ISO/IEC JTC 1/SC 2/WG 2

PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS

FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646.

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from _<u>http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html</u>_ for guidelines and details before filling this form.

Please ensure you are using the latest Form from .<u>http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html</u>.

See also <u>http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html</u> for latest *Roadmaps*.

A. Administrative

1. Title:	Indian Classical	lian Classical Music Notation Character-Glyphs(Gurmukhi Version) in UTC				
2. Requester's name	e:	Hardeep Singh Jav	wanda, Indermohan Singh,			
		Gurjit Singh, Jaspreet Singh, Gursehajvir Singh				
3. Requester type (Member body/Liaison/Individual contribution):			Individual contribution			
4. Submission date:			10-NOV-2013			
5. Requester's refer	ence (if applicable):					
6. Choose one of th	6. Choose one of the following:					
This is a co	mplete proposal:					
(or) More information will be provided later:			This			

B. Technical – General

1. Choose one of the follow	ing:				
a. This proposal is for	No				
Proposed nam	ne of script:				
b. The proposal is for	addition of character(s) to an existing	block:			
Name of the e	xisting block:		Gurmukhi block		
2. Number of characters in p	15				
3. Proposed category (select	t one from below - see section 2.2 of F	P&P docume	ent):		
A-Contemporary	B.1-Specialized (small collection)	Yes	B.2-Specialized (large collect	ion)	
C-Major extinct	D-Attested extinct		E-Minor extinct		
F-Archaic Hieroglyphic or Ideographic G-Obscure or questionable usage symbols					
4. Is a repertoire including c	No				
a. If YES, are the names in accordance with the "character naming guidelines"					

¹ Form number: N4102-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

	in Annex L of P&P document?	
	b. Are the character shapes attached in a legible form suitable for review?	
5. Fo	onts related:	
	a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the st	andard?
	Kulbir Thind	
	b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site,	etc.):
	drksthind@yahoo.com	
6. Re	eferences:	
	a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	Yes
	b. Are published examples of use (such as samples from newspapers, magazines, or other sources)	
	of proposed characters attached? Yes	
7. Sp	pecial encoding issues:	
	Does the proposal address other aspects of character data processing (if applicable) such as input,	
	presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?	No
8. Ad	dditional Information:	
assist prope breal Mark <u>http:</u>	mitters are invited to provide any additional information about Properties of the proposed Character(s) or Set st in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examp perties are: Casing information, Numeric information, Currency information, Display behaviour information s aks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour rk Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Uni p://www.unicode.org_ for such information on other scripts. Also see Unicode Character Database (p://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for c Unicode Technical Committee for inclusion in the Unicode Standard.	oles of such such as line r, relevance in icode standard at

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	No				
If YES explain					
2. Has contact been made to members of the user community (for example: National Body,					
user groups of the script or characters, other experts, etc.)?	Yes				
If YES, with whom? Dr. Alankar Singh, Prof. of Indian Classical Music, Punjabi					
University,Patiala,Punjab(India).					
If YES, available relevant documents:					
3. Information on the user community for the proposed characters (for example:					
size, demographics, information technology use, or publishing use) is included?	Yes				
Reference: Every Indian Classical Music Institute in Punjab.E.g.: Punjabi Univers	ity,Patiala.				
4. The context of use for the proposed characters (type of use; common or rare)	Common				
Reference:					
5. Are the proposed characters in current use by the user community?	Yes				
If YES, where? Reference:					
6. After giving due considerations to the principles in the P&P document must the proposed characters be e	ntirely				
in the BMP?					
If YES, is a rationale provided?					
If YES, reference:					
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	No				
8. Can any of the proposed characters be considered a presentation form of an existing	Yes				
character or character sequence?					
If YES, is a rationale for its inclusion provided?					
If YES, reference: Mentioned in Attachment					
9. Can any of the proposed characters be encoded using a composed character sequence of either					
existing characters or other proposed characters? No					
If YES, is a rationale for its inclusion provided?					
If YES, reference:					
10. Can any of the proposed character(s) be considered to be similar (in appearance or function)					
to, or could be confused with, an existing character?	Yes				
If YES, is a rationale for its inclusion provided?					

If YES, reference:	Mentioned in Attachment	
11. Does the proposal include use of combin	Yes	
If YES, is a rationale for such use provi	ded?	
If YES, reference:	Mentioned in Attachment	
Is a list of composite sequences and the	neir corresponding glyph images (graphic symbols) provided?	Yes
If YES, reference:	Mentioned in Attachment	
12. Does the proposal contain characters with	th any special properties such as	
control function or similar semantics?		No
If YES, describe in detail (inc		
13. Does the proposal contain any Ideograph	nic compatibility characters?	No
If YES, are the equivalent correspondi	ng unified ideographic characters identified?	
If YES, reference:		

Doc Type: Working Group Document Title: Proposal for the Addition of Indian Classical Music symbols to the UCS Source: Hardeep Singh Jawanda, Indermohan Singh, Gurjit Singh, Jaspreet Singh Status: Individual Contribution Date: 6 –Nov-2013

This proposal is to include theIndian Classical Music symbols to UCS. The new symbols are 15, namely, **Komal, Teevar ,Mandar , Taar**and also **the super script versions of these symbols and some of the existing symbols** to the Gurmukhi block of the Unicode. First of all just have look on the basics of Indian Classical Music so we will get proper knowledge of required and existing symbols.

BASICS OF INDIAN CLASSICAL MUSIC :-

Indian classical music is one of the oldest forms of music in the world. It has itroots in diverse areas such as the ancient religious vedic hymns, tribal chants, devotional temple music, and folk music. Indian music is melodic in nature, as opposed to Western music which is harmonic. Although Indian music is now divided into the two major classes of **Hindustani** (Northern Indian) and **Carnatic** (Southern Indian), the origins and fundamental concepts of both the types of music are the same.

The fundamental concepts that have to be understood at the outset are those of swara (musical note), raga (a melodic concept, or scale of notes) and tala (beats of timing or rhythm).

Swara:- Swara is a note of definite pitch which conveys an expression of charm and sweetness to the mind. Shruti is "the measure and the swara is the thing measured." There are seven basic swaras. These remain same but there appearance can be different based on the language used . It is as follows :-

SHADJA	-	Sa
RISHABH	-	Re
GANDHAAR	-	ga
MADHYAM	-	Ma
PANCHAM	-	Pa
DHAIVAT	-	Dha
NISHAAD	-	Ni

Types of swaras(notes) :-

Komal Swara:- From the above 7 swaras **Rishabh**, **Gandhar**, **Dhaivat**, **Nishad** can be moved below there original place on the scale. These types of swaras are called as komal (**Soft or Flat**).

Teevra Swara :- From the above 7 swaras only the Madhyam swara can be made Sharp by placing the vertical line above the symbol.

In Indian Classical music 3 Saptaks (Octaves) are usually utilized :-

Saptak : When the set of seven notes is played in the order it is called a Saptak (i.e. Sa ,Re, Ga, Ma, Pa, Dha, Ni)

Maddhya Saptak : The normal tone of human voice, which is neither high nor low. It is called Maddhya Saptak (Middle Octave). This has got no symbol in the notation system.

Taar Saptak : The one higher than Maddhya Saptak is Taar Saptak (High). The notes are high and sharp. This shown by a dot above the note. Two dots above the note imply a note of an octave higher than the Taar Saptak i.e. Ati Taar Saptak.

Mandra Saptak : The one octave below the Maddhya Saptak is called Mandra Saptak(Low). Notes of this octave are sung or played in a low deep tone. This comprises of the saptak which is below the lower Sa of the Maddhya Saptak. Notes of this saptak are indicated by a dot below the note.

S.NO.	NAME	SYMBOL	UNICODE	REMARKS
1.	GURMUKHI SHADAJ (Sa)	ਸ	ØA38	This is the first swara(note) in any Indian Classical Music script. This is the shuddha(pure) swara.
2.	GURMUKHI RISHABHA (Re)	ਰੇ	0A30 + 0A47	This is the second swara(note) in any Indian Classical Music script.
3.	GURMUKHI GANDHAR (Ga)	ਗ	ØA17	This is the third swara(note) in any Indian Classical Music script.

TABLE 1 : Showing all the Swaras(notes) used in the Indian Classical Music Notation (in Gurmukhi script)

4.	GURMUKHI MADHYAM (Ma)	н	ØA2E	This is the fourth swara(note) in any Indian Classical Music script.
5.	GURMUKHI PANCHAM (Pa)	ਪ	0A2A	This is the fifth swara(note) in any Indian Classical Music script. This is also the shuddha(pure) swara(note) as Sa.
6.	GURMUKHI DHAIVAT (Dha)	ਧ	0A27	This is the sixth swara(note) in any Indian Classical Music script.
7.	GURMUKHI NISHAD (Ni)	ਨੀ	0A28 + 0A40	This is the last swara(note) in any Indian Classical Music script.
8.	KAN SWAR GURMUKHI SHADAJ (Sa)	ਸ;	NOT IN UNICODE	Same as Shadja(Sa) swara(note) but used as superscript. Here the dotted circle will represent the other swara(note) in music notation.
9.	KAN SWAR GURMUKHI RISHABH (Re)	ਰੇ	NOT IN UNICODE	Same as Rishabha(Re) swara(note) but used as superscript. Here the dotted circle will represent the other swara(note) in music notation.
10.	KAN SWAR GURMUKHI GANDHAR (Ga)	ਗ	NOT IN UNICODE	Same as Gandhar(Ga) swara(note) but used as superscript. Here the dotted circle will represent the other swara(note) in music notation.
11.	KAN SWAR GURMUKHI MADHYAM (Ma)	ਮ	NOT IN UNICODE	Same as Madhyam(Ma) swara(note) but used as superscript. Here the dotted circle will represent the other swara(note) in music notation.
12.	KAN SWAR GURMUKHI PANCHAM (Pa)	ਪ	NOT IN UNICODE	Same as Pancham(Pa) swara(note) but used as superscript. Here the dotted circle will represent the other swara(note) in music notation.

13.	KAN SWAR GURMUKHI DHAIVAT (Dha)	य	NOT IN UNICODE	Same as Dhaivat(Dha) swara(note) but used as superscript. Here the dotted circle will represent the other swara(note) in music notation.
14.	KAN SWAR GURMUKHI NISHAD (Ni)	ਨੀ	NOT IN UNICODE	Same as Nishad(Ni) swara(note) but used as superscript. Here the dotted circle will represent the other swara(note) in music notation.

TABLE 2 : Proposed Diacritical Marks used with the above Musical Notation Base Characters and are common for most of the Indian Classical Music Scripts.

S.NO.	NAME	SYMBOL	UNICODE	REMARKS
1.	TAAR SAPTAK	Ċ	NOT IN UNICODE	This is symbol which is used to represent higher octave.
2.	MANDRA SAPTAK	•	NOT IN UNICODE	This is the symbol which is used to represent the lower octave.
3.	KOMAL	ੂ	NOT IN UNICODE	This is symbol which makes the swara(note) flat.

4.	TEEVAR	ੋ	NOT IN UNICODE	This is the symbol which makes the swara(note) sharp.
5.	SUPERSCRIPTED TAAR SAPTAK	ं	NOT IN UNICODE	Same as symbol 1 but used as superscript. It is used with kan swaras.
6.	SUPERSCRIPTED MANDRA SAPTAK	़	NOT IN UNICODE	Same as symbol 2 but used as superscript. It is used with kan swaras.
7.	SUPERSCRIPTED KOMAL	ੁ	NOT IN UNICODE	Same as symbol 3 but used as superscript. It is used with kan swaras.
8.	SUPERSCRIPTED TEEVAR	<u>.</u>	NOT IN UNICODE	Same as symbol 4 but used as superscript. It is used with kan swaras.
9.	COMBINING SWAR MARK (TO REPRESENT COLLECTION OF SWARS)	Examples of usage: (i) (ii) (iii) (i	NOT IN UNICODE	This is combining swara mark which can be used to combine 2 swaras(notes) to n swaras(notes). It has the formatting which is similar to as underline.

JUSTIFICATION OF EACH SYMBOL :-

There are altogether 23 symbols in the above tables. Among these 23 symbols, 7 symbols are already defined in the Unicode chart. Now there are certain symbol like 8 - 14 of **table 1** which are not in the Unicode but they are just superscript of all the 1 - 7 symbols of Gurmat Sangeet(Indian classical music gurmukhi version) as descripted in **table 1**. So, there are total of 16 (9 Symbols + 7 grace notes) need to be encoded.

The justification of each symbol (marked 'not in Unicode' in above tables) to encode it in UCS is given below :-

- <u>Mandra saptak</u> symbol is required in Gurmat sangeet(rooted in Indian Classical Music) for lowering the octave as described earlier. It is used with all the swaras (notes + grace note too) even with other symbols such as of komal and teevra(descripted below). It is similar to **gurmukhi sign nukta** having Unicode **'0A3C'** but there is positioning problem with the **swaras**(notes). In actual we require output which is shown below in **examples.**
- <u>Taar saptak</u> symbol is similar to the symbol **gujrati sign anusvara** having Unicode **'0A82'** but unfortunately it can only be used in the Gujrati language. The swaras(notes) having this symbol are sung in high and sharp voice. In Indian classical music it is used with every swar (note) and we will have the results in following manner :-

ਸਂ ਰੇਂ ਗਂ ਮਂ ਪਂ ਧਂ ਨੀਂ ਰੁੱ ਗੁਂ ਮਂ ਧੁਂ ਨੀਂ

As we can see that this symbol is placed in center of any swar (note) till there is no other symbol placed with it and if any other symbol is placed it is shifted to the right side.

We require a similar symbol in gurmukhi block of **UCS** so that we can get required output as shown in **figure-1**

• <u>Komal</u> is same as 'b' symbol used in Sheet MusicNotation. In Indian Classical Music, it is only used with the following swar(notes) :

```
ਰੇ ਗ ਧ ਨੀ
and Result will be look like :
ੁਰੇ ਗੁ ਧੁ ਨੀ
```

There is similar character available in Unicode Standard in Gurmukhi Block which has Unicode (Hex) value '0A41'But Unicode Encoding doesn't support combination

like: ਨੀ ਰੇ

ס ס

Because it is not correct according to Punjabi Language. But it is must required in Indian classical music example section given later in this proposal.

<u>Teevra</u> is similar to the '#'symbol in the sheet music notation. But in Indian Classical Music notation it is used only with the swara(note):
 H (Unicode Hex '0A2E')

and the results will look like this \mathcal{A}

In present time , in Unicode we have similar symbol to it but the result is not valid. It shows certain position problem like this :-H

• <u>Kan swara</u> is just the superscript version of all the main 7 swars in Indian Classical music. It s actually the **grace note**(of Western music). Although it is used less frequently used but without it Indian classical music can't be completed. It has appearance like this :-

^{ਰੇ}ਸ ^{ਗ਼ਂ}ਨੀ

In the above example the swaras (notes) $Rishabh(\vec{d})$ and $Gandhar(\vec{d})$ are

represented as **Kan swaras**. In Indian Classical Music these are important for the proper rendition and essential to create the beauty of a <u>raga</u>. Some notes are linked with its preceding and succeeding note; these linked notes are called **Kan-swars** (= *grace notes*). Kan-swars deal with so called *touch notes*.

Proposed Draft:-

S.NO.	NAME	PROPOSED UNICODE
1.	KAN SWAR GURMUKHI SHADJA (Sa)	0A52
2.	KAN SWAR GURMUKHI RISHABH (Re)	0A53
3.	KAN SWAR GURMUKHI GANDHAR (Ga)	0A54
4.	KAN SWAR GURMUKHI MADHYAM (Ma)	0A55
5.	KAN SWAR GURMUKHI PANCHAM (Pa)	0A56
6.	KAN SWAR GURMUKHI DHAIVAT (Dha)	0A57
7.	KAN SWAR GURMUKHI NISHAD (Ni)	0A58
8.	KOMAL	0A76
9.	TEEVRA	0A77
10.	MANDRA	0A78
11.	TAAR	0A79
12.	SUPERSCRIPTED KOMAL	0A7A
13.	SUPERSCRIPTED TEEVRA	0A7B
14.	SUPERSCRIPTED MANDRA SAPTAK	0A7C
15.	SUPERSCRIPTED TAAR SAPTAK	0A7D
16.	COMBINING SWAR MARK (TO REPRESENT COLLECTION OF SWARS)	0A7E

Unicode Character Properties. Character properties are proposed here.

0A52;Superscript GurmukhiShadja(Sa);Lm;0;L;<super> 0A38;;;;N;;;;; 0A53;Superscript GurmukhiRishabh(Re);Lm;0;L;<super> 0A30 0A47;;;;N;;;;; 0A54;SuperscriptGurmukhiGandhar (ga);Lm;0;L;<super> 0A17;;;;N;;;;; 0A55;SuperscriptGurmukhiMadhyam(Ma);Lm;0;L;<super> 0A2E;;;;N;;;;; 0A56;SuperscriptGurmukhiPancham (Pa);Lm;0;L;<super> 0A2A;;;;N;;;;; 0A57;SuperscriptGurmukhiDhaivat(Dha);Lm;0;L;<super> 0A27;;;;N;;;;; 0A58;SuperscriptGurmukhiNishad(Ni);Lm;0;L;<super> 0A28 0A40;;;;N;;;;; 0A76;Komal Swara;Mn;220;NSM;;;;;N;;;;; 0A77;Teevra Swara;Mn;232;NSM;;;;;N;;;;; 0A78;Mandra;Mn;220;NSM;;;;;N;;;;; 0A79;Taar;Mn;230;NSM;;;;;N;;;;; 0A7A;Superscripted Komal Swara;Mn;220;NSM;<super> 0A76;;;;N;;;;; 0A7B;SuperscriptedTeevar Swara;Mn;232;NSM;<super> 0A77;;;;N;;;;; 0A7C:Superscripted Mandar;Mn;220;NSM;<super> 0A78;;;;N;;;;; 0A7D;SuperscriptedTaar;Mn;230;NSM;<super> 0A79;;;;N;;;;; 0A7E;Combining Swara;Mn;233;NSM;;;;;N;;;;;

Bibliography:

Swar samud (Shabad Reet Ratnawaali) -Book by prof. Paramjot Singh published by Sikh Missionary College, Ludhiana.

Gurbani Sangeet (part -1,2) -Book by sh. Gian Singh ji Ebtabaad published by Shromani Gurudwara Prabhandhak Committee (SGPC) , Sh. Amritsar

Saral Sikh Sangeet Reet -Book by prof. Kulwant Singh Chandan published by Chattarsingh and Jeevansingh

Examples :

<u>ਅੰ</u> ਤ ਮ ਗਾ 0	<u>ਤਰਾ</u> ਮ s	ਮ ਵ					and the second second	v			•ਸ s		ਨ ਕ	•ਸ ਤੇ
•ਰ ਸੰ •	• ध	ਪ ਧਿਆ	ਪ ਈਐ	ਗੁ ਜਿ	•ਗੁ ਨਿ	•ਰ ਹ	•ਰ ਮ	•ਗੁ ਕੀ	ਸ s	•ਰ ਏ	ਨ ਜੀ	•ਸ ਉ	ਸ s	ਸ s s

Figure -1: Green marked areas show the usage of Taar symbol in the Raga Majh of Swar samud book. Here the red marked areas show the wrong usage of Komal symbol in Gandhar(Ga) swara(note).

				ਗੁਰਬਾਣੀ	ਸੰਗੀਤ			84
ਰ	н	น	-ਧਨ	ਪਧ	ਸਂ	ਸ਼ਰ	ਸ਼ਰਗਰ	ਧ ਸੰਨਪਧ
ਭਰ	ਮੁਗ	ਇਆ	s ব্য s	รฮ	<u>f</u> uਰ	ਸੰਗਿ	มิรรร	ਗੇਤਤਤ
				ਅੰਤ	ਰਾ			
น	นข	ਸਂ	ਸ਼ਂਸ਼	—	ਸ਼ਰ	đ	ਸ਼ਰਗਰ	मतपत
ਦੂ	મા	5	ਜਬ	5	ฮิร	3	ਦੂਤਤਤ	fasss
ਸ਼ਸ਼	ठ्य	ਪਧ	ਪਮ	-u	ਮ ਗ	ਰ ਸਰ	ਗ-ਰ	ਸ
ਅਬ	ня	ਲਤਿ	ਸੌਹਿ	55	ਮਿਲਿ	รฮ	ਵੁऽऽ	ਰਿ
			ਰਾਗ ਆਸ ਹਰਿ ਕਾ ਨ ਸੰਗੀ ਸਾਥੀ ਸ ਗੁਰੁ ਮੇਰੇ ਸੀਰ ਸਿਮਰਿ ਸਿਮੀ ਤੇਰਾ ਕੀਆ ਮ	ਨਾਮੁ ਰਿਵੇ ਗਗਲ ਤਰ ਗ ਸਦਾ ਹੈ ਰ ਤਿਸ਼ੁ ਸ	ਏ ਨਿਤ ਧਿਆਂ ਾਂਈ ॥ ੧ ॥ । ਨਾਲੋ ॥ ਜਦਾ ਸਮ੍ਰਾਲੋ ।			
			ਹਰਿਨਾਮੁ ਪਦ	ਾਰਥੁ ਨਾਰ	ਤਕੁ ਮਾਂਗੇ ॥	1	ਾ ਮ: ੫, ਪੰਨ	

Figure 2 :- Green marked area shows the use of combing swar mark where it combines 2 swaras in one area and 4 swaras in other in a raga Asacompositon from Gurbanisangeet book (part -1,2) by sh. GiansinghjiEbtabaad

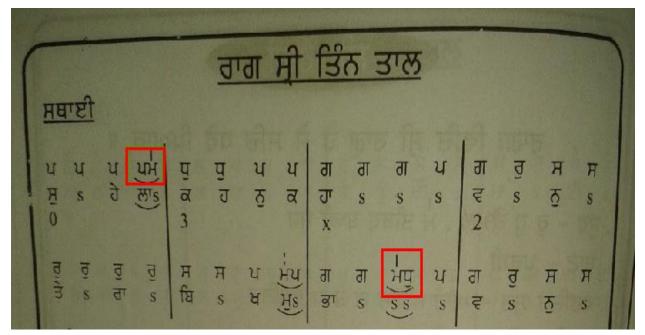


Figure 3 :- Red marked areas show the wrong use of teevra swara Madhyam(Ma) due to lack of Unicode. So there is almost printing problems in every book printed.

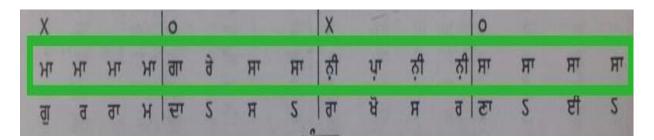


Figure 4 :- In third vibhaag(part), under the second cross sign, of this composition the correct use of mandra saptak is shown which indicates that the respective swaras(notes) are of lowest octave(mandra saptak).

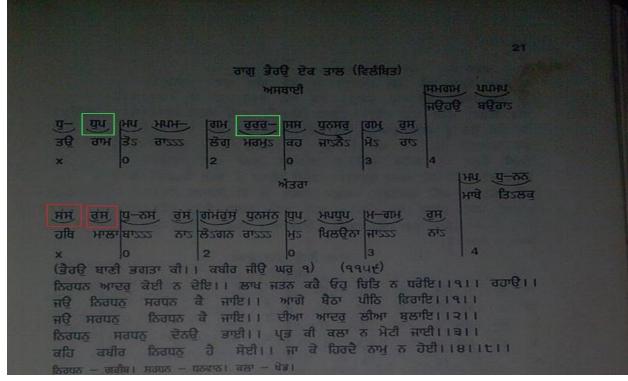


Figure 5 :- Green marked areas shows the correct usage and symbol of komal swar(note) in the composition of Raga Bhairo. Red marked areas shows the positioning problem for taar saptak (high octave) symbol on the shadja (Sa) swar(note) and rishabh(Re) swar(note)