DIGITIZATION OF TRADITIONAL MOTIFS FOR COMPUTERIZED MACHINE EMBROIDERY

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Abstract

Motif is the most basic unit with the help of which a design or a composition is made. Motifs are often inspired from nature and are also closely linked to natural, cultural, religious and socio-economic factors prevailing in any society. Motif has a distinct identity of its own in a pattern or design. For the development of motifs thirty selected traditional motifs were developed using CAD software into contemporary form and samples were created from these motifs.

Keywords: Motif, Computer aided designing, Digitization, Computerized embroidery.

Introduction

A motif is the most basic unit or the smallest unit of pattern. Motifs are repeated in different ways to create patterns and these patterns are repeated to create a design. Each motif is generally developed from a geometrical shape or a combination of different geometrical shapes. The motifs may be classified as Geometric, Realistic or Natural, Stylized, Abstract.

Geometrical motifs may be created during the weaving or knitting fabric construction process. If motifs are applied as prints after the fabric is constructed, ensuring that lines are straight with the yarns of the fabric is important; otherwise the finished garment will be unsightly. A distinctive geometric design may dictate the garment styling and limit the possibilities for using the fabric. Geometric designs may require additional fabric in order to match the motifs during the layout and construction.

Natural motifs portray as direct replica of things as they exist in nature, such as flowers on trees, animals in jungle, human figure and other natural things. They also called novelty patterns. As these motifs lack a designer's creativity and require three-dimensional platform to copy reality, they do not find wide acceptance in apparel designing. Examples of realistic motifs are animals; animal skins, fruit, games, toys, mythological designs, vegetables, shells and jungle etc. are all form the natural or realistic designs. Stylized Motifs are simplified variations of natural or man-made objects that are no longer recognizable. These motifs are full of creativity, as they are the result of a designer's interpretation of naturally existing things. Stylized motifs are obtained by rearranging the real objects either by simplifying or exaggerating them to achieve the purpose of the design.

Examples of stylized Motifs are flower spilling out of basket, flowerpots, vases, bouquets and all that coming out the designer's imaginary ideas form the stylized designs.

Abstract Motifs are combinations of colour, size, and shape without relationship to natural or man-made objects. They are full of colour and interest to the fabric. Abstract implies an element of impression and a greater freedom than is found in most geometric designs. This type of design is used in modern art. Examples of Abstract Motifs Realistic, stylized, and abstract motifs may be easier or more difficult to use depending on the size of the motif, the contrast between the motif and the background, and whether or not the design is multiple-direction or one-way. Smaller size motifs, softened shadings, and multiple direction designs are easier to sew and wear.

Methodology:
The methodology i.e. the methods and procedures undertaken for the development of data with the objectives of development of motifs for computerized machine embroidery samples may be described by a series of steps described as figure 1.
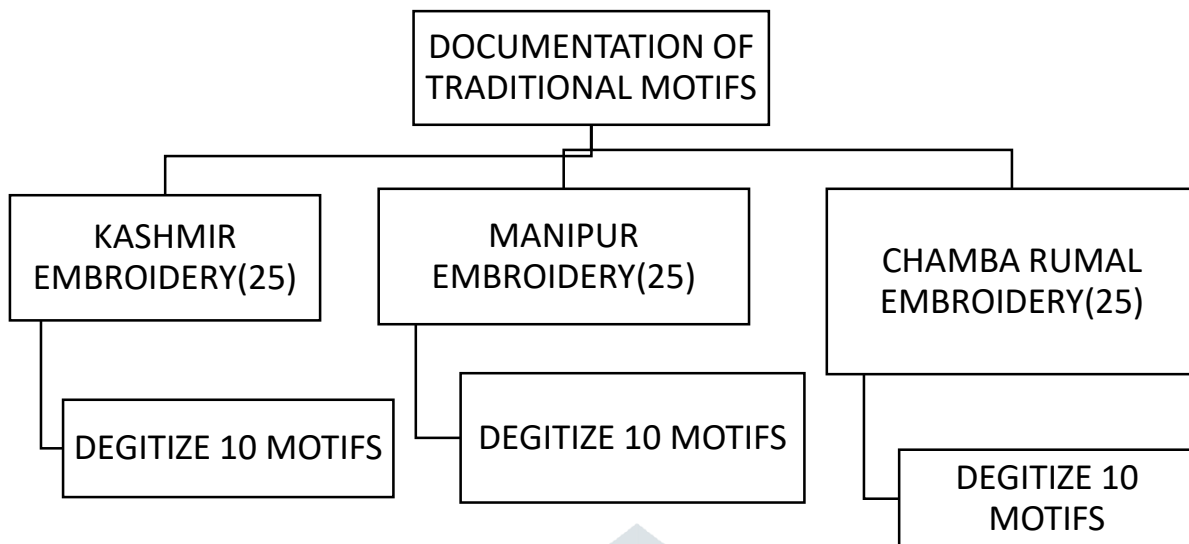
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                    ┌─────────────────────┐
                    │   DOCUMENTATION OF  │
                    │  TRADITIONAL MOTIFS │
                    └─────────────────────┘
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Figure 1

Results and discussion

Total 75 motifs were collected and critically analysed by researcher and advisor, on the basis of their suitability to traditional work for computerized machine embroidery. The 10 motifs of Kashmir embroidery, Manipur embroidery and Chamba embroidery were screened and sketched manually as well as scanned from books; magazines etc. were again digitized by CAD using Willcom software to get the required intricacy and fineness. The created Kashmir embroidery motifs are presented in Figure 2, Manipur embroidery are presented in Figure 3 and Chamba embroidery motifs are presented in Figure 4.

DEPICTED MOTIF	DIGITIZED MOTIF	DEPICTED MOTIF	DIGITIZED MOTIF
KM1		KM2	
KM3.5		KM4	
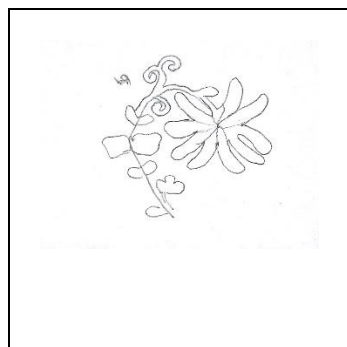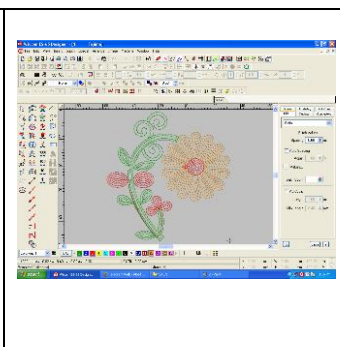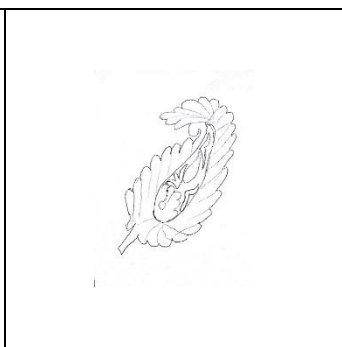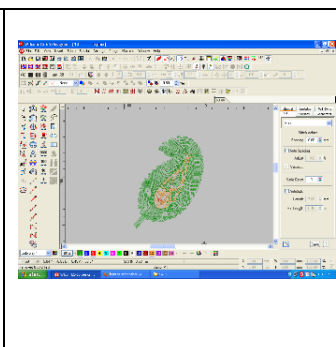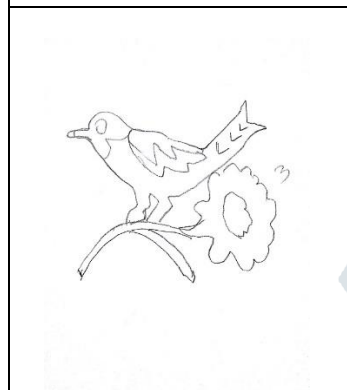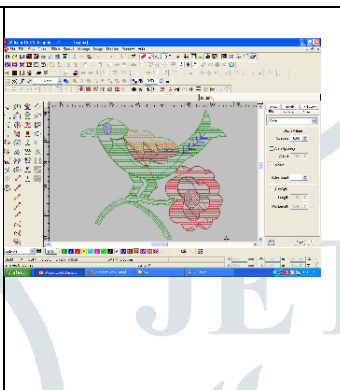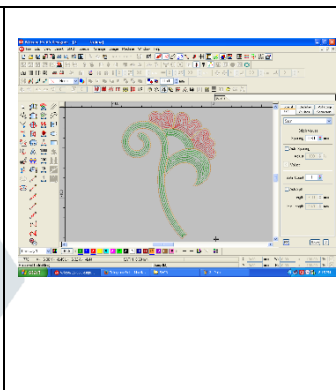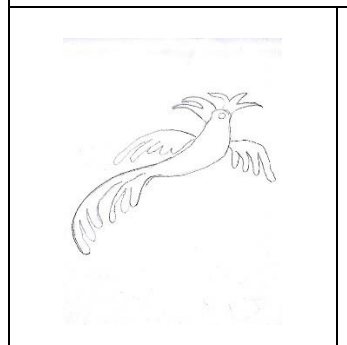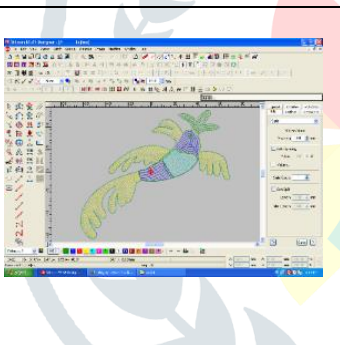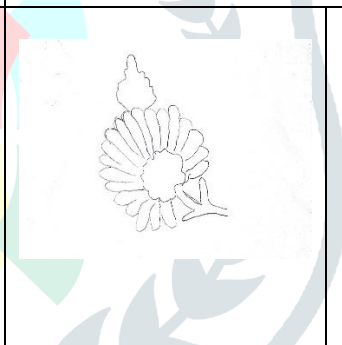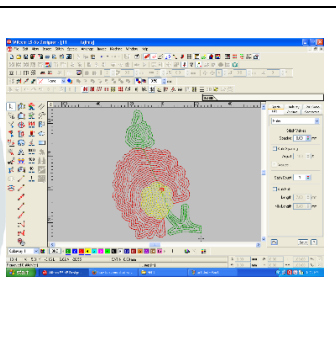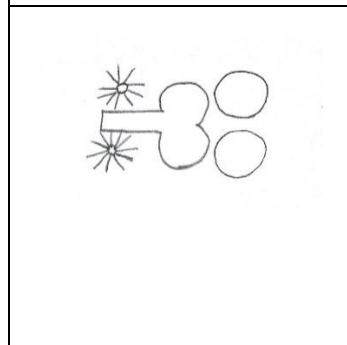
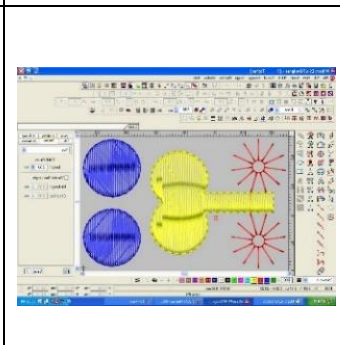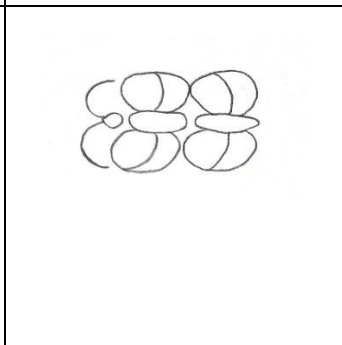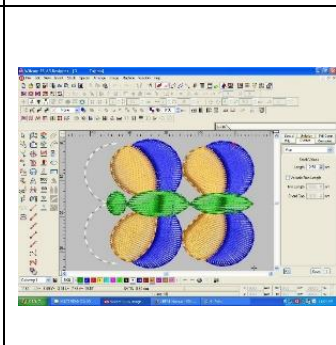|	
KM5	KM6
KM7	KM8
KM9	KM10

Figure 2 Digitised motifs of Kashmir embroidery (KM: Kashmir Embroidery Motif)

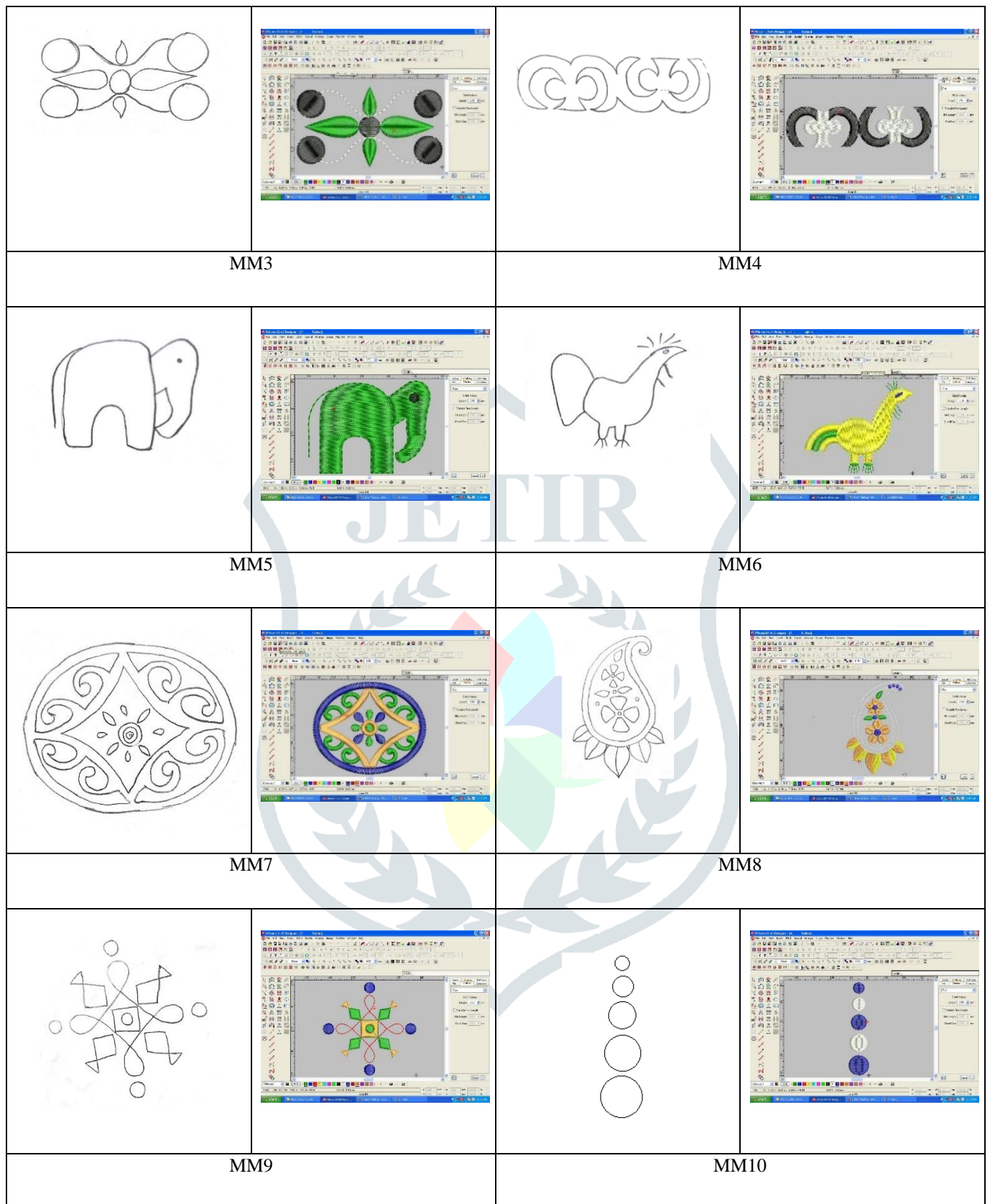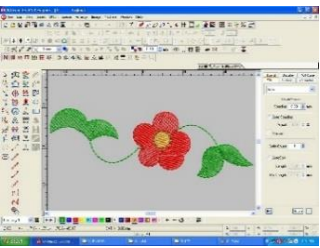| DEPICTED MOTIF	DIGITIZED MOTIF	DEPICTED MOTIF	DIGITIZED MOTIF
MM1		MM2	

MM3	MM4
MM5	MM6
MM7	MM8
MM9	MM10
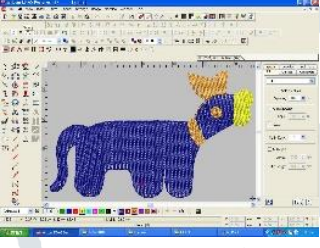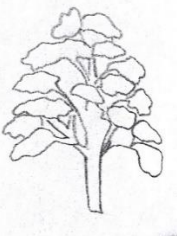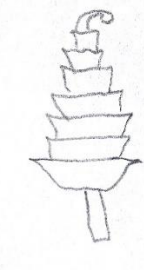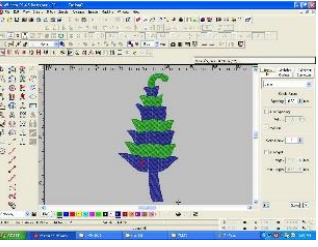
Figure 3 Digitised motifs of Manipur embroidery MM: Manipur Embroidery Motif)

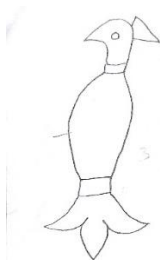| DEPICTED MOTIF	DIGITIZED MOTIF	DEPICTED MOTIF	DIGITIZED MOTIF
CM1		CM2	
CM3		CM4	
CM5		CM6	
CM7		CM8	

CM9	CM10

Figure 4. Digitized motifs of Chamba embroidery (CM: Chumba Embroidery Motif)

The weighted mean score obtained by evaluation of digitized motifs are quoted in table 1

Table 1. Weighted Mean Score obtained by digitized motifs (n=15)

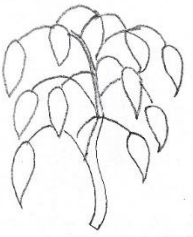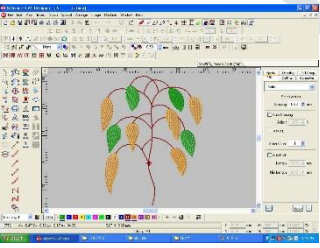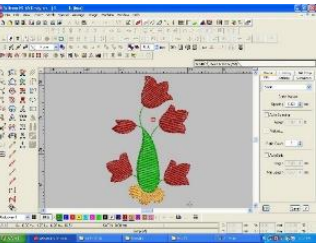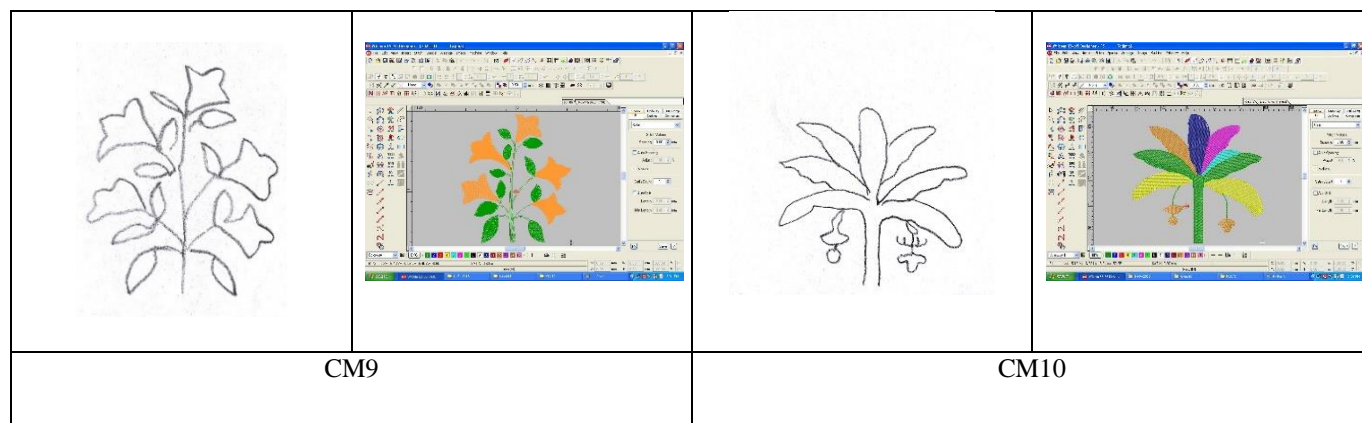| SR.NO.	Kashmir Embroidery Motif		Manipur Embroidery Motif		Chamba Rumal Embroidery Motif	
	Motif No.	WMS	Motif No.	WMS	Motif No.	WMS
1	KM1	4.33	MM1	5.00	CM1	5.00
2	KM2	4.96	MM2	4.93	CM2	5.00
3	KM3	4.86	MM3	5.00	CM3	5.00
4	KM4	4.46	MM4	5.00	CM4	5.00
5	KM5	4.33	MM5	5.00	CM5	5.00
6	KM6	4.33	MM6	4.93	CM6	4.33
7	KM7	4.93	MM7	4.33	CM7	4.93
8	KM8	4.60	MM8	4.46	CM8	5.00
9	KM9	4.46	MM9	4.73	CM9	5.00
10	KM10	4.86	MM10	4.86	CM10	5.00

· KM: Kashmir embroidery motif, MM: Manipur embroidery Motif, CM: Chamba embroidery motif

Total 30 motifs were evaluated by panel of judges on five point rating scale. The results from table 1 revealed that *Kashmir embroidery* motif KM2 got the highest WMS of 4.96, whereas for *Manipur embroidery motif* MM 1, MM3, MM4, MM5 got the highest WMS of 5.00. For *Cumba embroidery motif,* highest WMS was obtained by CM1, CM2, CM3, CM4, CM5, CM8, CM9, and CM10. The motifs developed were traditional, innovative and creative. As per the suggestions the fineness and intricacy of motifs were further improved by creating the motifs, curvilinear and pointed at ends to get better result. From the result it can be analysed that the traditional motifs were highly appreciated.

Conclusion
From the study it was concluded that the traditional motifs can be digitized for computerized machine embroidery. The motifs were successfully adapted by CAD for the application of surface enrichment of designing. As a logical extension the chosen and developed motifs may be used for the development of samples of computerised machine embroidery. Thus traditional motifs were depicted for computerized machine embroidery to save the time and expenditure as well as maintain heritage of India.

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