

ANNEX-G

EXTENDED CHARACTER SET FOR VEDIC

The ISCII codes for Devanagari catered to all the characters required for typing Hindi, Marathi and Sanskrit. However they could not contain the additional characters required for representing ancient Vedic text. Many of these Vedic characters combine with other Devanagari characters. The Vedic characters cannot be thus thought of as constituting an independent script, but have to be catered to as an extension to the ISCII character set.

ISCII code provides an Extension code (EXT) which redefines the following ISCII character as another character not present in the ISCII code. Through this extension technique it is possible to represent, apart from Vedic, miscellaneous characters required for other Indian scripts.

It is not sufficient to provide only the extended character set for Vedic, it is necessary to make sure that they can be typed in a simple way. This necessitates a Vedic keyboard overlay along with the Inscript overlay. While remaining in the Inscript keyboard overlay it should be possible to select single characters from the Vedic overlay. This has been made possible through an Extension key, which when pressed along with an ISCII character, gives the corresponding character in the Vedic overlay.

The Vedic characters are ignored in transliteration to another Indian script and to the Roman script.

G-1 Nature of the Vedic Characters

In ancient times Vedic text was characterized by a tonal or pitch accent: one syllable in a word was pronounced with a different musical pitch than the others. In Sanskrit the pitch accent was kept alive for some centuries after Pāṇini, after which it finally disappeared in pronunciation.

Vedic text gives importance to correct representation of tonal marks along with the vowels. These tonal marks are called Svaras. The three main Svaras are Udāṭṭa, Anudāṭṭa and Svarita. Out of these Udāṭṭa has generally no indication.

Different Vedic texts however have no consistency in usage of diacritic marks to indicate these Svaras. The same symbol may get used by different authorities for different purposes.

In the Vedas there are three lengths for a vowel. These are short, long and extra-long (ह्रस्व, दीर्घ, प्लुत). The short and long vowels are denoted by the normal vowel signs used in Devanagari, while the extra-long vowel is indicated by putting a ३ sign after a short or long vowel sign. Example: ओ३ङ्कतौ स्मर.

G-1.1 Udāṭṭa (उदात्त)

The vowel that is perceived as having a high tone is called Udāṭṭa, or acutely accented. It is normally not marked. "..." is used in S ukla Yajurveda texts, at the end of a sentence.

G-1.2 Anudāṭṭa (अनुदात्त) (_)

The vowel that is perceived as having a low tone is called Anudatta, or gravely accented. In writing it is marked by a line underneath the vowel. It also denotes Udāṭṭa in Satapatha Brāhmaṇa. In Kāṭhaka text, Anudatta is shown as a vertical line below the character (,).

G-1.3 Svarita (स्वरित) (')

The vowel that is a combination of Udatta and Anudatta tones is said to be Svarita or circumflexly accented. It is pronounced by combined raising and falling of the voice. It is marked by a vertical line above a character.

This definition applies in Rigveda. However the same sign is defined as Udāṭṭa in Yajurveda's Maitrāyaṇīya text.

G-1.4 Long Svarita (दीर्घ स्वरित) (")

Long Svarita is denoted by two vertical lines above a character ("), in some Taittirīya texts.

G-1.5 Kampa (कम्प) (' _)

Kampa is vibration in the voice while reciting. The Kampa arises only when a Svarita is followed immediately by an Udāṭṭa (or Svarita). In such situations, a low-pitched Matra is inserted between them. The recitation sequence consists of high pitch of Svarita, followed by low pitch of Kampa, and then the high pitch of Udāṭṭa or Svarita, which causes the vibration. The Matra which is inserted between the Svarita and Udāṭṭa (or Svarita) is indicated by figure १ if the Svarita is short and by figure ३ if it is long. The figures are marked as both Svarita and Anudāṭṭa, i.e. १ and ३.

G-1.6 Jihvāmūlīya (जिह्वामूलीय or उपध्मनीय) (×)

This is like a half-Visarga sound, and can come only before four consonants. Before क and ख it is called Jihvāmūlīya, while before प and फ it is called Upadhmanīya.

Example: अग्निः + खादति = अग्नि×खादति
रामः + पश्यति = राम×पश्यति

G-1.7 Puspikā (पुष्पिका or पूर्णकलश) (५)

This symbol is just a substitute for the spaces between words, and hence is not needed.

G-1.8 Yajurvedic Anusvāra

Anusvara followed by non-Varga characters is pronounced with a ग् element mixed with a उ vowel. This is also known as Gunkār (गुंकार).

- ५ is used in Shukla Yajurveda.
- ५ is used in Krishna Yajurveda. This is also used in Shukla Yajurveda.
- ५ is an elongated Krishna Yajurvedic Anusvara.
- ६, ७, ८, ९, १०, ११, १२ are the variants of Yajurvedic Anusvaras found in different editions and seem to be redundant.

G-1.9 Visarga

There are many variants of the normal Visarga (ः) found in the Vedic texts like - ६ (after Udatta), ७ (after Svarita), ८, ९, and १०. All of these seem to be redundant.

G-1.10 Others:

- ऽ Atharvavedic Jātya Svarita is attached after a character. In some texts, it is shown preceding a Visarga. But it is better to show it after Visarga, since that is the logical order.
- Svaras in Samaveda are marked by १, २, ३, क, र and उ placed above the characters. These Svaras, when required, can be placed in the corresponding positions of the previous row. As such no special symbols are needed for them.

G-2 Extension Codes for Vedic

The Extension character (EXT), defined in ISCII, can be followed by another character in the range of A1h to EEh, to yield additional characters.

Code Hex Dec.	ISCII Char.	Vedic Char.	Name
A1 161	ॐ	ॐ	Visarga1
A2 162	ॐ	ॐ	Filler
A3 163	ॐ	ॐ	Yajurvedic Anusvara1
A4 164	ॐ	ॐ	Yajurvedic Anusvara2
A5 165	ॐ	ॐ	Shukla Yajurvedic Anusvara
A6 166	ॐ	ॐ	Yajurvedic Anusvara3
A7 167	ॐ	ॐ	Yajurvedic Anusvara4
A8 168	ॐ	ॐ	Visarga2
A9 169	ॐ	ॐ	Visarga3
AA 170	ॐ	ॐ	Visarga4
AB 171	ॐ	ॐ	Visarga5
AC 172	ॐ	ॐ	Jihvamuliya
AD 173	ॐ	ॐ	Krishna Yajurvedic Anusvara
AE 174	ॐ	ॐ	Krishna Yajurvedic Long Anusvara
AF 175	ॐ	ॐ	Yajurvedic Anusvara5
B0 176	ॐ	ॐ	Yajurvedic Anusvara6
B1 177	ॐ	ॐ	Yajurvedic Anusvara7
B2 178	ॐ	ॐ	Short Kampa
B3 179	ॐ	ॐ	Long Kampa
SWAR			
B4 180	ॐ	ॐ	Jatya Svarita-Atharvaveda
B5 181	ॐ	ॐ	Svarita
B6 182	ॐ	ॐ	Long Svarita
B7 183	ॐ	ॐ	Kampa
B8 184	ॐ	ॐ	Anudatta
B9 185	ॐ	ॐ	Jatya Svarita (Shukla Yajurveda)
BA 186	ॐ	ॐ	Jatya Svarita (Maitrayaniya)
BB 187	ॐ	ॐ	Sentence ending Udatta
BC 188	ॐ	ॐ	Jatya Svarita (Non-Taittiriya Yajurveda)
BD 189	ॐ	ॐ	Svarita (Maitrayaniya)
BE 190	ॐ	ॐ	Anudatta (Kathaka)
MISCELLANEOUS			
BF 191	ॐ	ॐ	Abbreviation sign

G-3 Structure of Vedic Characters

The Svarita symbols go above, below or after a character. Only one symbol can be attached at a time. The character can be a Full Consonant, Pure Consonant (with Halant), Vowel or another stand-alone Vedic symbol.

G-4.1 Typing Order.

The Svara symbols which attach above, below or after a character, should be typed at the end of a composite character.
Example:

क + ॠ = कॠ, क + ॡ = कु, क + ि + ः + ऽ = किःऽ

Vedic non-Svara characters can take only a Vedic Svara on it.
Example:

ॐ + ॠ = ॐॠ, ३ + ॠ = ३ॠ, ६ + ॠ = ६ॠ

G-5 Vedic Syllable Syntax**Svara (S)**

ॠ ॡ ॢ ॣ । ॥ ० १ २ ३ ४ ५ ६ ७ ८ ९

Non-Svara (R)

All the Vedic characters excluding the Svara.

Following is the extension to the ISCII code syntax, required for Vedic syllables.

Vedic-Syllable ::= Vedic-Cons-Vowel-Syllable |
Vedic-Vowel-Syllable | Full-Vedic-Syllable

Vedic-Cons-Vowel-Syllable ::= Cons-Vowel-Syllable S

Vedic-Vowel-Syllable ::= Vowel-Syllable S

Full-Vedic-Syllable ::= R S

Code		ISCII	Vedic	Name
Hex	Dec.	Char.	Char.	
A1	161	◌̣	◌̣	Visarga1
A2	162	◌̣	◌̣	Filler
A3	163	◌̣	◌̣	Yajurvedic Anusvara1
A4	164	अ	६	Yajurvedic Anusvara2
A5	165	आ	७	Shukla Yajurvedic Anusvara
A6	166	इ	८	Yajurvedic Anusvara3
A7	167	ई	९	Yajurvedic Anusvara4
A8	168	उ	१०	Visarga2
A9	169	ऊ	११	Visarga3
AA	170	ऋ	१२	Visarga4
AB	171	ऐ	१३	Visarga5
AC	172	ए	१४	Jihvamuliya
AD	173	ऐ	१५	Krishna Yajurvedic Anusvara
AE	174	ँ	१६	Krishna Yajurvedic Long Anusvara
AF	175	ओ	१७	Yajurvedic Anusvara5
B0	176	ओ	१८	Yajurvedic Anusvara6
B1	177	औ	१९	Yajurvedic Anusvara7
B2	178	ऑ	२०	Short Kampa
B3	179	क	२१	Long Kampa
SWAR				
B4	180	ख	२२	Jatya Svarita-Atharvaveda
B5	181	ग	२३	Svarita
B6	182	घ	२४	Long Svarita
B7	183	ङ	२५	Kampa
B8	184	च	२६	Anudatta
B9	185	छ	२७	Jatya Svarita (Shukla Yajurveda)
BA	186	ज	२८	Jatya Svarita (Maitrayaniya)
BB	187	झ	२९	Sentence ending Udatta
BC	188	ञ	३०	Jatya Svarita (Non-Taittiriya Yajurveda)
BD	189	ट	३१	Svarita (Maitrayaniya)
BE	190	ठ	३२	Anudatta (Kathaka)
MISCELLANEOUS				
BF	191	ड	३३	Abbreviation sign