A COMPARATIVE STUDY OF SANGENER AND BARGU PRINTS WITH REFERENCE TO SCOPE OF MODERNIZATION AND THEIR MARKET POTENTIAL

Synopsis

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INTRODUCTION

India, since ancient times is known for its unique arts and crafts. Different types of hand printing techniques are used in this country by people of varied customs and culture. One of the most popular form of hand printing is - Hand block printing. This art of printing has been in use since ancient times, but now-a-days it has found place in metropolitan cities of India and also the garments with hand block printing are being exported to different countries worldwide.

The major centers in India were block printing is done on large scale are as follows:-

- Gujarat (Surat, Ahmedabad, Sanganer, Pethapur).
- Rajasthan (Bagru).
- Andhra Pradesh.
- Uttar Pradesh (Farukhabad).
- West Bengal.

There are two types block printing famous in the states of Gujarat and Rajasthan namely- Sanganeri and Bagru. These two styles of block printing are almost same, the thing which primarily distinguish them from one another is the color of background on which they are printed. Bagru prints are done on black and red black ground whereas Sanganeri is done on white background. In western part of India the block prints are typically fine; however in eastern part the prints are bolder and bigger. Lepakshi and Ajarakh prints are also examples
of the type of block prints. The unique feature of this printing is the amount of printing variations that can be made in the same type of motifs.

**Different Techniques of Hand Block printing**

1) Discharge Printing

Firstly, the fabric on which printing is to be done is dyed (Shenai, V.A., 1984 and 1988). The dye is removed from the part of fabric on which computer designs (Dastoor et al, 1994) are to be made by use of a chemical. Then those segments printed are treated so that they can be re-colored.

2) Direct Block Printing

The fabric used here is either cotton or silk. The cloth is first bleached, and then dyed with the desired color. After that block printing is done on borders with carved wooden blocks then inside the borders.

3) Resist Printing

In this technique the part of the cloth which is not to be dyed is covered with the paste of resin and clay. Then the fabric is dyed with the desirable color, at this stage the dye penetrates through the cracks which create wavy effect of colors on the cloth. After this the fabric is finally block printed. Rich and colorful prints can be created through block printing. In olden times it was done with natural dyes but now it is done with artificial colors and synthetic dyes (Shenai, V. A, 1987). The colors commonly used for printing are saffron, yellow, blue and red. The wooden blocks are used for printing. They are of different shapes and have designs carved at the bottom of the block. Teak wood is used for making them on which designs are made by skilled craftsman. These blocks are known as ‘Bunta’. Every block consists of a wooden handle and 2-3 holes which are made
for the purpose of free movement of air. The blocks before taken into use are kept in oil for 10-15 days, which provide them the softness required. Hand block printing, a craft handed down through generations is in the forefront of the fashion scene today. The ancient craft has seen a major revival over the last two decades and has moved away from its traditional rural centers to the metropolitan cities of Delhi, Mumbai, Chennai, and Bangalore. Block printed sarees depict sunflower, gamla, charkhi, elephant in their patterns. The main colors used in block print saris are red, the color of love, yellow the color of spring, blue as in Krishna, and saffron of the yogi. Natural colouring textile materials (Amirbayat J and Hearle J W S , 1986 and Marsh, J.T. 1979) of block print sarees like madder, indigo, pomegranate rind and turmeric have been replaced with alizarine and synthetic dyes, which are less difficult to prepare. Ahmedabad, Sanganer, Bagru, Farukhabad and Pethapur are the major center where block printed saris produced on large scale.

**OBJECTIVES OF THE STUDY**

1. To compare the different block printing designs.
2. To work out the best marketable printing designs in market.
3. To work out the cost of block printing.
4. To work out the use of designed clothes by women.
5. To find out the impact of the designed clothes on the personality development of individuals.
6. To provide knowledge of textile printing technology.
7. To enhance research aptitude for Textile industry.
8. To develop confidence in professional field with reference to textile design industry.
A BRIEF REVIEW OF THE WORK ALREADY DONE IN THE FIELD

MAJOR CENTERS OF HAND BLOCK PRINTING:

Cotton is also printed in Ahmedabad, Sanganer, Bagru, Farukhabad and Pethapur, the main centers in Rajasthan and Gujarat where hand block printing has continued to flourish. In fact the prints of these areas seem to be quite similar. The Bagru and Sanganer prints cannot be easily distinguished but if one looks carefully each has its own typical characteristics.

The Sanganer prints are always on a white background, whereas the Bagru prints are essentially in red and black. Farukhabad is famous for its artistry and intricacy of design. Pethapur near Ahmedabad is known for the finest block printing. Banaras block makers design their blocks to suit fine silk printing - sometimes each design has seven colors. Cellular automata (CA) are discrete dynamical systems of simple construction but complex and varied behaviour. Algebraic techniques are used to give an extensive analysis of the global properties of a class of finite cellular automata. The rule numbers in one-dimensional automata ranging from 0 to 255 have been tested and found to generate mostly geometric patterns. In two-dimensional automaton, the various rule numbers have been tested in 80x80 matrix with a grid size of five pixels and the matrix size extended to 110x110 with a grid size of three pixels each that resulted in chaotic, stable and high life. The behaviour of the neighbourhood cells has been analyzed by their categories, grouped together and represented graphically, resulting in uniform and non-uniform patterns, which may well be utilized for fibre textile designs (Hearle J W S, 1980). The algorithm is designed with an option to generate the rule number itself randomly and hence the design generated is highly unpredictable and it is observed that different patterns are generated to each iteration of the algorithm by S Rajasekaran and R Amalraj (2002). Block designs get bigger and bolder and the delicacy is lost as one move towards the south or towards Calcutta. Today, Andhra Pradesh is a large center for hand block printing. Hyderabad is the home of the very popular Lepakshi
prints. It is quite amazing how the same motif can be interpreted in different forms. Ajarakh prints, popular even today originated in Gujarat involving a resist print, primarily intended for garments for men.

THE PROCESS OF HAND BLOCKS PRINTING:

Block printing has become popular because the simple process can create such sensational prints in rich and vibrant colors. Originally natural dyes were used but today they have been replaced by chemical and artificial colors (Shenai, V.A and Mehra, R.H. 1984). The main colors used are red, the color of love, yellow the color of spring, blue as in Krishna, and saffron of the yogi. The main tools of the printer are wooden blocks in different shapes and sizes called bunta. Blocks are made of seasoned teak wood by trained craftsmen. The underside of the block has the design etched on it. Each block has a wooden handle and two to three cylindrical holes drilled into the block for free air passage and also to allow release of excess printing paste. The new blocks are soaked in oil for 10-15 days to soften the grains in the timber. Wooden trolleys with racks have castor wheels fastened to their legs to facilitate free movement. The printer drags it along as he works. On the upper most shelf trays of dye are placed. On the lower shelves printing blocks are kept ready. The printing starts form left to right. The color is evened out in the tray with a wedge of wood and the block dipped into the outline color (usually black or a dark color). When the block is applied to the fabric, it is slammed hard with the fist on the back of the handle so that a good impression may register. A point on the block serves as a guide for the repeat impression, so that the whole effect is continuous and not disjoined. The outline printer is usually an expert because he is the one who leads the process. If it is a multiple color design the second printer dips his block in color again using the point or guide for a perfect registration to fill in the color. The third color if existent follows likewise. Skill is necessary for good printing since the colors need to dovetail into the design to make it a composite whole. A single color design can be executed faster, a double color
takes more time and multiple color design would mean additional labour and more color consumption.

Different dyes are used for silk and cotton. Rapid fast dyes, indigo sol and pigment dyes are cotton dyes. Printing with rapid dyes is a little more complicated as the dyes once mixed for printing have to be used the same day. Standard colors are black, red, orange, brown and mustard. Color variation is little difficult and while printing it is not possible to gauge the quality or depth of color. It is only after the fabric is processed with an acid wash that the final color is established. Beautiful greens and pinks are possible with indigo sol colors but 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 (Shenai, V.A. 1984). Colors can be tested before printing by merely applying it onto the fabric. The pigment color is made up of tiny particles, which do not dissolve entirely and hence are deposited on the cloth surface while rapid dyes and indigo sols penetrate the cloth. 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 plastic buckets with lids are ideal for storing the mixed colors over a few days.

Cotton saris after pigment printing are dried out in the sun by P. R. Schwartz (1856). This is part of the fixing process. They are rolled in wads of newspapers to prevent the dye form adhering to other layers and steamed in boilers constructed for the purpose. Silks are also steamed this way after printing. After steaming, the material is washed thoroughly in large quantities of water and dried in the sun, after which it is finished by ironing out single layers, which fix the color permanently.
Records show that as far back as the 12th century, several centres in the south, on the western and eastern coasts of India became renowned for their excellent printed cotton. On the south eastern coast the brush or kalam (pen) was used, and the resist applied by the same method. In the medieval age printing and dyeing of cottons was specially developed in Rajasthan. In Gujarat the use of wooden blocks for printing was more common.

Tents were created from printed fabrics and became a necessary part of royal processions. The seasons largely influence the integration of the highly creative processes of weaving, spinning, dyeing and printing. Festivals also dictated this activity. Trade in cotton cloth is said to have existed between India and Babylon from Buddha’s time. Printed and woven cloths traveled to Indonesia, Malaya and the Far East. In the 17th century Surat was established as a prominent centre for export of painted and printed calicos, covering an extensive range in quality. Cheaper printed cloth came from Ahmedabad and other centres, and strangely enough Sanganer was not such a famous centre for printing as it is today. Wall hangings, canopies and floor spreads were created from printed and painted cottons largely in western India for the European market.

Thirty two kilometers east of Jaipur city is a small village called Bagru, where there is a hum of activity even today in the field of hand block printing on textiles (McQuaid M, 2005), using traditionally patterned blocks, and rich natural colours from the Eighth to the Twelfth Century (Moti Chandra, 1960). There has always been some confusion with regard to Sanganer and Bagru prints which are similar, though actually each has distinct characteristics. Sanganer prints initially were printed on white or off-white backgrounds whereas Bagru prints are essentially in two colours – red and black. Sometimes the fabric is dyed and
different colour variations are possible on printed fabric. Commonly, green, black and red are used. Ajrakh prints, popular even today originated in Gujarat involving a resist print, primarily intended for garments for men.

It is possible that when the search was on in alchemic laboratories for the elixir of life to free the body and mind from the pressures of life and ageing, the researchers stumbled on to medicinal plants like harda, myrobalan (Bell, J., 1997). The by-products were doubtless invaluable in the process of dyeing and bleaching and even till today many plants used in archaic dyeing processes are found listed and described in Ayurvedic medical texts. In India every craft has sprung up with the influence of religious traditions. The finest creations of craftsmen were prepared for rituals and the most skilled of dyers, painters, weavers have congregated around main centres of religious worship. India has always been sensitive to colours, which has formed the basis of poetic inspiration, of music, surcharged with the subtle nuances of mood. Red was the colour of love, and madder being fast it could not be washed away.

Yellow was the colour of spring, filled with blossoms and the cry of mating birds. Nila or indigo was the colour of Krishna who is like a rain filled cloud. Gerwa or saffron, was the colour of the yogi, the seer who renounces the earth. The main tools of the printer are the wooden blocks in different shapes and sizes called bunta. The blocks are made of seasoned teak wood though gurjun (grown in the forests of a district in Rajasthan) is being preferred because of its light weight. The blocks are prepared by craftsmen trained in this art. The underside of the block is kept flat, and the design etched on it. Two or three cylindrical holes are drilled into its thickness connecting the upper side of the block to the carved lower surface. The holes help in freeing air bubbles and excess of printing paste if any while printing. Each block has a wooden handle carved on top.

There are various centres for block making and each region has its own speciality. Block makers at Farrukhabad are known for their artistry and intricate
designs, as also those in Pethapur, Gandhinagar 29 kilometres from Ahmedabad. Pethapur is famous for some of the finest printing blocks in the country. Benaras block makers design their blocks to suit fine silk printing, sometime each design their blocks to suit fine silk printing, sometime each design bears seven colours! It is surprising how the same motif can get interpreted differently at each centre. Block designs become bigger and bolder and the delicacy of design gets watered down as one goes south or even towards Calcutta. Andhra Pradesh is a big centre today for hand block printing. Kalahastri and Machilipatnam which are prime centre for kalamkari, have also organized printing with vegetable dyes. Hyderabad is the home of lepakshi prints, a rage in India about 15 years ago. Before new blocks are used for printing they're soaked in oil for 10 to 15 days as this softens the grains in the timber. The wooden printing table is long and rectangular usually about five metres in length, 120 centimeters in width and 90 centimeters in height. In our unit we used tables to accommodate the length and width of a sari so time was not wasted adjusting the material during printing. To offer resilience during printing about 24 layers of jute are stretched taut, and fixed to the tables, covering the entire upper surface. This padding is varied to suit one's convenience. Over this a heavy mattress is spread before printing to present a smooth surface and to absorb any colour that might drop out during the printing process. The mattress or achada is changed and washed frequently so that adhering dyes do not pass on to the new fabric. Wooden trolleys with racks have castor wheels fastened to their legs to facilitate free movement. The printer drags it along as he works. On the upper most shelf trays of dye are placed. On the lower shelves printing blocks are kept ready. The fabric to be printed is washed free of starch and soft bleached if the natural grey of the fabric is not wanted. If dyeing is required as in the case of saris, where borders or the body is tied and dyed, it is done before printing. The fabric is stretched over the printing table and fastened with small pins (in the case of saris the pallu is printed first then the border). The printing starts form left to right. The colour is evened out in the tray with a wedge of wood and the block dipped into the outline colour (usually black or a
dark colour). When the block is applied to the fabric, it is slammed hard with the fist on the back of the handle so that a good impression may register. A point on the block serves as a guide for the repeat impression, so that the whole effect is continuous and not disjoined. The outline printer is usually an expert because he is the one who leads the process. If it is a multiple colour design the second printer dips his block in colour again using the point or guide for a perfect registration to fill in the colour. The third colour if existent follows likewise. Skill is necessary for good printing since the colours need to dovetail into the design to make it a composite whole. A single colour design can be executed faster, a double colour takes more time and multiple colour design the second printer dips his block in colour again using the point or guide for a perfect registration to fill in the colour. The third colour if existent follows likewise. Skill is necessary for good printing since the colours need to dovetail into the design to make it a composite whole. A single colour design can be executer faster, a double colour takes more time and multiple colours would mean additional labour and more colour consumption.

India is today in the fashion forefront in the world. Foreign buyers have been greatly attracted by traditional hand printed textiles, the export trade John Irwin (1957) has been so consistent that traditional printers are kept busy even today and hand block printing has extended itself to non-traditional centers like Delhi, Bombay, Madras and Banglore.

Scope of modernization:

It opens the door for the scope of marketing. To remain successful, every country, and organization participating in the global race has to take care of the enduring components of marketing; namely 'customer value', 'focus', and 'competitive advantage'. Apparel market is competitive and challenging both in terms of manufacturing and retailing. The year 2008 has caused a mixed reaction in the global market for clothing. Looming recession and a resulting economic slowdown has weakened the consumer's confidence thereby considerable
influencing the overall apparel sales for 2008. Asian markets played a key role during 2008. The demographic evolution in Asian countries like India and China, and increasing brand awareness, have caused a drastic change in the preferences of consumers who had began to shift their choice towards branded apparels, boosting the growth of organized children clothing sector (Savitri Pandit, 1976).

**Market Potential**

The marketing problems of small industries clusters in India flow from their scale of operation and rivalry with products of large scale units. Middlemen system of marketing of their products can be still found there as for example Chanderi Cluster of Saree in Madhya Pradesh, India. They can usual explore their nearest market only. “Small units suffer from the absence of a competitive network of wholesalers and trading companies that could introduce their products into domestic and foreign market, and provide them with pertinent market information”. Evidence suggests that in an increasing globalized economy, efficient local business systems (clusters or industrial districts) tend to play a major role.

In India, it is estimated that there are approximately 350 Small Scale Industries (SSI) clusters and around 2000 rural and artisan based clusters contributing to almost 60% of the manufactured exports and 40% of the employment in the manufacturing industry. These clusters have been in existence in India for several decades and sometimes even for centuries. Some of the main obstacles hampering cluster development are the following the lack of a cultural attitude towards cooperation both at the firm and at the institutional level; the significance of the transaction costs that need to be borne to identify suitable network partners and to forge relationships; the absence of incentives (i.e. financial, fiscal, etc.) to the implementation of common projects; the imperfect market functioning for the provision of crucial inputs for networking development such as information and innovation; and the high risk of “free riding”
that is especially faced in contexts where the legal framework to back up joint endeavors is relatively underdeveloped (Ceglie, Dini, Clara, UNIDO 1999). Evidence suggests that the intervention of an "external agent" (i.e. national/regional development agencies, SME support institution, international organizations etc.) that acts as a catalyst to facilitate the emergence of clusters and networks can greatly reduce the significance of the above factors.

The objective of the diagnostic studies was to assess the structure of a sample of SSI clusters in India, identify issues related to their development, and draw lessons on how to develop pilot initiatives together with local firms that would deepen their mutual linkages and improve their performance. Thus, unlike previous approaches, neither the ministry of industry nor UNIDO would decide what services to provide or what initiatives to undertake; but rather the main cluster actors would do so in collaboration with UNIDO and public agencies, based on a joint understanding of local conditions and sectoral prospects. A team of Indian consultants, who later became the UNIDO Focal Point of the programme, conducted these studies through interviews with local firms, producers associations, public sector agencies and research institutions. They mapped out existing business practices, inter-firm relationships and the structure of production in each selected cluster. Their study identified the nature and role of institutional support and market linkages available to SSI in each cluster. It also outlined the main issues raised by firms regarding the problems and opportunities they faced in their particular sector (Tewari, 1997). Moreover, overcome or rectification of all aforesaid problem would lead to market potential in our country.
UNIVERSE OF THE STUDY

In this study, primary data would be collected to identify the problems by random sampling in this study anthropometric and interview by questionnaire shall be followed. Individuals who used block printing fabric will be selected for this study. Interview will be taken from personal visits in the homes, private and government offices and at the public places by asking questions.

These individuals shall be classified on the basis of class-wise. A semi-structured questionnaire shall be prepared and a study shall be undertaken in order to pre-rest the questionnaire.

A few numbers of the industrial units will be approached for the purpose of pre-testing and finalization of the questionnaire is to be done by alteration of some items and addition of some other provisions in the questionnaire. By using the statistical methods (Hodda, R.P., 2003) and Chakravorti, S.R. and Giri, N. 1997), classification, analysis, interpretations have been made and the final results will be given in this report form along with the possible measures to solve the problems (Bulmer, M.C. 1984).

SAMPLE SELECTION:-

It is decided to select a sample of 200 individuals of age group of 25 to 45 years from locations by random method.
Sampling frame and size

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<th>Sex</th>
<th>Age (in years)</th>
<th>Total</th>
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<tbody>
<tr>
<td></td>
<td>20-30</td>
<td>31-45</td>
</tr>
<tr>
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<td>50</td>
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<td>Men</td>
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</tr>
<tr>
<td>Total</td>
<td>100</td>
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Tools of data collection

Data will be collected by the two methods:-

(1) Anthropometric
(2) Questionnaire

In this study the following research methodology have been categorized.

(1) Research Design
(2) Location of Study
(3) Selection of the Institute
(4) Selection of respondent
(5) Variables and their measurements
(6) Development of tool

(a) Selection of tool
(b) Construction of research too
EXPECTED OUT COME OF THE PROPOSED WORK

The impact of western culture tremendously influenced the clothes bearing habits in India resulting excessive daily use of block printing clothes at home as well as at work place. On the basis of aforesaid research the following out come would be highlighted.

1. The cheap and easily accessible block printing is recommended for different category of individuals.
2. This study will provide the information the personality development of individuals.
3. Information would be provided on the use of block printing based on regions.

Research and development in apparel industry is on going process. Every now and then, we encounter new developments, innovations, improvements in existing processes, which are in terms of fabric, style, stitching details, patterns, prints and their designs, but cycle of fashion keeps on revolving and always repeats after certain period. Fashion trends moves in the direction from west to east. Trends which are in the western countries (USA, UK, France and Italy), will be the future trends in east and other countries. In other terms, we can call them fashion trendsetters. Trends are in terms of styling, detailing and patterns, which is the invention of their dexterous designers and trend readers. Innovations and research done in terms of fabric and accessories in China, India, and Hong Kong shall be the basis of styling and patterns of trendsetters (Bell, J. 1997, Jain, G. 1998) and Kumar, A.1997, 2002). Eventually call them supporters/active participants of the trends.

Nevertheless, we can segregate the whole apparel and fashion world in three categories.
1. Fashion and trend-setter countries
2. Retailing, Marketing and merchandising specialist countries
3. Sourcing, Production and process oriented countries

1. Fashion and trendsetter countries are France, Italy, UK and USA. We find lots of excellent designers, designing institutes, fashion stores, boutiques, and renowned brands. Like- Chanel, Armani, Hugo Boss, GAP, A&F, Valentino etc.

2. Marketing and Merchandising specialist countries are USA, UK, Hong Kong & India. They have the best concepts of marketing, retailing and merchandising in their own areas. Due to presence of the best fashion merchandising schools, they have good command over their retailing and marketing skills, India and Hong Kong are the emerging markets nowadays in terms of their retailing plans and encouragement to satisfy the domestic demand. Like- Macys, Wal-Mart, Target, GAP, A&F, Nordstrom, Reebok, Nike, Sainsbury, Lifestyle, Wills lifestyle, Max. etc.

3. Sourcing, Production and process-oriented countries are China, India, Vietnam & Bangladesh. They are export & process oriented countries due to less expensive labor, cheap raw material and govt. encouragement to exports. They are the best in to their own areas of specialization. Like- LinFung, Must Garments, Lenny Fashions, GI, Orient Craft etc. There are many other countries, which are the part of above-mentioned categories like Spain, Germany, Pakistan, Canada, Brazil, Thailand etc. Nevertheless, they cover only a small part of these categories.

However, buyers study the trends very carefully, understanding the concepts of behavior of consumers, their presence, their aesthetic sense etc. Generally, when we get into this concept, we find that North American buyers travel to European markets to grab the idea of fashion trends, stories, themes and color combinations. After studying the market, they apply the same to
prepare their style packages, to get the prices and costing from vendors. It applies the same to European buyers; visit the America or Retail outlets of US based brands to sense the market trends. Many Italian/US brands emphasis to colors and hand feels with their basic patterns. Brands like UCB, American eagle are the examples of these outfits. However, it is presumed thinking that, It is not the color, but also the hand feel, which sells the garment into the market. Colors are their to tempt the customers to pull them in the showroom, it is the hand feel and price, which ultimately satisfy their aesthetic desires and psychological needs. Behavior is a quite personal term to be used, but their behavior always depends on the behavior of their customers and competitors. All buyer look for, all kind of resorts to launch their product first, with improved innovations in market, to fetch the sales profit. This is the nature of business, first come first profit. Who reaches the destination first, is the winner of the game?

Bagru, a rural Indian village in Rajasthan is situated around thirty kilometers east of Jaipur city. Its traditional process of hand block printing on textiles, with rich natural colors has been known for many centuries. The elaborate and rich colored floral prints of Bagru are very distinctive, so much so, that the renowned Calico Museum of Textile in Ahmedabad, India, commissioned a three years study in 1970s of the villages printing and dyeing transition. The village hums with much activity today, supplying the exquisite printed material for export trade. Buses and Jeeps are the main source of transportation available between Jaipur and Bagru.
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List of published papers / Abstract of the candidate.

Two research papers were presented in different seminars and their abstract has been published in the proceedings. While, the full papers are under processing for publication.

1. Corn Pulav ke kya kehne dated 7th June 2010 name of the paper “Aaj Samaj”.

Signature of supervisor
(Prof. Renu Bala Sharma)

Signature of the Candidate
(Smt. Shilpi Kapoor Dhall)

Signature of co-supervisor
(Dr. Charu Katare)

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