *5/20

SCREEN PRINTING

Sample size 8"x8"

*Prepare a sample of a screen print in one colour (stencil method)

- Choice of design..... 5mks.

- Accuracy of print5mks.
- Submission.....5mks.

*Prepare a sample of two or more colours.

- Choice of design..... 5mks.
- Accuracy of print5mks.
- Submission.....5mks.

*Prepare a sample of screen printed napkin/handkerchief.

- Choice of design..... 5mks.
- Accuracy of print5mks.
- Submission.....5mks.

*Prepare a sample of screen print used as a border.

- Choice of design..... 5mks.
- Accuracy of print5mks.
- Submission.....5mks.

*Prepare a sample of screen print used as a border.

- Choice of design..... 5mks.
- Accuracy of print5mks.
- Submission.....5mks.

CONTINUOUS EVALUATION OF UNIT 4.....

Roll no.	i (15)	ii (15)	iii (15)	iv (15)	v (15)	TOTAL (75)	Average (15)

To find the average add all the totals of the practical sample and divide it by 5.

JOURNAL 5mks

*Presentation

- Legible titles yes/no
- Creative presentation yes/no
- Overall neatness of journal yes/no

*Cover of the journal

- Creative yes/no
- Effective & neatness yes/no

Roll no.	Journal (5)

Statement of marks of continuous Evaluation in practical of
DYEING & PRINTING.

UNIT 4

Sr. No.	Roll no.	Name of the student	Screen printing (15)	Project (5)	journal (5)	Total (25)

Subject in charge

Date:

Statement of marks of continuous evaluation in practical of
DYEING & PRINTING
STD XII

Sr. No.	Roll no.	Name of the student	Unit 1 (25)	Unit 2 (25)	Unit 3 (25)	Unit 4 (25)	Total (100)

Subject In-charge

School Seal

Principal

**GOA BOARD OF SECONDARY AND HIGHER SECONDARY
EDUCATION,
ALTO BETIM – GOA 403521.**

**MID TERM QUESTION PAPER.
DESIGN OF THE QUESTION PAPER
XII C. G.D.M.**

TIME: 01 HOUR**SUB: DYEING AND PRINTING****MAX. MARKS: 20**

The weightage of the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage of learning outcomes:

Sr.No	Learning outcomes	Marks	Percentage of marks
1	Knowledge	6	30 %
2	Understanding	6	30%
3	Application	4	20%
4	Skill	4	20%
5	TOTAL	20	100%

2. Weightage to content / subject units

Sr. No	Units	Marks
1	BLOCK PRINTING.	14
2	TIE & DYE.	06
3	TOTAL	20

3. Weightage to form of questions

Sr. No	Form of questions	Marks for each question	Number of questions	Total marks
1	Long answer type (LA)	5	1	5
2	Short answer type (SA - 1)	2	3	6
3	Short answer type(SA – 2)	3	2	6
4	Very short Answer type(VSA)	1	3	3
5	Total			20

The expected time for different types of question would be as follows:

Sr. No	Form of Questions	Approx. time for each Question in minutes (t)	Number of questions (n)	Approx. Time for each form of questions in mins (n x t)
1.	Long Answer Type (LA)	20	01	20
2	Short Answer Type(SA 1)	06	03	12
3	Short Answer type (SA 2)	09	02	18
4	Very Short Answer type(VSA)	02	03	10
5	TOTAL			60

As the total time is calculated on the basis of the number of questions required to be answered and the length of their anticipated answers it would therefore be advisable for candidates to budget their time properly by cutting out the superfluous words and be within the expected time limits.

3. Scheme of options:

(There will be no overall choice. However, there is internal choice in D sub questions of 05 marks category and E sub question of 3 marks category sub question of marks category.)

4. Weightage to difficulty level of questions:

Sr. No	Estimated difficulty level of questions	Percentage
1	Easy	20%
2	Average	60%
3	Difficult	20%

A question may vary in difficulty level from individual to individual. As such, assessment in respect of each question will be made by the paper setter on the basis of general anticipation from the group as a whole taking the examination. This provision is only to make the paper balanced in its weightage rather than to determine the pattern of marking at any stage.

5. Number of main questions:

There will be 02 main questions of 10 marks each.

FORMAT OF QUESTION PAPER
HOME SCIENCE BASED VOCATIONAL COURSE
MID TERM TEST

Dyeing and Printing

XII CGDM

20 marks

01 hour

INSTRUCTIONS:

1. All questions are compulsory.
2. Answer each question on a fresh page.
3. Write the number of each question and sub-questions clearly
4. Figures to the right indicate full marks.
5. Draw and use colours wherever necessary.
6. The question paper consist of 2 questions.

1A. Very Short Answers (VSA){Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) {Answer the following in 1-2 sentences.} (01 mark)

C. Short Answer II (SA II) {Answer the following in 5-6sentences.} (03 marks)

D. Answer the following (05 marks)
 Eg.1. Design the following.....

2A. Very Short Answers (VSA){Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) {Answer the following in 2-3 sentences.} (02 marks)

C. Short Answer I (SA I) {Give two reasons for the following questions.} (02 marks)

D. Short Answer I (SA I) {Answer the following with diagrams only} (02 marks)

E. Short Answer II (SA II) {Answer the following in 5-6 sentences} (03 marks)

Goa Board of Secondary & Higher Secondary Education Alto, Betim – Goa.
H. S.S.C Examination.

BLUE –PRINT MID TERM TEST STD XII

Duration: 1 hour

Subject: Dyeing & printing

Maximum Mark: 20

Objectives	Knowledge				Understanding				Application				Skill				Total
Content Area	V.S. A	S. AI	S.A. II	L. A	V.S. A	S. AI	S.A. II	L.A	V.S. A	S.A. I	S.A. II	L. A	V.S. A	S.A. I	S.A. II	L.A	
Block Printing	1(1)				1(1)		1(2)	1(3)			1(2)					1(5)	14
Tie And Dye	1(1)						1(3)			1(2)							06
Total	02				09				04				05				20
%	10%				45%				20%				25%				100%

MODEL QUESTION PAPER
HOME SCIENCE BASED VOCATIONAL COURSE
MID TERM TEST

Dyeing and Printing

XII CGDM

20 marks

01 hour

INSTRUCTIONS:

1. All questions are compulsory.
2. Answer each question on a fresh page.
3. Write the number of each question and sub-questions clearly
4. Figures to the right indicate full marks.
5. Draw and use colours wherever necessary.
6. The question paper consist of 2 questions.

Q1A) Answer the following in one or two words: 1
Method used to make duplicate of a potato block

B) Answer the following in one or two sentences: 1
What are the tools and equipment used for block printing?

C) Answer the following in five to six sentences: 3
Write a short note on nail head block.

D) Answer the following

5

Design the neckline and hemline of a dress using natural blocks following the given instructions:

- a) Make use of natural blocks.
- b) Use cool colours
- c) Explain the process of making and printing with the block.

Designing – 2mks Colour combination- 1mks Explanation – 2mks

2. A) Select and rewrite the correct alternatives from those given below:

1

Block printing by hand is a -----

- slow process.
- fast process.
- quick process.
- moderate process.

B) Answer the following in two to three sentences:

Mention the characteristic effect of Tie and dye?

C) Answer the following in two to three sentences:

2

How are Bandhani artisans from Rajasthan or Gujarat identified?

D) Give two reasons to the following

2

New cloth to be used in tie and dye should be given a hot wash in soapy water.

E) Answer any one of the following:

3

- 1) Which are the different ways of applying colour on to the block?
- 2) Explain Saanganer wooden block?

**GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION,
ALTO BETIM – GOA 403521.**

FIRST TERM QUESTION PAPER.

DESIGN OF THE QUESTION PAPER

XII C. G.D.M.

TIME: 2 HRS

SUB: DYEING AND PRINTING

MAX. MARKS: 40

The weightage of the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage of learning outcomes:

Sr. No	Learning outcomes	Marks	Percentage of marks
1	Knowledge	06	15 %
2	Understanding	10	25%
3	Application	8	20%
4	Skill	16	40%
5	TOTAL	40	100%

2. Weightage to content / subject units

Sr. No	Units	Marks
1	BLOCK PRINTING.	12
2	TIE & DYE.	14
3	BATIK.	14
	TOTAL	40

3. Weightage to form of questions

Sr. No	Form of questions	Marks for each question	Number of questions	Total marks
1	Long answer type (LA)	5	2	10
2	Short answer type (SA - 1)	2	6	12
3	Short answer type(SA – 2)	3	4	12
4	Very short Answer type(VSA)	1	6	06
5	Total			40

The expected time for different types of questions would be as follows:

Sr. No	Form of Questions	Approx. time for each Question in minutes (t)	Number of questions (n)	Approx. Time for each form of questions in mins (n x t)
1.	Long Answer Type (LA)	15	02	30
2	Short Answer Type(SA -1)	07	06	56
3	Short Answer type (SA – 2)	08	04	24
4	Very Short Answer type(VSA)	02	06	10
5	TOTAL			120

As the total time is calculated on the basis of the number of questions required to be answered and the length of their anticipated answers it would therefore be advisable for candidates to budget their time properly by cutting out the superfluous words and be within the expected time limits.

3. Scheme of options:

(There will be no overall choice. However, there is internal choice in D sub questions of 05 marks category and __E__ sub question of _3__marks category __D__ sub question of __2_ marks category.)

4. Weightage to difficulty level of questions:

Sr. No	Estimated difficulty level of questions	Percentage
1	Easy	20%
2	Average	60%
3	Difficult	20%

A question may vary in difficulty level from individual to individual. As such, assessment in respect of each question will be made by the paper setter on the basis of general anticipation from the group as a whole taking the examination. This provision is only to make the paper balanced in its weightage rather than to determine the pattern of marking at any stage.

5. Number of main questions:

There will be 04 main questions of 10 marks each.

FORMAT OF QUESTION PAPER HOME SCIENCE BASED VOCATIONAL COURSE FIRST TERM EXAM

Dyeing and Printing

XII CGDM

40 marks

02 hours

INSTRUCTIONS:

- i. All questions are compulsory.
- ii. Answer each question on a fresh page.
- iii. Write the number of each question and sub-questions clearly
- iv. Figures to the right indicate full marks.
- v. Draw and use colours wherever necessary.
- vi. The question paper consist of 4 questions.

1A. Very Short Answers (VSA) {Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) { Answer the following in 1-2 sentences.} (01 mark)

C. Short Answer II (SA II) { Answer the following in 5-6 sentences.} (03 marks)

D. Answer ANY ONE of the following (05 marks)

Eg.1. Design the following.....

2A. Very Short Answers (VSA){Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) { Answer the following in 2-3 sentences.} (02 marks)

C. Short Answer I (SA I) { Give two reasons for the following questions.} (02 marks)

D. Short Answer I (SA I) { Answer the following with diagrams only} (02 marks)

E. Short Answer II (SA II) { Answer the following in 5-6 sentences} (03 marks)

3A. Very Short Answers (VSA) {Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) { Answer the following in 1-2 sentences.} (01 mark)

C. Short Answer II (SA II) { Answer the following in 5-6 sentences.} (03 marks)

D. Answer ANY ONE of the following (05 marks)

Eg.i. Design the following.....

4A. Very Short Answers (VSA){Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) { Answer the following in 2-3 sentences.} (02 marks)

C. Short Answer I (SA I) { Give two reasons for the following questions.} (02 marks)

D. Short Answer I (SA I) { Answer the following with diagrams only }

(02 marks)

E. Short Answer II (SA II) { Answer the following in 5-6 sentences }

(03 marks)

Goa Board of Secondary & Higher Secondary Education Alto, Betim – Goa.

H. S.S.C Examination.

BLUE –PRINT FIRST TERM

STD XII

Duration: 2 hours

Subject: Dyeing & printing

Maximum Mark: 40

Objectives	Knowledge				Understanding				Application				Skill				Total
	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	
Content Area																	
Block Printing	1(1)					1(1)	1(2)					1(3)				1(5)	12
Tie And Dye	1(1)	1(2)				1(1)		1(3)			1(2)					1(5)	14
Batik		1(2)			1(1)	1(2)	1(2)				1(3)			1(2)	1(2)		14
Total	06				12				08				14				40
Percentage	15%				30%				20%				35%				100

MODEL QUESTION PAPER
HOME SCIENCE BASED VOCATIONAL COURSE
FIRST TERM TEST

Dyeing and Printing

XII CGDM

40 marks

02 hours

INSTRUCTIONS:

1. All questions are compulsory.
2. Answer each question on a fresh page.
3. Write the number of each question and sub-questions clearly
4. Figures to the right indicate full marks.
5. Draw and use colours wherever necessary.
6. The question paper consist of 4 questions.

Q1 A) Answer in one to two words: (1)
 i) The block made by an adhesive which gives a raised printable design?

B) Answer in one to two sentences :- (1)
 i) Why is Linoleum used for making printing blocks?

C) Answer the following in five to six sentences: (3)
 i) Explain in brief, how the printing table is prepared to be used for block printing?

D) Answer the following: (5)
 i) Design a Nighty, following the given instructions in block printing:
 • Make use of Potato & Garlic.
 • Print the yoke and the hem border of a Nighty.
 • Make use of any four bright colours.
 • Explain the process of “Making the potato block”
 Designing: 2
 Colour combination: 1
 Explanation: 2

2A) Select and rewrite the correct alternative from those given below: (1)
 Laheria can be obtained in tie & dye by tying with _____
 • Rolling & tying effect.
 • Knotting effect.
 • Pleating & tying effect.
 • Crumpling & tying effect.

- B) Answer in one to two sentences: (1)
Name the resists used in Tie & dye
- C) Answer the following in five to six sentences: (3)
Differentiate between Patola and Bandhani fabric of tie and dye.
- D) Answer any one of the following: (5)
- 1) Create a Tie & Dye dupatta by following the given instructions:
 - a) Use any two techniques of tying.
 - b) Use Contrasting colors, besides the background colour.
 - c) Explain dyeing process involved.
 Designing – 2 marks
 Color combination – 1 mark
 Explanation – 2 marks
 - 2) Design the border for a dupatta by following the given instructions:
 - a) Use cording & Tie in object technique.
 - b) Use any two Analogous colours
 - c) Explain the tying technique.
 Designing – 2 marks
 Color combination – 1 mark
 Explanation – 2 marks
- Q3A) Select and rewrite the sentence with the correct alternative from those given below: (1)
The removal of wax from the outline of a design is known as-----.
- Dewaxing
 - Etching
 - Fixing
 - Scratching
- B) Answer the following in two to three sentences. (2)
i. Why are hot water dyes not used for batik?
- C). Give two reasons for the following question. (2)
i. Wool, though a natural fabric is not used for batik.
- D.) Answer any one in two to three sentences. (2)
i. What is T- janting?
- E). Answer the following in five to six sentences. (Any one.) (3)
i. Design a handkerchief having a central design and cracks all over. Use any two colours and explain the dyeing process.

ii. Design an umbrella skirt of batik and explain the batik process in brief.

Q4A) Answer in one to two words. (1)

What is the main characteristic effect of batik?

B) Answer the following in two to three sentences: (2)

What is Tritik in tie and dye?

C) Give two reasons to the following (2)

Name four types of Rajasthani Tie and dye dupattas?

D) Answer the following in two to three sentences: (2)

What is fabric dye paste?

E) Answer the following in five to six sentences. (Any one.) (3)

i. Design a scarf having a central design and cracks all over. Use any two colours and explain the dyeing process

ii. Design an umbrella skirt of batik and explain the batik process in brief.

**GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION,
ALTO BETIM – GOA 403521.**

FINAL QUESTION PAPER.

DESIGN OF THE QUESTION PAPER

XII C. G.D.M.

TIME: 02 HOURS SUB: DYEING AND PRINTING MAX. MARKS: 50

The weightage of the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage of learning outcomes:

Sr. No	Learning outcomes	Marks	Percentage of marks
1	Knowledge	09	12 %
2	Understanding	15	32%
3	Application	8	14%
4	Skill	18	42%
5	TOTAL	50	100%

2. Weightage to content / subject units

Sr. No	Units	Marks
1	BLOCK PRINTING.	10
2	TIE & DYE.	10
3	BATIK	10
4	STENCIL PRINTING	10
5	SCREEN PRINTING	10

3. Weightage to Form of Questions

Sr. No	Form of questions	Marks for each question	Number of questions	Total marks
1	Long answer type (LA)	5	3	15
2	Short answer type (SA - 1)	2	6	12
3	Short answer type (SA – 2)	3	5	15
4	Very short Answer type(VSA)	1	8	08
5	Total			50

The expected time for different types of question would be as follows:

Sr. No	Form of Questions	Approx.time for each Question in minutes (t)	Number of questions (n)	Approx.Time for each form of questions in mins (n x t)
1.	Long Answer Type (LA)	16.5	03	50
2	Short Answer Type(SA - 1)	4	06	24
3	Short Answer type (SA – 2)	6	05	30
4	Very Short Answer type(VSA)	02	08	16
5	TOTAL			120

As the total time is calculated on the basis of the number of questions required to be answered and the length of their anticipated answers it would therefore be advisable for candidates to budget their time properly by cutting out the superfluous words and be within the expected time limits.

3. Scheme of options:

(There will be no overall choice. However, there is internal choice in D sub questions of 05 marks category, __E__ sub question of _3__marks category and __D__ sub question of _2__ marks category.)

4. Weightage to difficulty level of questions:

Sr.No	Estimated difficulty level of questions	Percentage
1	Easy	20%
2	Average	60%
3	Difficult	20%

A question may vary in difficulty level from individual to individual. As such, assessment in respect of each question will be made by the paper setter on the basis of general anticipation from the group as a whole taking the examination. This provision is only to make the paper balanced in its weightage rather than to determine the pattern of marking at any stage.

5. Number of main questions:

There will be 05 main questions of 10 marks each.

FORMAT OF QUESTION PAPER
HOME SCIENCE BASED VOCATIONAL COURSE
FINAL EXAM
XII CGDM
DYEING AND PRINTING

Marks:50

Time: 2 hrs

INSTRUCTIONS:

- i. All questions are compulsory.
- ii. Answer each question on a fresh page.
- iii. Write the number of each question and sub-questions clearly
- iv. Figures to the right indicate full marks.
- v. Draw and use colours wherever necessary.
- vi. The question paper consist of 5 questions.

1A. Very Short Answers (VSA) {Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) {Answer the following in 1-2 sentences.} (01 mark)

C. Short Answer II (SA II) {Answer the following in 5-6 sentences.} (03 marks)

D. Long Answer (LA) {Answer the following in 8-10 sentences} (05 marks)

2A. Very Short Answers (VSA) {Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) {Answer the following in 1-2 sentences.} (01 mark)

C. Short Answer II (SA II) {Answer the following in 5-6 sentences.} (03 marks)

D. Answer ANY ONE of the following (05 marks)

Eg. i) Design.....

ii) Design.....

3A. Very Short Answers (VSA) {Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) {Answer the following in 2-3 sentences.} (02 mark)

C. Short Answer II (SA II){Answer the following in 2-3 sentences} (give reasons)(02 mks)

D. Answer ANY ONE of the following (02 marks)

E. Short Answer (SA) {Answer the following in 5-6 sentences} (03 marks)

Eg.1. Design the following.....

4A. Very Short Answers (VSA){Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

B. Short Answer I (SA I) {Answer the following in 1-2 sentences.} (01 marks)

C. Short Answer II (SA II) {Answer the following in 5-6 sentences} (03 marks)

D. Long Answer (LA) {Design the following} (05 marks)

5A. Very Short Answers (VSA) {Select and rewrite the correct alternative from those given below. OR Answer in one to two words} (01 mark)

- B. Short Answer I (SA I) { Answer the following in 2-3 sentences.} (02 marks)
 C. Short Answer I (SA I) { Give two reasons for the following questions.} (02 marks)
 D. Short Answer I (SA I) { Answer the following} (02 marks)
 E. Short Answer II (SA II) { Answer the following in 5-6 sentences} (03marks)

Goa Board of Secondary & Higher Secondary Education Alto, Betim – Goa.
 H. S.S.C Examination.
 BLUE –PRINT FINAL STD XII

Duration: 2 hours

Subject: Dyeing & printing

Maximum Mark: 50

Content Area	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	V.S.A	S.A.I	S.A.II	L.A	
Block Printing	1(1)				1(1)						1(3)					1(5)	10
Tie And Dye	1(1)				1(1)											1(5)	10
Batik		1(2)			1(1)	1(2)				1(2)					1(3)		10
Stencil	1(1)				1(1)		1(3)									1(5)	10
Screen Printing		1(2)	1(2)		1(1)	1(2)					1(3)						10
Total	09				15				08				18				50
	18%				30%				16%				36%				100%

MODEL QUESTION PAPER
HOME SCIENCE BASED VOCATIONAL COURSE
FINAL EXAM
XII CGDM
DYEING AND PRINTING

Marks: 50

Duration: 2 hrs

INSTRUCTIONS:

- i. All questions are compulsory.
- ii. Answer each question on a fresh page.
- iii. Write the number of each question and sub-questions clearly
- iv. Figures to the right indicate full marks.
- v. Draw and use colours wherever necessary.
- vi. The question paper consist of 5 questions.

- Q1 A) Answer in one or two words only (1)
 i) Name the preprinting treatment given to block printing fabric which takes 3 to 5 days
- B) Answer in one to two sentences: (1)
 i) Why is Linoleum used for making printing blocks?
- C) Answer the following in five to six sentences:- (3)
 i) Explain in brief, how the printing table is prepared to be used for block printing?
- D) Answer the following: (5)
 i) Design a frock, following the given instructions in block printing:
 *Make use of Potato block.
 •Use secondary colours.
 • Explain the process of “Making & printing with potato block”
 Designing: 2
 Colour combination: 1
 Explanation: 2
2. A) Select and rewrite the correct alternative from those given below: (1)
 Rajasthan is well known for its leheriya pattern or pattern of waves, which symbolizes _____
- Water waves
 - Stitched effect
 - Disco light
 - Checks

- B) Answer the following in **one** to **two** sentences: (1)
Name the style used for printing in Tie & Dye?
- C) Answer the following in **five** to **six** sentences: (3)
Write useful information about tying.
- D) Answer **any one** of the following: (5)
- i) Design a Tie & Dye dupatta with the following given instructions.
 - a) Obtain border print for dupatta and Bindis in the centre
 - b) Use Contrasting colors
 - c) Explain dyeing process involved
 Designing – 2 marks
 Color combination – 1 mark
 Explanation – 2 marks
 - ii) Design a tie & dye T-Shirt with the following given instructions.
 - a) Obtain spiraling effect on the T-Shirt
 - b) Use any two Bright colors
 - c) Explain the process involved
 Designing – 2 marks
 Color combination – 1 mark
 Explanation – 2 marks
- Q3A) Answer in one to two words. (1)
What is the main characteristic effect of Batik
- B) Answer the following in two to three sentences: (2)
How is stubborn wax removed from batik article?
- C) Give two reasons for the following question (2)
Cold water dyes are used for batik.
- D) Answer the following in two to three sentences. – (2)
What is etching?
- E) Answer any one of the following in in five to six sentences: (3)
- 1) Design an umbrella skirt of batik and explain the batik process in brief.
 - 2) Design a batik dupatta with a border design and few cracks, using

starch paste batik . Explain the process involved in making the starch paste.

4. A) Select and rewrite the correct alternative from those given below: (1)

Rajasthan is well known for its leheriya pattern or pattern of waves, which symbolizes _____

- Water waves
- Stitched effect
- Disco light
- Checks

B) Answer the following in **one** to **two** sentences: (1)

Name the style used for printing in Tie & Dye?

C) Answer the following in **five** to **six** sentences: (1)

Write useful information about tying

D) Answer **any one** of the following: (1)

1) Design a Tie & Dye dupatta with the following given instructions:

- a) Obtain border print for dupatta and Bindis in the centre
- b) Use Contrastive colors
- c) Explain dyeing process involved

Designing – 2 marks

Color combination – 1 mark

Explanation – 2 marks

2) Design a tie & dye T-Shirt with the following given instructions:

- a) Obtain spiraling effect on the T-Shirt
- b) Use any two Bright colors
- c) Explain the process involved

Designing – 2 marks

Color combination – 1 mark

Explanation – 2 marks

5. A) Answer in one or two words only. (1)

Name the equipment used to push the ink through the mesh.

B) Answer the following in two to three sentences. (2)

State any two advantages of screen printing.

C) Give two reasons to the following questions. (2)

It is necessary to do registration before printing process in screen printing.

D) Answer **any one** of the following in two to three sentences. (2)

1. How can photo emulsion be washed off from the screen in screen printing?

2. Write short note on block out of screen in screen printing.

E) Answer the following in five to six sentences. 3

1. Design a T shirt in one colour and explain the directions for exposing of a screen.

Answer key

Q1) A) Hari sarana

B) Fabric printing ink does not adhere properly to anything moist like half cut potato or any absorbent surface act like felt because it is an oil bound.

C) Procedure can be divided into following major parts:

Washing, Marking, Printing, Drying, Washing & fixing the colour.

(Explain any one procedure)

D) Designing

Q2A) Water waves.

B) Resist style.

C) Use cottons & silk fabric for tie & dye and wash/rinse the fabric thoroughly before use so that it is starch free.

- Thread used for tying should be of strong quality & does not break in the process of dying.
- It should be tied very securely to ensure pure colours.
- To ensure clear cut lines, bind the cloth very tightly, leaving no space between the thread (which is wound several times)
- To acquire the net or the web effect, bind the cloth in a spiral form(x) & use a little thicker thread.
- Leave little spaces in between to let in the dye Take note that thread is not loosely tied or you will not get the fine lines.
- You must keep a variety of tying agents to get various effects. E.g. twine, thin thread, thick thread, rubber bands, clips/pegs, strips of cloth etc.
- While using thick material remember to leave wide gaps between each tie, the thicker the material the larger the pattern should be to allow the dye to penetrate in every fold properly.
- If the fabric is to be given more than one dye bath. It is advisable to tie not only the undyed areas but also those which are to take the second & subsequent dyes also.

(Consider any 3 points in answer)

D)

1) Designing-2mks (border print for dupatta and Bindis in the centre)

Colour combination-1mk (contrasting colours)

Explanation-2mks. (dyeing process)

2) Designing-2mks (Spiraling effect)

Colour combination-1mk (Bright colours)

Explanation-2mks. (Process)

3 A. Answer in one to two words: (1)

Crackled or veined effect.

B. Answer the following in two to three sentences: (2)

Stubborn wax is removed by ironing the fabric in between sheets of white or brown paper.

C. Give two reasons for the following. (2)

Cold water dyes are used for batik because if hot water dyes are used it will melt the wax during the dyeing process and the batik effect of cracks would be lost as it is used as a resist. It would result as a patchy effect.

D. Answer the following in two to three sentences. (2)

The removal of wax from the outline of a design is known as etching.

E. Answer any one of the following in five to six sentences. (3)

Design – 1mark

Explanation- 2marks. (brief)

- i. Treatment of the fabric
- ii. Application of the wax
- iii. Dyeing
- iv. Dewaxing

Q4 A) varnish.

B) It is necessary to clean the stencil after printing because the paint left on it dries up and become difficult to remove.

C)

Different techniques of stencil printing are;

1. Printing by dabbing
2. Printing with brush
3. Spray painting with stencils
 - a) Spray painting with toothbrush
 - b) Mouth blown diffuser

- 1) 1. Place the screen under running water
2. Let the running water wash off the photo emulsion that did not harden
3. Gently scrub the design with a toothbrush to fully remove the emulsion from the design.
4. Dry the screen off completely.

2) While applying the photo sensitive emulsion or the film, the screen is never completely covered. In such areas, holes in the screen fabric are left open. It is very much essential that, only the printing area should remain open and the non-printing area remain closed. For this purpose the mixture of screen coat and sensitizer is applied over such areas (non printing area). Precaution has to be taken to avoid spilling of the emulsion on printing areas. After this procedure is complete the screen to be dried thoroughly.

E) Answer the following in five to six sentences.

3

Directions for Using Exposing Table are:

1. Once the photo emulsion is dry, the screen is ready for exposing.
2. Switch on a tube inside the exposing table and keep the positive or transparency (with the design printed on it) on the glass. The readable side should be upwards.
3. Keep the screen on the positive (fabric side in contact with positive) ensuring that, the positive is within the emulsion area. Then put off the light immediately as the light is only for the purpose of such adjustments.
4. Keep a book of a suitable size inside the screen and a sufficient weight on it. A bag filled with sand may be used for this purpose
5. Switch on all the tubes and expose the screen for a required period of time (i.e. minimum for 10 minutes & maximum for 12 minutes). Once the timer is done put off the light and remove the transparency.