

Preliminary draft Indian Standard (for comments)

Indian Language Technologies - Transliteration of Indic Scripts into Latin Characters

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BUREAU OF INDIAN STANDARDS

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Foreword

This Indian Standard was adopted by the Bureau of Indian Standards after the draft finalized by the Indian Language Technologies and Products Sectional Committee had been approved by the Electronics and Information Technology Division Council.

[one para on the origin of this project to be added here]

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0 INTRODUCTION

0.1 Transliteration of Indian scripts using Latin characters.

Multi-lingualism is one of the peculiar characteristics of India. Over 100 billion people speak several languages and dialects in different parts of the country. The major languages of India belong to four major linguistic families, Indo-Aryan (spoken by 70% of Indians), Dravidian languages (spoken by 22% of Indians), Austro-Asiatic and Tibeto-Burman linguistic families.

Hindi is the principal official language of the Republic of India while English is used as the secondary official language. Individual mother tongues in India number several hundred; the 1961 census recognized 1,652. According to Census of India of 2001, there are 29 languages which are spoken by more than a million native speakers and 122 by more than ten thousand speakers. Three millennia of language contact have made significant mutual influence on these four language families of India.

0.2 Need for Transliteration scheme for Indian Scripts

India is a multilingual country with as many as 22 scheduled languages. These 22 Indian languages are written using 11 scripts; thus more than one language is written in one script. All these 22 languages and the corresponding scripts are listed in Annex A.

A large chunk of population knows more than one language. This has created a need for transliteration tools which can convert text written in one language script to another Indian language script. Many such conversions may need mapping of language script data to human and machine understandable intermediate form.

A larger chunk of such population who is conversant in more than one language is such that they can understand and communicate verbally in another language though may not know the script of that language.

The above requirements create the need of having one standardized way of transliteration scheme for Indian Scripts. This relates to the written languages, not to the spoken languages. Although this will often approximate the pronunciation of a language, that remains a secondary consideration.

1 SCOPE

This Indian standard defines a set of guiding principles and scheme for the transliteration of Indian scripts using Latin characters.

This Indian standard presently covers Indian scripts Assamese/Bangla, Devanagri, Gujarati, Gurumukhi, Kannada, Malayalam, Oriya, Tamil, Telugu and provides transliteration tables for these scripts.

2 REFERENCE

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

IS 13194:1991 Indian Script Code for Information Interchange

ISO/IEC 10646:2020 Information technology — Universal coded character set (UCS)

IS/ISO 15919 : 2001 Information and Documentation — Transliteration of Devanagari and Related Indic Scripts into Latin Characters

3 TERMINOLOGY AND SYMBOLS

3.1 Terminology

For the purpose of this standard, the following definitions shall apply.

3.1.1 conversion

representing graphic characters from a source script by the graphic characters of a target script, most commonly by romanization

NOTE The two basic methods of conversion of a system of writing are transliteration and transcription. The use of the terms source script and target script in transliteration is analogous to the terms source language and target language in translation.

3.1.2 script

set of graphic characters used for the written form of one or more languages

3.1.3 graphic character

character (other than a control character) that has a visual representation, normally handwritten, printed or displayed

NOTE A graphic character is a single element of a script. Examples are letters, conjunct characters, numerical digits,

punctuation marks or diacritical marks.

3.1.4 reverse transliteration

process whereby the characters of a target script are transliterated into those of the source script

NOTE This International Standard aims to enable reverse-transliterated text to be identical to the original source text up to equivalent orthography. However, non-reversible transcription-like transliterations are often found to be useful when quoting recent material.

3.1.5 romanization

conversion of non-Latin graphic characters into Latin graphic characters, using either transliteration or transcription

3.1.6 transcription

representation of the sounds of a source language by graphic characters associated with a target language

3.1.7 transliteration

representation of the graphic characters of a source script by the graphic characters of a target script

NOTE In transcription, pronunciation conventions are of primary importance, while in transliteration, writing conventions are of primary importance.

3.1.8 UCS

Universal Multiple-Octet Coded Character Set (UCS) as defined in ISO/IEC 10646-1

3.2 Abbreviations

IPA	International Phonetic Alphabets (2005)
CIIL	Central Institute of Indian Language Transliteration scheme version 0.1A
WX	wx scheme
ITRANS	Indian Language Transliteration
NLKR	National Library at Kolkata Romanization
HK	Harvard Kyoto
IAST	International Alphabet of Sanskrit Transliteration h\s (for Hindi\for Sanskrit)
INSROT	Indian Script to Roman Transliteration

4 OVERVIEW OF TRANSLITERATION SCHEMES FOR INDIC SCRIPTS

In the transliteration of Indian scripts several schemes are being used in one or other manner. This section provides an overview of some of the prominent schemes.

4.1.1 *International Alphabet of Sanskrit Transliteration (IAST)*

The International Alphabet of Sanskrit Transliteration (IAST) is a popular transliteration scheme that allows a lossless romanization of Indic scripts. IAST is the most popular transliteration scheme for romanization of Sanskrit and Pāṇi. It is often used in printed publications, especially for books dealing with ancient Sanskrit and Pāṇi topics related to Indian religions. With the wider availability of Unicode fonts, it is also increasingly used for electronic texts. The sign inventory of IAST has both small and capital letters versions but some characters use special symbols to represent them.

4.1.2 *National Library at Kolkata romanization*

The National Library at Kolkata romanization, intended for the romanization of all Indic scripts, is an extension of IAST. It differs from IAST in the use of the symbols ē and ō for ॒

and ओ (e and o are used for the short vowels present in many Indian languages), the use of 'l' for the consonant (in Kannada) ಳ, and the absence of symbols for ऋ ॠ and ॡ.

4.1.3 *Harvard-Kyoto scheme*

This scheme was used by scholars from Japan who prepared electronic version of the important texts in Sanskrit Ramayana and Mahabharata. The Harvard-Kyoto Convention is a system for transliterating in ASCII the Sanskrit language and other languages that use the Devanāgarī script. Again it uses combination capital and small letters and is limited to the Devanagari script only.

4.1.4 Indian languages TRANSliteration (ITRANS)

The "Indian languages TRANSliteration" (ITRANS) is an ASCII transliteration scheme for Indic scripts, particularly, but not exclusively, for Devanagari (used for the Hindi, Marathi, Sanskrit, Nepali, Sindhi and some other languages). It was developed by Avinash Chopde. ITRANS was in some use for the encoding of Indian e-texts. It is wider in scope than the Harvard-Kyoto scheme for Devanagari transliteration, with which it coincides largely, but not entirely. With the wider implementation of Unicode, the traditional IAST is used increasingly also for electronic texts.

Like the Harvard-Kyoto scheme, the ITRANS Romanization does not use any diacritical sign not found on the common English-language computer keyboard, and it is quite easy to read. For some letters, there are variants: e.g. long vowels can be transcribed either by doubling the simple vowel, or with capitals which creates some ambiguity. Its application for other Indian languages and scripts have not yet been tried at largely.

4.1.5 *WX Notation*

This is a roman transliteration scheme for Devanagari. It is being used by many institutes in India for language technology related developments. Its salient features are that it utilizes Single key stroke for each Devanagri consonant/vowel. *alpaprANa (un-aspirated) consonants* are mapped to *small case* alphabets, and *mahAprANa (aspirated) consonants* are mapped to *Capital* alphabets. *Short vowels* are mapped to *small case* alphabets and *long vowels* to *Capital* alphabets. Using of small and capital letters at the same time pose some difficulty for a new reader. Also some tools which do not differentiate between casing of letters may not act as desired. The present scheme is not suitable for searching the contents on the Internet.

4.1.6 *Velthuis*

The disadvantage of the schemes mentioned in 4.1.1 to 4.1.5 is case-sensitivity, implying that transliterated names may not be capitalized. This difficulty is avoided with the system developed in 1996 by Frans Velthuis for TeX, loosely based on IAST, in which case is irrelevant.

4.1.7 *IS/ISO 15919:2001*

This Indian standard is an adoption of ISO 15919:2001. This presents Transliteration of Devanagari and related Indic scripts into Latin characters. ISO 15919 Transliteration of Devanagari and related Indic scripts into Latin characters is an international standard for the transliteration of Indic scripts to the Latin alphabet published in 2001. It uses diacritics to map the much larger set of Brahmic consonants and vowels to the Latin script. Due to use of Latin characters this becomes less readable and difficult to use for general public. There are some cases where same mappings are used to represent more than one characters e.g. ख and ॡ are represented using kh.

The addition of diacritics, either by hand or by machine, is time-consuming and requires an attentive scholar to make use of it. Even more important, it makes the same demands on the typesetter. As a result, typographical errors caused by the omission of such marks are frequently encountered in publications; the most common one being the omission of the dot over an *n* for the nasal velar *ng*.

4.1.8 Indian Script to Roman Transliteration (INSROT)

The use of capital letters is avoided in the INSROT to facilitate case insensitive search. Single quote (') that is on non-shift is used for this purpose. This is read as "prime".

5 GUIDING PRINCIPLES AND KEY CHARACTERISTICS OF A TRANSLITERATION SCHEME

Key characteristics and guiding principles to be followed while designing a transliteration scheme are listed in 5.1 and 5.2

5.1 Key characteristics Characteristics of transliteration scheme

- a) Easy to Use: The scheme should be easy to read and understand by humans and interpretable by Machines. To facilitate the same, the scheme should use only readable ASCII characters.
- b) Scalability: it should be able to cover characters of all major Indic scripts
- c) Interoperability: Compatibility with latest Unicode standard for Indic languages
- d) Uniqueness: Uniqueness without ambiguity to be ensured
- e) Ability to map: Ensuring mapping to the similar characters across various Indic scripts
- f) Nasalization and other diacritics: Proper handling of Nasalization and other diacritics such as Nukta etc.

5.2 Guiding Principles

- a) Minimum complexity: The schemes which are less complex are easy to use
- b) Removing anomalies employed by other schemes
- c) User-friendliness: User-friendliness refers to the ability of the system to provide a condition to its users to perform the tasks efficiently and effortlessly while enjoying the user experience. Using only the characters available on normal keyboard to represent the roman equivalents
- d) Avoiding the use of Case sensitive characters and diacritic marks that are not directly available on QWERTY keyboard.
- e) Using special symbols only if necessary
- f) Maintaining the usage of notations for representing specific feature or purpose only
- g) Addressing the issues and needs of the languages to the extent maximum possible
- h) Harmonious representation from user perspective
- i) Using 7-bit ASCII characters for representing any Indian language scripts.
- j) Keeping the similarity with the well known or well understood notations used in most commonly used transliteration schemes.
- k) Avoiding use of Capital letters (This will ensure that no confusion arises by the Automatic capitalization feature of some of the Word Processors).

6 COMPARISON OF VARIOUS TRASLITERATION SCHEMES:

Some of the shortcomings and/or inconsistencies in the transliteration schemes mentioned in Clause 4 are as follows (A comparison of these transliteration schemes are given in Annex B: Table 14 and 15):

- a) Most of the schemes have diacritic marks except WX scheme
- b) Multiple characters have been used for representing single sound in all schemes except wx scheme.
- c) Sound equivalence is lost in WX scheme because \w\ \x\ etc. is being used for dental plosives.
- d) National Library at Kolkata Romanization (NLKR) scheme and ISO (International Organization for Standardization) are very similar only a few characters are different.
- e) Some schemes have made use of Non-ASCII range of characters e.g. Harvard Kyoto and IAST schemes.
- f) More or less almost all schemes are case sensitive except ISO, Velthuis and INSROT.

7 CHARACTERISTICS OF INDIC SCRIPTS

Most of the Indian scripts are originated from Brahmi script and phonetic level similarity brings them together. Though there are variations at their implementation level, at the general level there is a great deal of similarity between these scripts.

In most of the Indian scripts, there is presence of a letter or character to represent each phoneme in Indian languages. The pronunciation of consonants is typically quite regular and predictable, leaving occasional exceptions in certain languages (e.g. Tamil). This makes the number of letters in alphabet quite large.

The text in all Indic scripts are written from left to right, Urdu being an exception that run from right to left.

Unlike the Latin alphabet, the script has no concept of letter case.

Characters in Indic scripts represent vowels, consonants and their combinations; nasalization, breathings, numerals and punctuation.

Each vowel has a full form (occupying a full character space in text, and required when beginning a word or in vowel hiatus) and a combining form (mātrā) used when the vowel follows a consonant, except that the short a standing at the beginning of Indic alphabets has only a full form, because no mātrā is required.

Consonants include stops, semivowels, spirants, and other speech sounds. Stop consonants are arranged in classes, or vargas, according to the point of articulation, and within each class are subdivided into unvoiced or voiced, unaspirated or aspirated consonants, and a nasal consonant.

Characters for consonants are most simply quoted in a form which includes the inherent vowel [ə] represented with character [a] after the consonant character representation. The inherent vowel is removed by the virāma sign of the relevant script (Dev., Bengali, Assamese, Gujarati, Gurumukhi and Odia ୠ, Tamil ௰, Telugu ౠ, Kan. ೠ, Malayalam ൠ, Sinhala 𑀠). The relevant mātrā is used when any other vowel follows a consonant. Consonant clusters frequently form conjunct characters. Use of virāma to form consonant clusters is unusual, except in Tamil where it is the normal method. When a mātrā is associated with a consonant, it replaces the inherent vowel. Mātrās have various forms, even in a single script, and details may be found in dictionaries and grammars.

It is important to note that many Indic characters have variant forms. Such differences of orthography are not distinguished in this International Standard.

8 TRANSLITERATION SCHEME FOR INDIAN SCRIPTS

This Indian Standard specifies a unified transliteration scheme for the Indic scripts using Latin characters. The transliteration of Indic scripts using Latin characters shall be as specified in the Tables 2 to Table 11, and subject to the rules specified in Clause 9.

8.1 The structure and key features of the Transliteration scheme

The structure of the transliteration tables is explained in the rest of this clause.

The target characters (Latin script) fall within the ranges 0020-007F of ISO/IEC 10646-1:2020.

The repertoires for many of the source characters fall within the following ranges of ISO/IEC 10646-1:2020, for the script concerned:

- a) 0900-097F (Devanagari)
- b) 0980-09FF (Bengali)
- c) 0A00-0A7F (Gurmukhi)
- d) 0A80-0AFF (Gujarati)
- e) 0B00-0B7F (Oriya)
- f) 0B80-0BFF (Tamil)
- g) 0C00-0C7F (Telugu)
- h) 0C80-0CFF (Kannada)
- i) 0D00-0D7F (Malayalam)
- j) ABC0-ABFF (Meitei Meyek)

8.1.1 List of Symbols used for different aspects.

The characters/symbols used to represent different aspects of the script are given in table 1:

Table 1 Characters/Symbols used to represent aspects of Indic scripts

Aspect	Symbol used	Example
Aspiration	h	characters - kha, gha, cha, jha, t ^h a, d ^h a, tha, dha, pha, bha etc.
Retroflex	^	characters - t ^a , t ^h a, d ^a , d ^h a, n ^a , l ^a , l ^a za etc.
Nukta character	z	characters – kza, khza, gza, jza, d ^a za, d ^h za, yza, l ^a za etc.
Sindhi Implosives	_	characters – g_a, j_a, d ^a _a, b_a
Disambiguation	:	– भ bha vs ब् b:ha, ਉ u vs ਉ u:, ਇ i vs ਏ i: ¹
Vocalic and some special characters	`	characters – h`, r`, lr`, a`, e`, o`, r`r`, lr`lr`
Avagraha	.	character – h~
Malayalam Chillu characters	~	character – n~, r~ etc.
Nasalization	~	chandrabindu or anuswar (m~) and bindi or anunasik (n~)

¹ Pujabi Character ੳ and ੲ are usually used for Numbering.

Only a single form of each Indic character is shown, just as in ISO/IEC 10646. Specifications of alternative forms of these characters, including shapes when these are included in conjunct forms or in consonant-vowel combinations, are outside the scope of this Standard.

This clause gives tables for each script, Vowels are shown in full form followed by a typical form of the corresponding mātrā.

Annex C gives tables showing linguistically equivalent characters in each script (except that Gurmukhi Bindi is not exactly equivalent to anusvara in the other scripts).

8.2 Transliteration scheme for Assamese/Bangla Script (representing Assamese and Bengali)

Table 2 Transliteration scheme for Assamese/Bangla Script

Sl.No.	Bangla	Transliteration	Unicode	Unicode Names
1.	◌্	m~	0981	CANDRABINDU
2.	◌ং	n~	0982	ANUSVARA
3.	◌ঃ	h`	0983	VISARGA
4.	অ	a	0985	A
5.	আ	aa	0986	AA
6.	ই	i	0987	I
7.	ঈ	ii	0988	II
8.	উ	u	0989	U
9.	ঊ	uu	098A	UU
10.	ঋ	r`	098B	VOCALIC R
11.	ৠ	lr`	098C	VOCALIC L
12.	এ	e	098F	E
13.	ঐ	ai	0990	AI
14.	ও	o	0993	O
15.	ঔ	au	0994	AU
16.	ক	ka	0995	KA
17.	খ	kha	0996	KHA
18.	গ	ga	0997	GA
19.	ঘ	gha	0998	GHA
20.	ঙ	nga	0999	NGA
21.	চ	ca	099A	CA
22.	ছ	cha	099B	CHA
23.	জ	ja	099C	JA
24.	ঝ	jha	099D	JHA
25.	ঞ	nja	099E	NYA
26.	ট	t^a	099F	TTA
27.	ঠ	t^ha	09A0	TTHA
28.	ড	d^a	09A1	DDA
29.	ঢ	d^ha	09A2	DDHA
30.	ণ	n^a	09A3	NNA
31.	ত	ta	09A4	TA
32.	থ	tha	09A5	THA
33.	দ	da	09A6	DA
34.	ধ	dha	09A7	DHA
35.	ন	na	09A8	NA
36.	প	pa	09AA	PA

37.	फ	pha	09AB	PHA	51.	र्र	r`r`	09E0	VOCALIC RR
38.	ब	ba	09AC	BA	52.	ल्ल	lr`lr`	09E1	VOCALIC LL
39.	भ	bha	09AD	BHA	53.	०	0	09E6	ZERO
40.	म	ma	09AE	MA	54.	१	1	09E7	ONE
41.	य	ya	09AF	YA	55.	२	2	09E8	TWO
42.	र	ra	09B0	RA	56.	३	3	09E9	THREE
43.	ल	la	09B2	LA	57.	४	4	09EA	FOUR
44.	श	sha	09B6	SHA	58.	५	5	09EB	FIVE
45.	ष	s^a	09B7	SSA	59.	६	6	09EC	SIX
46.	स	sa	09B8	SA	60.	७	7	09ED	SEVEN
47.	ह	ha	09B9	HA	61.	८	8	09EE	EIGHT
48.	ड	d^za	09DC	DDDHA	62.	९	9	09EF	NINE
49.	ड़	d^hza	09DD	RHA	63.	३	h~	09BD	AVAGRAHA
50.	य़	yza	09DF	YYA					

8.3 Transliteration scheme for Devanagari Script (representing Hindi, Marathi, Konkani)

Table 3 Transliteration scheme for Devanagari Script

Sl.No.	Devanagari	Transliteration	Unicode	Unicode Names
1.	ं	m~	0901	CANDRABINDU
2.	ँ	n~	0902	ANUSVARA
3.	ः	h`	0903	VISARGA
4.	अ	A	0905	A
5.	आ	aa	0906	AA
6.	इ	I	0907	I
7.	ई	ii	0908	II
8.	उ	u	0909	U
9.	ऊ	uu	090A	UU
10.	ऋ	r`	090B	VOCALIC R
11.	ॠ	lr`	090C	VOCALIC L
12.	ए	a`	090D	CANDRA E
13.	ऐ	e`	090E	SHORT E
14.	ऋ	E	090F	E

15.	ऐ	ai	0910	AI
16.	ऑ	ao	0911	CANDRA O
17.	ओ	o`	0912	SHORT O
18.	ओ	o	0913	O
19.	औ	au	0914	AU
20.	क	ka	0915	KA
21.	ख	kha	0916	KHA
22.	ग	ga	0917	GA
23.	घ	gha	0918	GHA
24.	ङ	nga	0919	NGA
25.	च	ca	091A	CA
26.	छ	cha	091B	CHA
27.	ज	ja	091C	JA
28.	झ	jha	091D	JHA
29.	ञ	nja	091E	NYA
30.	ट	t^a	091F	TTA
31.	ठ	t^ha	0920	TTHA
32.	ड	d^a	0921	DDA
33.	ढ	d^ha	0922	DDHA
34.	ण	n^a	0923	NNA
35.	त	ta	0924	TA
36.	थ	tha	0925	THA
37.	द	da	0926	DA
38.	ध	dha	0927	DHA
39.	न	na	0928	NA

40.	न	nza	0929	NNNA
41.	प	pa	092A	PA
42.	फ	pha	092B	PHA
43.	ब	ba	092C	BA
44.	भ	bha	092D	BHA
45.	म	ma	092E	MA
46.	य	ya	092F	YA
47.	र	ra	0930	RA
48.	र	rza	0931	RRA
49.	ल	la	0932	LA
50.	ळ	l^a	0933	LLA
51.	ळ	l^za	0934	LLLA
52.	व	va	0935	VA
53.	श	sha	0936	SHA
54.	ष	s^a	0937	SSA
55.	स	sa	0938	SA
56.	ह	ha	0939	HA
57.	क़	kza	0958	QA
58.	ख़	khza	0959	KHHA
59.	ग़	gza	095A	GHHA
60.	ज़	jza	095B	ZA
61.	ड़	d^za	095C	DDDHA
62.	ढ़	d^hza	095D	RHA
63.	फ़	phza	095E	FA
64.	य़	yza	095F	YYA

65.	ऋ	r`r`	0960	VOCALIC RR	76.	७	7	096D	SEVEN
66.	ॠ	lr`lr`	0961	VOCALIC LL	77.	८	8	096E	EIGHT
67.			0964	DANDA	78.	९	9	096F	NINE
68.			0965	DB DANDA	79.	गु	g_a	097B	GGA
69.	०	0	0966	ZERO	80.	जु	j_a	097C	JJA
70.	१	1	0967	ONE	81.	डु	d^_a	097E	DDDA
71.	२	2	0968	TWO	82.	बु	b_a	097F	BBA
72.	३	3	0969	THREE	83.	ॐ	o`m	0950	OM
73.	४	4	096A	FOUR	84.	5	.h	093D	AVGRHA
74.	५	5	096B	FIVE	85.	=	r_a		Eyelash RA
75.	६	6	096C	SIX					

8.3.1 Hindi example words in Roman scheme

का (kaa), कि (ki), की (kii), कु (ku), कू (kuu), के (ke), कै (kai), को (ko), कौ (kau), कं (kan~), कैं (kam~) कां (kaan~), काँ (kaam~) किं (kin~), कीं (kiin~), कुं (kun~), कुँ (kum~) कूँ (kuun~), कूँ (kuum~) केँ (ken~), कैँ (kain~), कोँ (kon~), कौँ (kaun~)

कट (kat^a), खाट (khaat^a), घृत (ghr`ta), चिप (cipa), झील (jhiila), बाण (baan^a), तुक (tuka), टूट (t^uut^a), थूक (thuuka), फोड़ (phod^za), मैल (maila), षट (s^at^a), साथ (saatha), आशा (aashaa), ईख (iikha), ऋषि (r`s^i), और (aura), बूढ़ा (buud^hzaa), मक्खन (makkhana), ड्राइवर (d^raaivara), अण्डा (an^d^aa), गद्दी (gaddii), सत्ताईस (sattaaiisa), पृथ्वी (pr`thvii), प्रथम (prathama), कुँवर (kum~vara), ख़्बाब (khzbaaba), श्वान (shvaana), प्राण (praan^a), पुण्य (pun^ya), ज्ञानज्योति (jnjaanajyoti), नूपुर (nuupura), ध्वनि (dhvani), कॉलेज (kaoleja), हंस (han~sa), हँस (ham~sa), आँखें (aam~khen~), विपत्ति (vipatti), परिस्थिति (paristhiti), पॅन (pa`na), बॉल (baola), बाँके बिहारी (baam~ke bihaarii), गङ्गा (ganggaa), क्वाथ (kvaatha), क्वा (kvaa), पद्य (padya), पद्य (padya), निष्क्रिय (nis^kriya), कृषि (kr`s^i), जमदग्नि (jamadagni), डमरू (d^amaruu), रत्न (ratna), तन (tana), टन (t^ana), दाल (daala), डाल (d^aala), कृपा (kr`paa), क्रिया (kriyaa), ज्योति (jyoti), खजाना (khzajaanaa), चण्डीगढ़ (can^d^iigad^hza), दुःख (dukha)

8.3.2 Sample Hindi Text in Devanagari and Roman script:

आमतौर पर हर छोटी-बड़ी बीमारी के लिए लोग झट से एंटीबायोटिक ले लेते हैं। लेकिन अब डॉक्टरों ने इन दवाओं को लेकर लोगों को आगाह किया है। डॉक्टरों का कहना है कि एंटीबायोटिक के प्रति प्रतिरोधक क्षमता या रिज़िस्टेंस पैदा हो रही है जो सेहत के लिए सबसे बड़े खतरों में से एक है। ये चेतावनी इंग्लैंड की मुख्य चिकित्सा अधिकारी और हेल्थ प्रोटेक्शन एजेंसी नाम की संस्था ने दी है। इनका

कहना है कि छोटे-मोटे संक्रमण के लिए भी एंटीबायोटिक का बेवजह इस्तेमाल हो रहा है जिससे बैक्टीरिया इनके प्रति प्रतिरोधक क्षमता विकसित कर रहे हैं. डॉक्टरों ने मरीजों को सलाह दी है कि वे दवाओं का सेवन ज़रा सोच समझ कर करें, खासकर तब जब बहुत कम नई एंटीबायोटिक दवाएँ विकसित हो रही हैं. लापरवाही न बरतें ब्रिटेन की डॉक्टर सैली डेविस कहती हैं, “जिस स्तर और दर से एंटीबायोटिक दवाएँ अपना असर खो रही हैं वो चिंता का विषय है और इस असर को बदला नहीं जा सकता. एंटीबायोटिक दवाओं के प्रति बैक्टीरिया तेज़ी से प्रतिरोधक क्षमता विकसित कर रहे हैं. बाद में दवाओं का इन बैक्टीरिया पर कोई असर नहीं होगा.” इंग्लैंड की मुख्य चिकित्सा अधिकारी ने एंटीबायोटिक के इस्तेमाल को लेकर हिदायतें जारी की है. इसमें कहा गया है कि एंटीबायोटिक तभी लेनी चाहिए जब प्रशिक्षित डॉक्टर ने कहा हो. डॉक्टर ने जितनी दिनों की दवाई दी हो, उतने ही दिन दवा लेनी चाहिए, भले ही आप बेहतर महसूस कर रहे हों क्योंकि बीच में दवाई छोड़ने से बैक्टीरिया प्रतिरोधक क्षमता विकसित कर सकते हैं. डॉक्टरों की हिदायत एंटीबायोटिक तभी लेनी चाहिए जब प्रशिक्षित डॉक्टर ने कहा हो. डॉक्टर ने जितनी दिनों की दवाई दी हो, उतने दिन दवा लेनी चाहिए भले ही आप बेहतर महसूस कर रहे हों बीच में दवाई छोड़ने से बैक्टीरिया प्रतिरोधक क्षमता विकसित कर सकते हैं. जुकाम या फ्लू जैसे वायरसों से होने वाले संक्रमण में एंटीबायोटिक मददगार नहीं होते.

aamataura para hara chotⁱⁱ-bad^{zii} bimaarii ke lie loga jhat^a se en^t-ⁱⁱbaayot^{ika} le lete hain~. lekina aba d^{aokt}^{aron}~ ne ina davaaon~ ko lekara logon~ ko aagaaha kiyaa hai. d^{aokt}^{aron}~ kaa kahanaa hai ki en^t-ⁱⁱbaayot^{ika} ke prati pratirodhaka kshamataa yaa rijzisa^t^{en}~sa paida ho rahii hai jo sehata ke lie sabase bad^{ze} khataron~ men~ se eka hai. ye cetaavanii in~glain~d^a kii mukhya cikitsaa adhikaarii aura heltha prot^{ek}shana ejen~sii naam kii san~sthaa ne dii hai. inkaa kahanaa hai ki chot^e-mot^e san~kraman^a ke lie bhii en^t-ⁱⁱbaayot^{ika} kaa bevajaha istemaal ho rahaa hai jisase baikt^{iiri}yaa inake prati pratirodhaka kshamataa vikasita kara rahe hain~. d^{aokt}^{on}~ ne mariijzon~ ko salaaha dii hai ki ve davaaon~ kaa sevana jzaraa soca samajha kara karen~, khaasakara taba jaba bahuta kama naiti en^t-ⁱⁱbaayot^{ika} davaaem~ vikasita ho rahi hain~. laaparavaahii na baraten~ brit^{ena} kii d^{aokt}^{ara} sailii d^{evisa} kahatii hain~, "jisa stara aura dara se en^t-ⁱⁱbaayot^{ika} davaaem~ apanaa asara kho rahii hain~ vo cin~taa ka vis^{aya} hai aura isa asara ko badalaa nahiin~ jaa sakata. en^t-ⁱⁱbaayot^{ika} davaaon~ ke prati baikt^{iiri}yaa tejzii se pratirodhaka kshamataa vikasita kara rahe hain~. baada men~ davaon~ kaa ina baikt^{iiri}ya para koi asara nahiin~ hogaa. "in~glain~d^a kii mukhya cikitsaa adhikaarii ne en^t-ⁱⁱbaayot^{ika} ke istemaala ko lekara hidaayat^{en}~ jaarii kii hai. isamen~ kahaa gayaa hai ki en^t-ⁱⁱbaayot^{ika} tabhii lenii caahie jaba prashikshita d^{aokt}^{ara} ne kahaa ho. d^{aokt}^{ara} ne jitanii dinon~ kii davaaii dii ho, utane hii dina davaa lenii caahie, bhale hii aapa behatara mahasuusa kara rahe hon~ kyon~ki biica men~ davaaii chod^{zane} se baikt^{iiri}yaa pratirodhaka kshamataa vikasita kara sakate hain~. d^{aokt}^{aron}~ kii hidaayata en^t-ⁱⁱbaayot^{ika} tabhii lenii caahie jaba prashikshita d^{aokt}^{ara} ne kahaa ho. d^{aokt}^{ara} ne jitanii dinon~ kii davaaii dii ho, utane dina davaa lenii caahie bhale hii aapa behatara mahasuusa kara rahe hon~ biica men~ davaaii chod^{zane} se baikt^{iiri}ya pratirodhaka kshamataa vikasita kara sakaten~ hain~. jzukaama yaa phluu jaise baayarason~ se hone vaale san~kraman^a men~ en^t-ⁱⁱbaayot^{ika} madadagaara nahiin~ hote.

8.4 Transliteration scheme for Gujarati Script

Table 4 Transliteration scheme for Gujarati

Sl.N.	Gujarati	Transliteration	Unicode	Unicode Names
1.	ં	m~	0A81	CANDRABINDU
2.	◌ં	n~	0A82	ANUSVARA
3.	ઃ	h`	0A83	VISARGA
4.	અ	a	0A85	A
5.	આ	aa	0A86	AA
6.	ઇ	i	0A87	I
7.	ઈ	ii	0A88	II
8.	ઉ	u	0A89	U
9.	ઊ	uu	0A8A	UU
10.	ઋ	r`	0A8B	VOCALIC R
11.	ૠ	lr`	0A8C	VOCALIC L
12.	એ	a`	0A8D	CANDRA E
13.	ૈ	e	0A8F	E
14.	ૌ	ai	0A90	AI
15.	ઑ	ao	0A91	CANDRA O
16.	ઔ	o	0A93	O
17.	ૌ	au	0A94	AU
18.	ક	ka	0A95	KA
19.	ખ	kha	0A96	KHA
20.	ગ	ga	0A97	GA
21.	ઘ	gha	0A98	GHA
22.	ઙ	nga	0A99	NGA
23.	ચ	ca	0A9A	CA
24.	છ	cha	0A9B	CHA
25.	જ	ja	0A9C	JA
26.	ઝ	jha	0A9D	JHA
27.	ઞ	nja	0A9E	NYA
28.	ટ	t^a	0A9F	TTA
29.	ઠ	t^ha	0AA0	TTHA
30.	ડ	d^a	0AA1	DDA
31.	ઢ	d^ha	0AA2	DDHA
32.	ણ	n^a	0AA3	NNA
33.	ત	ta	0AA4	TA
34.	થ	tha	0AA5	THA
35.	દ	da	0AA6	DA
36.	ધ	dha	0AA7	DHA
37.	ન	na	0AA8	NA
38.	પ	pa	0AAA	PA
39.	ફ	pha	0AAB	PHA
40.	બ	ba	0AAC	BA
41.	ભ	bha	0AAD	BHA
42.	મ	ma	0AAE	MA
43.	ય	ya	0AAF	YA
44.	ર	ra	0AB0	RA

45.	લ	la	0AB2	LA	55.	૧	1	0AE7	ONE
46.	ળ	l^a	0AB3	LLA	56.	૨	2	0AE8	TWO
47.	વ	va	0AB5	VA	57.	૩	3	0AE9	THREE
48.	શ	sha	0AB6	SHA	58.	૪	4	0AEA	FOUR
49.	ષ	s^a	0AB7	SSA	59.	૫	5	0AEB	FIVE
50.	સ	sa	0AB8	SA	60.	૬	6	0AEC	SIX
51.	હ	ha	0AB9	HA	61.	૭	7	0AED	SEVEN
52.	ઋ	r`r`	0AE0	VOCALIC RR	62.	૮	8	0AEE	EIGHT
53.	ૠ	lr`lr`	0AE1	VOCALIC LL	63.	૯	9	0AEF	NINE
54.	૦	0	0AE6	ZERO	64.	૫	h~	0ABD	AVAGRAHA

8.4.1 Gujarati example words in proposed scheme:

અમારું (amaarum~), આપણે (aapan^e), ઇયળ (iyal^a), ઇશારો (ishaaro), ઈંટ (iim~t^a), ઈંધણ (iim~dhan^a), ઉત્કર્ષ (utkars^a), ઉત્પન્ન (utpanna), ઊંડુ (uum~d^u), ઊંટ(uum~t^a), ઊંઘ (uum~gha), મેલ (mela), મેલ (ma`la), ગોળ (gol^a), ગોળ (gaol^a), ગોરજ (goraja), ફળ (phal^a), ગુણવાન (gun^avaana), ષટ્કોણ (s^at^akon^a), આહ્લાદ (aahlaada), આળ (aal^a), આંજણું (aam~javum~), ગ્રીષ્મ (griis^ma), ઉષ્ણ (us^n^a), બ્રહ્મા (brahmaa), ભીંડો (bhiim~d^o), કાંટો (kam~t^o), કાંકણ (kam~kan^a), જ્યોત્સ્ના (jyotsnaa), મુદ્દો (muddo), યુદ્ધ (yuddha), અર્થાત્ (arthat), બહેન (bahena), દુઃખ (duHkha), દુખી (dukhii), થૂંકણું (thuum~kavum~)

8.5 Transliteration scheme for Gurmukhi Script (representing Punjabi)

Table 5 Transliteration scheme for Gurmukhi Script

SL.N.	Gurmukhi	Transliteration	Unicode	Unicode Names
1.	ੳ	m~	0A70	TIPPI
2.	ੴ	n~	0A02	BINDI
3.	ਅ	A	0A05	A
4.	ਆ	aa	0A06	AA
5.	ੲ	I	0A07	I
6.	ਈ	ii	0A08	II
7.	ਉ	u	0A09	U
8.	ਊ	uu	0A0A	UU
9.	ਏ	E	0A0F	E
10.	ਐ	ai	0A10	AI

11.	ੳ	o	0A13	O
12.	ਐ	au	0A14	AU
13.	ਕ	ka	0A15	KA
14.	ਖ	kha	0A16	KHA
15.	ਗ	ga	0A17	GA
16.	ਘ	gha	0A18	GHA
17.	ਙ	nga	0A19	NGA
18.	ਚ	ca	0A1A	CA
19.	ਛ	cha	0A1B	CHA
20.	ਜ	ja	0A1C	JA
21.	ਝ	jha	0A1D	JHA
22.	ਞ	nja	0A1E	NYA
23.	ਟ	t^a	0A1F	TTA
24.	ਠ	t^ha	0A20	TTHA
25.	ਡ	d^a	0A21	DDA
26.	ਢ	d^ha	0A22	DDHA
27.	ਣ	n^a	0A23	NNA
28.	ਤ	ta	0A24	TA
29.	ਥ	tha	0A25	THA
30.	ਦ	da	0A26	DA
31.	ਧ	dha	0A27	DHA
32.	ਨ	na	0A28	NA
33.	ਪ	pa	0A2A	PA
34.	ਫ	pha	0A2B	PHA
35.	ਬ	ba	0A2C	BA

36.	ਭ	bha	0A2D	BHA
37.	ਮ	ma	0A2E	MA
38.	ਯ	ya	0A2F	YA
39.	ਰ	ra	0A30	RA
40.	ਲ	la	0A32	LA
41.	ਲ਼	l^a	0A33	LLA
42.	ਵ	va	0A35	VA
43.	ਸ਼	sha	0A36	SHA
44.	ਸ	sa	0A38	SA
45.	ਹ	ha	0A39	HA
46.	ਖ਼	khza	0A59	KHHA
47.	ਗ਼	gza	0A5A	GHHA
48.	ਜ਼	jza	0A5B	ZA
49.	ਡ਼	d^za	0A5C	DDDHA
50.	ਫ਼	phza	0A5E	FA
51.	।		0A64	DANDA
52.	॥		0A65	DB DANDA
53.	੦	0	0A66	ZERO
54.	੧	1	0A67	ONE
55.	੨	2	0A68	TWO
56.	੩	3	0A69	THREE
57.	੪	4	0A6A	FOUR
58.	੫	5	0A6B	FIVE
59.	੬	6	0A6C	SIX
60.	੭	7	0A6D	SEVEN

61.	੮	8	0A6E	EIGHT	62.	੯	9	0A6F	NINE
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8.5.1 Punjabi/i example words in proposed scheme

ਕਾ (kaa), ਕਿ (ki), ਕੀ (kii), ਕੁ (ku), ਕੂ (kuu), ਕੇ (ke), ਕੈ (kai), ਕੋ (ko), ਕੌ (kau), ਕੰ (kam~), ਕਾਂ (kaan~), ਕਿੰ (kim~), ਕੀਂ (kiin~), ਕੁੰ (kum~), ਕੁੰ (kun~) ਕੁੰ (kuum~), ਕੁੰ (kuun~) ਕੇਂ (ken~), ਕੈਂ (kain~), ਕੌਂ (kon~), ਕੌਂ (kaun~)

ਸ੍ਵਰ (svara), ਸ੍ਵੈ-ਜੀਵਨੀ (svai-jiiivanii), ਜੇਬੁ (jebha), ਕੱਲ੍ਹ (kallha), ਤਰ੍ਹਾਂ (tarhaam~), ਉਨ੍ਹਾਂ (unhaan~), ਪ੍ਰਾਪਤ (praapata), ਪ੍ਰਬੰਧ (prabam~dha), ਪੜ੍ਹ (pad^zha), ਚੰਡੀਗੜ੍ਹ (cam~d^iigad^zha), ਰਾਮਲੀਲਾ (raamaliilhaa), ਸੜਕ (sad^zaka), ਭ੍ਰਿਸ਼ਟਾਚਾਰ (bhrishat^aacaara), ਕਾਵਿ-ਸੰਗ੍ਰਹਿ (kaavi-sam~grahi), ਬੱਦਲ (baddala), ਪਰੰਪਰਾ (param~paraa), ਵੱਲੋਂ (vallon~), ਅਸੀਂ (asiin~), ਗੌਰਮੰਟ (gauramim~t^a), ਸੁੰਦਰਤਾ (sum~darataa) ਗਰਾਊਂਡ (garaauun~d^a), ਸਮੇਂ (samem~), ਜ਼ਿੰਮੀਂਦਾਰ (jzimiin~daara), ਜ਼ਿੰਮੇਵਾਰੀ (jzim~mevaarii), ਰੰਗ (ram~ga), ਅੰਮ੍ਰਿਤ (aam~mrta), ਨੌਂ (naun~), ਕੇਂਦਰ (ken~dara) ਕੌਂਸਲ (kaun~sala), ਪਿੰਡ (pim~d^a), ਉਂਜ (unn~ja), ਜੁਗਨੂੰ (juganuun~), ਆਲ੍ਹਣਾ (aalhan^aa), ਸਤਰੰਗੀ (sataram~gii), ਪੀਂਘ (piin~gha), ਪੰਘੜਾ (pam~ghuud^zaa), ਹਵੇਲੀ (havelii), ਸੱਥ (sattha), ਪੰਚਾਇਤ (pam~caaita), ਵਿਹੜਾ (vihad^zaa), ਪਸ਼ੂ (pashuu), ਡੰਗਰ (dam~gura), ਖੇਤੀਬਾੜੀ (khetiibaad^zii), ਭੁਗੋਲ (bhuugola), ਘੁੰਮਦਾ (ghum~madaa), ਕੱਪੜਾ (kappad^zaa), ਲੱਭ (labbha), ਬੱਚਾ (baccaa), ਜੰਗਲ (jam~gala), ਉੱਤੇ (utte), ਜਦੋਂ (jadon~), ਸੌਂਦਾ (saun~daa), ਕਰਾਂਗਾ (karaan~gaa), ਮੈਂਨੂੰ (mainuum~), ਪਹਾੜ (pahaad^za), ਤੁਸੀਂ (tusiin~), ਪਰੀਖਿਆ (pariikhiaa), ਵਿੱਦਿਆ (viddiaa), ਸਿੱਖਿਆ (sikkhiaa), ਬਾਅਦ (baaada), ਨਵਾਂ (navaan~), ਨਵੇਂ (naven~), ਨੱਚ (nacc), ਤਿੰਨ (tim~na), ਸਕੂਲ (sakuula), ਜਮਾਤ (jamaata), ਦਰਖਤ (darakhzata), ਧੜੰਮ (dhad^zam~ma), ਡਿੱਗ (d^igga), ਧੁੱਪ (dhuppa), ਰੌਸ਼ਨੀ (raushanii), ਜਿਵੇਂ (jiven~), ਕਿਉਂ (kiun~), ਖੋਲ੍ਹਿਆ (kholhiaa)

8.5.2 Sample Punjabi Text in Gurmukhi and Roman script:-

ਚੰਡੀਗੜ੍ਹ ਭਾਰਤ ਦੀ ਇੱਕ ਯੂਨੀਅਨ ਟੈਰਟਰੀ ਹੈ। ਇਹ ਭਾਰਤ ਦੇ ਦੋ ਸੂਬਿਆਂ ਪੰਜਾਬ ਅਤੇ ਹਰਿਆਣਾ ਦੀ ਰਾਜਧਾਨੀ ਹੈ। ਇਸ ਨੂੰ ਭਾਰਤ ਦਾ ਖੂਬਸੂਰਤ ਸ਼ਹਿਰ ਮੰਨਿਆ ਜਾਂਦਾ ਹੈ। ਸ਼ਹਿਰ ਦੇ ਲਾਗੇ ਦੇ ਜ਼ਿਲ੍ਹਿਆਂ ਵਿੱਚ ਹਰਿਆਣਾ ਦੇ ਅੰਬਾਲਾ ਅਤੇ ਪੰਚਕੁਲਾ ਅਤੇ ਪੰਜਾਬ ਦੇ ਮੋਹਾਲੀ , ਪਟਿਆਲਾ ਅਤੇ ਰੋਪੜ ਜ਼ਿਲ੍ਹੇ ਹਨ। ਇਸਦੇ ਉੱਤਰੀ ਹਿੱਸੇ ਤੋਂ ਹਿਮਾਚਲ ਪ੍ਰਦੇਸ਼ ਦੀ ਹੱਦ ਜ਼ਿਆਦਾ ਦੂਰ ਨਹੀਂ ਹੈ। ਸ਼ਹਿਰ ਦੀ ਆਬ-ਓ-ਹਵਾ ਸਿੱਲ੍ਹੀ ਸਬ-ਟ੍ਰਾਪਿਕਲ ਕਿਸਮ ਦੀ ਹੈ; ਜਿਸ ਵਿੱਚ ਗਰਮੀਆਂ ਵਿੱਚ ਬਹੁਤ ਗਰਮੀ, ਸਿਆਲ ਵਿੱਚ ਨਿੱਘ, ਬੇਅਤਬਾਰੀ ਬਰਸਾਤ ਅਤੇ ਟੈਂਪਰੇਚਰ ਵਿੱਚ ਵੱਡੇ ਫ਼ਰਕ (-1° ਤੋਂ 41.2°) ਦਾ ਅੰਦਾਜ਼ਾ ਰਹਿੰਦਾ ਹੈ। ਸਿਆਲ ਵਿੱਚ ਦਿਸੰਬਰ ਅਤੇ ਜਨਵਰੀ ਦੇ ਮਹੀਨੇ ਵਿੱਚ ਕਦੇ-ਕਦੇ ਕੇਹਰਾ ਹੋ ਸਕਦਾ ਹੈ। ਔਸਤ ਸਾਲਾਨਾ ਬਰਸਾਤ 111.07 c.m. ਹੁੰਦੀ ਹੈ। ਸ਼ਹਿਰ ਵਿੱਚ ਕਈ ਵਾਰ ਲਹਿੰਦੇ ਤੋਂ ਪਰਤਦੇ ਮਾਨਸੂਨ ਸਿਆਲੂ ਬਰਸਾਤ ਵੀ ਕਰ ਦਿੰਦੇ ਹਨ। ਭਾਰਤੀ ਪੰਜਾਬ ਦੀ ਰਾਜਧਾਨੀ ਚੰਡੀਗੜ੍ਹ ਹੈ ਅਤੇ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬ ਦੀ ਰਾਜਧਾਨੀ ਲਹੌਰ ਹੈ। ਬਰਤਾਨਵੀ ਹਿੰਦੁਸਤਾਨ ਦੀ ਵੰਡ ਮਗਰੋਂ 1947 ਵਿੱਚ ਸੂਬੇ ਪੰਜਾਬ ਨੂੰ ਭਾਰਤ ਅਤੇ ਪਾਕਿਸਤਾਨ ਵਿੱਚਕਾਰ ਦੋ ਹਿੱਸਿਆਂ ਵਿੱਚ ਵੰਡ ਦਿੱਤਾ ਗਿਆ ਸੀ। ਇਸ ਵੰਡ ਕਰਕੇ ਰਾਜ ਦੀ ਪੁਰਾਣੀ ਰਾਜਧਾਨੀ ਲਹੌਰ ਪਾਕਿਸਤਾਨ ਦੇ ਹਿੱਸੇ ਵਿੱਚ ਚਲੀ ਗਈ ਸੀ। ਹੁਣ ਭਾਰਤੀ ਪੰਜਾਬ ਨੂੰ ਇੱਕ ਨਵੀਂ ਰਾਜਧਾਨੀ ਦੀ ਲੋੜ ਪਈ। ਪਹਿਲਾਂ ਮੌਜੂਦ ਸ਼ਹਿਰਾਂ ਨੂੰ ਰਾਜਧਾਨੀ ਵਿੱਚ ਬਦਲਣ ਵਿੱਚ ਆਉਣ ਵਾਲੀਆਂ ਬਹੁਤ ਸਾਰੀਆਂ ਔਕੜਾਂ ਦੇ ਸਿੱਟੇ ਵੱਜੋਂ ਇੱਕ ਨਵੀਂ ਪਲੈਨਡ ਰਾਜਧਾਨੀ ਕਾਇਮ ਕਰਨ ਦਾ ਫੈਸਲਾ ਕੀਤਾ ਗਿਆ। ਉਸ ਵੇਲੇ ਭਾਰਤ ਵਿੱਚ ਚੱਲ ਰਹੀਆਂ ਬਹੁਤ ਸਾਰੀਆਂ ਨਵੀਆਂ ਸ਼ਹਿਰੀ ਤਜਵੀਜ਼ਾਂ ਵਿੱਚ ਚੰਡੀਗੜ੍ਹ ਨੂੰ ਸਭ ਤੋਂ ਵੱਧ ਅਹਿਮੀਅਤ ਮਿਲੀ ਜਿਸਦੇ ਖ਼ਾਸ ਕਾਰਣ ਸਨ ਇੱਕ ਤਾਂ ਸ਼ਹਿਰ ਦੀ ਰਣਨੀਤਕ ਲੋਕੇਸ਼ਨ ਅਤੇ ਦੂਜਾ ਪ੍ਰਧਾਨ ਮੰਤਰੀ ਜਵਾਹਰ ਲਾਲ ਨਹਿਰੂ ਦਾ ਇਸ ਪ੍ਰੋਜੈਕਟ ਵਿੱਚ ਜ਼ਾਤੀ ਤੌਰ ਤੇ ਰੁਝਾਨ ਹੋਣਾ। ਨਵੀਂ ਕੌਮ ਦੇ ਮਾਡਰਨ ਅਤੇ ਅਗਾਂਹ-ਵਧੂ ਨਜ਼ਰੀਏ ਦੇ ਰੂਪ ਵਿੱਚ ਚੰਡੀਗੜ੍ਹ ਨੂੰ ਵੇਖਦੇ ਹੋਏ ਉਨ੍ਹਾਂ ਨੇ ਸ਼ਹਿਰ ਨੂੰ ਬੀਤੀਆਂ ਹੋਈਆਂ ਰਿਵਾਇਤਾਂ ਤੋਂ ਅਜ਼ਾਦ, ਕੌਮ ਦੇ ਅੱਗੇ ਵਧਣ ਵਿੱਚ ਯਕੀਨ ਰੱਖਣ ਦਾ ਚਿੰਨ੍ਹ ਦੱਸਿਆ। ਸ਼ਹਿਰ ਦਾ ਡਿਜ਼ਾਇਨ ਇੱਕ ਫ਼ਰਾਂਸੀਸੀ ਆਰਕੀਟੈਕਟ ਅਤੇ ਸ਼ਹਿਰੀ ਨਕਸ਼ਾਸਾਜ਼ ਲ ਕਾਰਬੁਜ਼ਿਏ ਨੇ 1950 ਦੇ ਦਹਾਕੇ ਵਿੱਚ ਕੀਤਾ। ਕਾਰਬੁਜ਼ਿਏ ਅਸਲ ਵਿੱਚ ਸ਼ਹਿਰ ਦੇ ਦੂਸਰੇ ਆਰਕੀਟੈਕਟ ਸਨ। ਪਹਿਲਾ ਮਾਸਟਰ-

ਪਲੈਨ ਅਮਰੀਕੀ ਆਰਕੀਟੈਕਟ ਐਲਬਰਟ ਮੇਅਰ ਨੇ ਬਣਾਇਆ ਸੀ, ਜੋ ਆਰਕੀਟੈਕਟ ਮੈਥਿਊ ਨਾਵੀਤਸਕੀ ਨਾਲ ਕੰਮ ਕਰਦੇ ਸਨ। 1950 ਵਿੱਚ ਨਾਵੀਤਸਕੀ ਦੀ ਕੁਵੇਲੇ ਮੌਤ ਕਾਰਨ ਕਾਰਬੁਜ਼ਿਏ ਨੂੰ ਇਹ ਪ੍ਰਾਜੈਕਟ ਮਿਲਿਆ।

cam~d^iigad^zha bhaarata dii ika yuuniiiana t^airat^arii hai. iha bhaarata de do suubiaan~pam~jaaba ate hariaan^aa dii raajadhaanii hai. isa nuum~ bhaarata daa khzuubasuurata shahira mam~niaa jaan~daa hai. shahira de laage de jzilhiaan~ vicca hariaan^aa de am~baalaa ate pam~cakula ate pam~jaaba de mohaalii, pat^iaalaa ate ropad^za jzilhe hana. isade uttarii hisse ton~ himaacala pradesh di hadda jziaadaa duura nahin~ hai. shahira dii aaba-o-havaa sillhii saba~t^raapikala kisama dii hai; jisa vicca garamiiaan~ vicca bahuta garamii, siaal^a vicca niggha, beatabaarii barasaata ate t^ain~parecara vicca vad^d^e phzaraka (-1° ton~ 41.2°) daa am~daajzaa rahim~da hai. siaal^a vicca disam~bara ate janavarii de mahiine vicca kade-kade koharaa ho sakadaa hai. ausata saalaanaa barasaata 111.07 c.m. hun~di hai. shahira vicca kaa vaara hahim~de ton~ paratade maavsuuna siaal^uu barasaata vii kara dim~de hana. bhaaratii pam~jaaba dii raajadjaanii cam~d^iigad^ha hai ate paakisataanii pam~jaaba di raajadhaanii lahaura hai. barataanavii him~dusataana dii vam~d^a magaron~1947 vicca suube pam~jaaba num~bhaarata ate pakisataana vickaakara do hiddiaan~ vicca vam~d^a dittaa giaa sii. isa vam~d^a karake raaja dii puraani raajadhaanii lahaura paakisataana de hisse vicca calli gaii sii. hun^a bhaaratii pam~jaaba nuum~ ikka naviin~ raajadhaanii di lod^za paii. pahilaan~ maujuuda shahiraan~ nuum~ raajadhaanii vicca badalan^a vicca aun^a vaaliiiaan~ bahuta saariiiaan~ aukad^zaan~ de sitt^e vajjon~ ikka naviin~ palainad^a raajadhaanii kaaima karana daa phaisalaa kiitaa giaa. usa vele bhaarata vicca challa rahiiiaan~ bahuta saariiiaan~ naviiiaan~ shahirii tajaviijzaan~ vicca cam~d^iigad^za nuum~ sabha ton~ vaddha ahimiiata milii jisade khzaasa kaarana sana ikka taan~ shahira dii ran^aniitaka lokeshana ate duujaa pradhaana mam~tarii javaahara laala nahiruu da isa praajaikat^a vicca jzaatii taura te rujhaana hon^aa. naviin~ kauma de maadarana ate agaan~ha-vadhuu najzariie de ruupa vicca cam~d^iigad^zha nu vehade hoe unhaan~ ne shahira nuum~ biitiiiaan~ hoiiiaan~ rivaaiitaan~ ton~ ajzaada, kauma de agge vadhan^a vicca yakiina rakkhan^a da cim~nha dassiaa. shahira daa d^ijzaaina ikka phzaraan~siisii aarkiit^aikat^a ate shahirii nakashaasaajza la kaarabuuujzie ne 1950 de dahaake vicca kiitaa. kaarabuuujzie asala vicca shahira de duusare aarkiit^aikat^a sana. pahila maasat^ara-palaina amariikii aarakit^aikat^a ailabarat^a meara ne ban^aaiaa sii, jo aarakit^aikat^a maithiuu naabiitasakii naala kam~ma karade sana. 1950 vicca naaviitasakii dii kuvele mauta kaarana kaarabuuujzie nuum~ iha praajaikat^a miliaa.

8.6 Transliteration scheme for Kannada Script

Table 6 Transliteration scheme for Kannada Script

Sl.N.	Kannada	Transliteration	Unicode	Unicode Names
1.	◌◌	n~	0C82	ANUSVARA
2.	◌ː	h`	0C83	VISARGA
3.	ಅ	a	0C85	A
4.	ಆ	aa	0C86	AA
5.	ಇ	i	0C87	I
6.	ಊ	ii	0C88	II
7.	ಉ	u	0C89	U
8.	ಊಊ	uu	0C8A	UU
9.	ಋ	r`	0C8B	VOCALIC R
10.	ೠ	lr`	0C8C	VOCALIC L
11.	ಎ	e`	0C8E	E

12.	ಎ	e	0C8F	EE
13.	ಐ	ai	0C90	AI
14.	ಒ	o`	0C92	O
15.	ಓ	o	0C93	OO
16.	ಔ	au	0C94	AU
17.	ಕ	ka	0C95	KA
18.	ಖ	kha	0C96	KHA
19.	ಗ	ga	0C97	GA
20.	ಘ	gha	0C98	GHA
21.	ಙ	nga	0C99	NGA
22.	ಚ	ca	0C9A	CA
23.	ಛ	cha	0C9B	CHA
24.	ಜ	ja	0C9C	JA
25.	ಝ	jha	0C9D	JHA
26.	ಞ	nja	0C9E	NYA
27.	ಟ	t^a	0C9F	TTA
28.	ಠ	t^ha	0CA0	TTHA
29.	ಡ	d^a	0CA1	DDA
30.	ಢ	d^ha	0CA2	DDHA
31.	ಣ	n^a	0CA3	NNA
32.	ತ	ta	0CA4	TA
33.	ಥ	tha	0CA5	THA
34.	ದ	da	0CA6	DA
35.	ಧ	dha	0CA7	DHA
36.	ನ	na	0CA8	NA

37.	ಪ	pa	0CAA	PA
38.	ಫ	pha	0CAB	PHA
39.	ಬ	ba	0CAC	BA
40.	ಭ	bha	0CAD	BHA
41.	ಮ	ma	0CAE	MA
42.	ಯ	ya	0CAF	YA
43.	ರ	ra	0CB0	RA
44.	ಱ	rza	0CB1	RRA
45.	ಲ	la	0CB2	LA
46.	ಳ	l^a	0CB3	LLA
47.	ವ	va	0CB5	VA
48.	ಶ	sha	0CB6	SHA
49.	ಷ	s^a	0CB7	SSA
50.	ಸ	sa	0CB8	SA
51.	ಹ	ha	0CB9	HA
52.	ಋ	r`r`	0CE0	VOCALIC RR
53.	ೠ	lr`lr`	0CE1	VOCALIC LL
54.	೦	0	0CE6	ZERO
55.	೧	1	0CE7	ONE
56.	೨	2	0CE8	TWO
57.	೩	3	0CE9	THREE
58.	೪	4	0CEA	FOUR
59.	೫	5	0CEB	FIVE
60.	೬	6	0CEC	SIX
61.	೭	7	0CED	SEVEN

62.	ഃ	8	0CEE	EIGHT
63.	ഌ	9	0CEF	NINE

64.	഍	h~	0CBD	AVAGRAHA
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8.7 Transliteration scheme for Malayalam Script

Table 7 Transliteration scheme for Malayalam Script

Sl.N.	Malayalam	Transliteration	Unicode	Unicode Names
1.	ഠ	n~	0D02	ANUSVARA
2.	ഡ	h`	0D03	VISARGA
3.	അ	a	0D05	A
4.	ആ	aa	0D06	AA
5.	ഇ	i	0D07	I
6.	ഈ	ii	0D08	II
7.	ഉ	u	0D09	U
8.	ഊ	uu	0D0A	UU
9.	ഋ	r`	0D0B	VOCALIC R
10.	ൠ	lr`	0D0C	VOCALIC L
11.	എ	e`	0D0E	E
12.	ഏ	e	0D0F	EE
13.	ഐ	ai	0D10	AI
14.	ഒ	o`	0D12	O
15.	ഓ	o	0D13	OO
16.	ഔ	au	0D14	AU
17.	ക	ka	0D15	KA
18.	ഖ	kha	0D16	KHA
19.	ഗ	ga	0D17	GA

20.	ഘ	gha	0D18	GHA
21.	ങ	nga	0D19	NGA
22.	ച	ca	0D1A	CA
23.	ചഠ	cha	0D1B	CHA
24.	ജ	ja	0D1C	JA
25.	ജഠ	jha	0D1D	JHA
26.	ഞ	nja	0D1E	NYA
27.	ട	t^a	0D1F	TTA
28.	ഠ	t^ha	0D20	TTHA
29.	ഡ	d^a	0D21	DDA
30.	ഢ	d^ha	0D22	DDHA
31.	ണ	n^a	0D23	NNA
32.	ത	ta	0D24	TA
33.	തഠ	tha	0D25	THA
34.	ദ	da	0D26	DA
35.	ധ	dha	0D27	DHA
36.	ന	na	0D28	NA
37.	നഠ	nza	0D29	NNNA
38.	പ	pa	0D2A	PA
39.	പഠ	pha	0D2B	PHA
40.	ബ	ba	0D2C	BA
41.	ഭ	bha	0D2D	BHA

42.	മ	ma	0D2E	MA
43.	യ	ya	0D2F	YA
44.	ര	ra	0D30	RA
45.	റ	rza	0D31	RRA
46.	ല	la	0D32	LA
47.	ള	l^a	0D33	LLA
48.	ഴ	l^za	0D34	LLLA
49.	വ	va	0D35	VA
50.	ശ	sha	0D36	SHA
51.	ഷ	s^a	0D37	SSA
52.	സ	sa	0D38	SA
53.	ഹ	ha	0D39	HA
54.	ഋ	r`r`	0D60	VOCALIC RR
55.	ൠ	lr`lr`	0D61	VOCALIC LL
56.	൦	0	0D73	ZERO
57.	൧	1	0D67	ONE

58.	൨	2	0D68	TWO
59.	൩	3	0D69	THREE
60.	൪	4	0D6A	FOUR
61.	൫	5	0D6B	FIVE
62.	൬	6	0D6C	SIX
63.	൭	7	0D6D	SEVEN
64.	൮	8	0D6E	EIGHT
65.	൯	9	0D6F	NINE
66.	ഃ	h~	0D3D	AVAGRAHA
67.	ൺ	n^~	0D7A	CHILLU NN
68.	ൻ	n~	0D7B	CHILLU N
69.	ർ	rz~	0D7C	CHILLU RR
70.	ൽ	l~	0D7D	CHILLU L
71.	ൾ	l^~	0D7E	CHILLU LL
72.	ക്	k~	0D7F	CHILLU K

8.7.1 Malayalam example sentences in proposed scheme:

Malayalam Sentence	Trasliteration
നാസയുടെ ആർട്ടിമിസ് ഒന്നാം ദൗത്യം വിജയകരമായി പൂർത്തിയാക്കി.	naasayut^e` aarz!t^t^imis o`nnaan~dautyan~ vijayakaramaayi puurz!ttiyaakki.
ചന്ദ്രനെ ചുറ്റി സുരക്ഷിതമായി തിരിച്ചെത്തിയ ഒരൈയോൺ സമീപ ഭാവിയിൽ തന്നെ മനുഷ്യരുമായി യാത്ര പുറപ്പെടും	. candrane` curzrzi surakshitamaayi tiriice` ttiya o`rzaiyon^z! samiipa bhaaviyilz! tanne` manus^yarumaayi yaatra purzappe`t^un~.
ഈ സീസൺ ആർട്ടിക് സ്പോടനത്തോടെയാണ് ആരംഭിച്ചത്.	ii siisan^z! aarz!t^t^ik sphotanattot^e`yaan^aaran~bhiccat.

<p>ധ്രുവപ്രദേശങ്ങളിൽ നിന്നു തന്നെ വീശുന്നതിനെയാണ് ആർട്ടിക് വോർട്ടിക്സ് അല്ലെങ്കിൽ പോളാർ വോർട്ടിക്സ് എന്ന് വിളിക്കുന്നത്.</p>	<p>dhrzuvaprzadeshanggal[^]ilz! ninn tan[^]utta kaarrz viishunnatine`yaan[^] aarz!t[^]t[^]ik vorz!t[^]t[^]aks alle`ngkilz! pol[^]aarz! vorz!t[^]t[^]aks e`nn vil[^]ikkunnat.</p>
<p>ഏറോണെയെന്ന വാക്കിലാണ് 2022 ന്റെ ശാസ്ത്രലോകം ഉണർന്നത്.</p>	<p>phl[^]urzon[^]aye`nna vaakkilaan[^] റംററററ nz!rze`shaastralokan~ un[^]arz!nнат.</p>
<p>കൊറോണയും ഇൻഫ്ലുവൻസയും ചേർന്ന് വരുന്ന രോഗാവസ്ഥ ഇസ്രായേലിൽ റിപ്പോർട്ട് ചെയ്യപ്പെട്ടതായിരുന്നു വാർത്ത.</p>	<p>ko`rzon[^]ayun~ inz!phl[^]uvanz!sayun~ cerz!nn varunna rogaavastha israayelilz! rzipporz!t[^]t[^] ce`yyappe`t[^]t[^]ataayirunnu vaarz!tta.</p>
<p>പക്ഷേ, കൊവിഡ് സുനാമിക്ക് ശമനമുണ്ടായി.</p>	<p>paks[^]e ko`vid[^] sunaamikk shamanamun[^]t[^]aayi.</p>

8.8 Transliteration scheme for Meetei Mayek

Table 8 Transliteration scheme for Meetei Mayek

SIN	Meetei Mayek	Transliteration	Unicode	Unicode Names
1.	ᩈ	ka	ABC0	KOK (k)
2.	ᩃ	sa	ABC1	SAM (s)
3.	ᩆ	la	ABC2	LAI (l)
4.	ᩉ	ma	ABC3	MIT (m)
5.	ᩊ	pa	ABC4	PA (p)
6.	ᩋ	na	ABC5	NA (n)
7.	ᩌ	ca	ABC6	CHIL (c)
8.	ᩍ	ta	ABC7	TIL (t)
9.	ᩎ	kha	ABC8	KHOU (k ^h)
10.	ᩏ	nga	ABC9	NGOU (ŋ)
11.	ᩐ	tha	ABCA	THOU (t ^h)
12.	ᩑ	wa	ABCB	WAI (w)
13.	ᩒ	ya	ABCC	YANG (j)
14.	ᩓ	ha	ABCD	HUK (h)
15.	ᩔ	uu	ABCE	UN (u)
16.	ᩕ	ii	ABCF	I (i)
17.	ᩖ	pha	ABD0	PHAM (p ^h)
18.	ᩗ	a	ABD1	ATIYA (ə)
19.	ᩘ	ga	ABD2	GOK (g)
20.	ᩙ	jha	ABD3	JHAM (t ^h)
21.	ᩚ	r`	ABD4	RAI (ɹ)
22.	ᩛ	ba	ABD5	BA (b)
23.	ᩜ	ja	ABD6	JIL (j)
24.	ᩝ	da	ABD7	DIL (d)

25.	ଘ	gha	ABD8	GHOu (g ^h)
26.	ଘ	dha	ABD9	DHOu (d ^h)
27.	ଘ	bha	ABDA	BHAM (b ^h)
28.	ଘ	k:	ABDB	KOK LONSUM (k)
29.	ଘ	l:	ABDC	LAI LONSUM (l)
30.	ଘ	m:	ABDD	MIT LONSUM (m)
31.	ଘ	p:	ABDE	PA LONSUM (p)
32.	ଘ	n:	ABDF	NA LONSUM (n)
33.	ଘ	t:	ABE0	TIL LONSUM (t)
34.	ଘ	ng:	ABE1	NGOU LONSUM (ŋ)
35.	ଘ	i:	ABE2	I LONSUM (i)
36.	ଘ	o	ABE3	ONAP (o)
37.	ଘ	i	ABE4	INAP (i)

38.	ଘ	aa	ABE5	ANAP (a)
39.	ଘ	e	ABE6	YENAP (e)
40.	ଘ	au	ABE7	SOUNAP (əu)
41.	ଘ	u	ABE8	UNAP (u)
42.	ଘ	ai	ABE9	CHEINAP (əi)
43.	ଘ	n~	ABEA	NUNG (ŋ)
44.	୦	0	ABF0	ZERO
45.	୧	1	ABF1	ONE
46.	୨	2	ABF2	TWO
47.	୩	3	ABF3	THREE
48.	୪	4	ABF4	FOUR
49.	୫	5	ABF5	FIVE
50.	୬	6	ABF6	SIX
51.	୭	7	ABF7	SEVEN
52.	୮	8	ABF8	EIGHT
53.	୯	9	ABF9	NINE

8.9 Transliteration scheme for Oriya Script

Table 9 Transliteration scheme for Oriya Script

Sl.N.	Odia	Transliteration	Unicode	Unicode Names
1.	ଂ	m~	0B01	CANDRABINDU
2.	ଃ	n~	0B02	ANUSVARA
3.	ଃ	h`	0B03	VISARGA
4.	ଅ	a	0B05	A
5.	ଆ	aa	0B06	AA
6.	ଇ	i	0B07	I
7.	ଈ	ii	0B08	II
8.	ଉ	u	0B09	U

9.	ଉ	uu	0B0A	UU	33.	ଦ	da	0B26	DA
10.	ର	r`	0B0B	VOCALIC R	34.	ଧ	dha	0B27	DHA
11.	ୠ	lr`	0B0C	VOCALIC L	35.	ନ	na	0B28	NA
12.	ଏ	e	0B0F	E	36.	ପ	pa	0B2A	PA
13.	ଆ	ai	0B10	AI	37.	ଫ	pha	0B2B	PHA
14.	ଓ	o	0B13	O	38.	ବ	ba	0B2C	BA
15.	ଔ	au	0B14	AU	39.	ଭ	bha	0B2D	BHA
16.	କ	ka	0B15	KA	40.	ମ	ma	0B2E	MA
17.	ଖ	kha	0B16	KHA	41.	ଯ	ya	0B2F	YA
18.	ଗ	ga	0B17	GA	42.	ର	ra	0B30	RA
19.	ଘ	gha	0B18	GHA	43.	ଲ	la	0B32	LA
20.	ଙ	nga	0B19	NGA	44.	ଳ	l^a	0B33	LLA
21.	ଚ	ca	0B1A	CA	45.	ୱ	va	0B35	VA
22.	ଛ	cha	0B1B	CHA	46.	ଶ	sha	0B36	SHA
23.	ଜ	ja	0B1C	JA	47.	ଷ	s^a	0B37	SSA
24.	ଝ	jha	0B1D	JHA	48.	ସ	sa	0B38	SA
25.	ଞ	nja	0B1E	NYA	49.	ହ	ha	0B39	HA
26.	ଟ	t^a	0B1F	TTA	50.	ଡ	d^za	0B5C	DDHA
27.	ଠ	t^ha	0B20	TTHA	51.	ଢ	d^hza	0B5D	RHA
28.	ଡ	d^a	0B21	DDA	52.	ଣ	yza	0B5F	YYA
29.	ଢ	d^ha	0B22	DDHA	53.	ର	r`r`	0B60	VOCLIC RR
30.	ଣ	n^a	0B23	NNA	54.	ଢ	lr`lr`	0B61	VOCLIC LL
31.	ତ	ta	0B24	TA	55.	୦	0	0B66	ZERO
32.	ଥ	tha	0B25	THA	56.	୧	1	0B67	ONE

57.	୨	2	0B68	TWO	62.	୭	7	0B6D	SEVEN
58.	୩	3	0B69	THREE	63.	୮	8	0B6E	EIGHT
59.	୪	4	0B6A	FOUR	64.	୯	9	0B6F	NINE
60.	୫	5	0B6B	FIVE	65.	ଏ	h~	0B3D	AVAGRAHA
61.	୬	6	0B6C	SIX					

8.9.1 Odia example words in proposed scheme:

କା (kaa), କି (ki), କୀ (kii), କୁ (ku), କୁ (kuu), କେ (ke), କୈ (kai), କୋ (ko), କୌ (kau), କଂ (kam~), କଂ (kan~) କାଂ (kaam~), କାଁ (kaan~) କିଂ (kim~), କୀଂ (kiim~), କୁଂ (kum~), କୁଁ (kun~) କୁଂ (kum~), କୁଁ (kuun~) କେଂ (kem~), କୈଂ (kaim~), କୋଂ (kom~), କୌଂ (kaum~)

କଟକ (kat^aka), ଘାଟ (ghaat^a), ଘୃତ (ghr^ta), ବାଣୁଆ (baan^uaa), ରଷି (r`s^i), ବୁଢ଼ା (bud^hzaa), ପାଟଣା (paat^an^aa), ଅମ୍ବର (ambaraa), କୁମ୍ଭୀର (kumbhiira), ପଶ୍ଚିମ (pashchima),

ଅକ୍ଷଫୋଡ଼ (aksaphord^a), ସର୍କସା (sarkasa), ଗୁମ୍ଫା (gumphaa), ଉଦୟଗିରି (uday^agirii), ମନ୍ଦିର (mandira), ଗାନ୍ଧି (gaandhi), ଲଙ୍କାମରିଚ (langkaamaricha), ଆଳୁ (aal^u), ପ୍ରାସାଦ (praasaada), ପୃଥ୍ଵୀରାଜ (pr^thbiiraaja), ଲକ୍ଷ୍ମୀ (lakshmi), ଭଣ୍ଡାର (bhan^d^aara), ପଶ୍ଚିମାଞ୍ଚଳ (pashchimaanjchal^a), ବସନ୍ତ (basanta), କର୍ଣ୍ଣାଟକ (karn^an^aat^aka), ବୁଦ୍ଧ (budhdha), ଆବ୍ରାହମ ଲିଙ୍ଗ (aabraahama lingkana), ଭାରତୀୟ (bharadbaaja), ଜାତିୟ (jaatiiy^a), ଇନ୍ଦୋନେସିଆ (in^d^onesiaa), ଭାରତ (bhaarata), ରାଜସ୍ଥାନ (raajasthaana), ଉତ୍ତରାଞ୍ଚଳ (uttaranjchal^a), ବ୍ରାଜିଲ (braajila), ପାଣିପିନ୍ଧି (pan^d^ita), କାଜିରଙ୍ଗା (kaajirangga), କାଠମାଣ୍ଡୁ (kaat^hamaan^d^u), କାଶ୍ମୀର (kaashmiira), ଅଗଷ୍ଟ (agas^t^a), ବ୍ରାହ୍ମଣ (braahman^a)

8.10 Transliteration scheme for Tamil Script

Table 10 Transliteration scheme for Tamil Script

Sl.N.	Tamil	Transliteration	Unicode	Unicode Names
1.	◌̣	n~	0B82	ANUSVRA
2.	◌̣	h`	0B83	VISARGA
3.	அ	a	0B85	A
4.	ஆ	aa	0B86	AA
5.	இ	i	0B87	I
6.	ஈ	ii	0B88	II
7.	உ	u	0B89	U
8.	ஊ	uu	0B8A	UU
9.	எ	e`	0B8E	E

10.	ஏ	e	0B8F	EE
11.	ஐ	ai	0B90	AI
12.	ஓ	o`	0B92	O
13.	ஔ	o	0B93	OO
14.	ஔள	au	0B94	AU
15.	க	ka	0B95	KA
16.	ங	nga	0B99	NGA
17.	ச	ca	0B9A	CA
18.	ஜ	ja	0B9C	JA
19.	ஞ	nja	0B9E	NYA
20.	ட	t^a	0B9F	TTA
21.	ண	n^a	0BA3	NNA
22.	த	ta	0BA4	TA
23.	ந	na	0BA8	NA
24.	ன	nza	0BA9	NNNA
25.	ப	pa	0BAA	PA
26.	ம	ma	0BAE	MA
27.	ய	ya	0BAF	YA
28.	ர	ra	0BB0	RA
29.	ற	rza	0BB1	RRA

30.	ல	la	0BB2	LA
31.	ள	l^a	0BB3	LLA
32.	ழ	l^za	0BB4	LLLA
33.	வ	va	0BB5	VA
34.	ஸ	sha	0BB6	SHA
35.	ஷ	s^a	0BB7	SSA
36.	ஸ	sa	0BB8	SA
37.	ஹ	ha	0BB9	HA
38.	௦	0	0BE6	ZERO
39.	௧	1	0BE7	ONE
40.	௨	2	0BE8	TWO
41.	௩	3	0BE9	THREE
42.	௪	4	0BEA	FOUR
43.	௫	5	0BEB	FIVE
44.	௬	6	0BEC	SIX
45.	௭	7	0BED	SEVEN
46.	௮	8	0BEE	EIGHT
47.	௯	9	0BEF	NINE
48.	ஓ	o`m	0BD0	OM

8.10.1 Tamil example sentences and corresponding Transliteration:

Tamil sentences	Transliteration
நாஜி குறியாக்க இயந்திரமான எனிக்மாவை உடைத்து, இரண்டாம் உலகப் போரில் நேசநாட்டுப் படைகள் வெற்றி பெற உதவிய பத்தாண்டுகளுக்குள், கணிதவியலாளரான ஆலன் டிரிங்,	naaji kurzikka iyantiramaanza e`nzikmaavai ut^aittu, iran^t^aam ulakap poril necanaat^t^up pat^aikal^ ve`rzzi pe`rza utaviya pattaan^t^ukal^ukkul^, kan^itaviyalaal^araanza aalanz t^uuring, "iyantirangkal^aal cintikka mut^iyumaa?"

<p>“இயந்திரங்களால் சிந்திக்க முடியுமா?” என்கிற கேள்வியுடன் வரலாற்றை மாற்றியமைக்க முனைந்தார்.</p>	<p>e`nzkirza kel`viyut`anz varalaarzzai maarzriyamaikka munzaintaar.</p>
<p>1950 ஆம் ஆண்டில், அவர் ‘கணினி இயந்திரம் மற்றும் நுண்ணறிவு’ எனும் கட்டுரையினை வெளியிட்டதுடன், அவரது அடுத்தடுத்த சோதனைகள், செயற்கை நுண்ணறிவின் அடிப்படை இலக்கையும், பார்வையையும் நிறுவியது.</p>	<p>1950 aam aan`til, avar `kan`inzi iyantiram marzzum nun`n`arzivu` e`nzum kat`^urayinzai vel`iyit`^atut`anz, avaratu atuttatutta cotanzaikal`, ce`yartzkai nun`n`arzivinz at`ippat`ai ilakkaiyum, paarvaiyaiyum nirzuviyatu.</p>
<p>விண்வெளிக்கு மனிதர்களை அனுப்ப பயன்படுத்தும் கிரையோஜெனிக் இயந்திர சோதனை நெல்லை மாவட்டம் மகேந்திரகிரி விண்வெளி ஆராய்ச்சி மையத்தில் நடைபெற்றது.</p>	<p>vin`ve`l`ikku manzitarkal`ai anzuppaa payanzpat`uttum kiraiyoje`nzik iyantira cotanzai ne`llai maavat`^am makentirakiri vin`vin`ve`l`i aaraaycci maiyattil nat`aipe`rzzatu.</p>
<p>இந்த சோதனை வெற்றி பெற்றதாக கூறப்பட்டுள்ளது.</p>	<p>inta cotanzai ve`rzzai pe`rzzataaka kuurzappat`^ul`^atu.</p>
<p>கிரையோஜெனிக் எந்திரத்தின் சி.20 இ 11 எம்.கே.111 பரிசோதனை 28 விநாடிகள் நீடித்தது. இந்த சோதனை வெற்றிகரமாக நடந்து முடிந்ததாக இஸ்ரோ விஞ்ஞானிகள் தரப்பில் தெரிவிக்கப்பட்டுள்ளது.</p>	<p>kiraiyoje`nzik e`ntirattinz ci.20 i11 e`m.ke.111 paricotanai ve`rzzikaramaaka nat`antu mut`intataaka isro vinjnjaanzikal` tarappil te`rivikkappat`^ul`^atu.</p>
<p>ஒரு மனிதரிடம் இருந்து மற்றொருவருக்கு பரவும் போது சிறு சிறு மாற்றங்கள் அதன் உயிர் அணுக்களில் ஏற்படும்.</p>	<p>o`ru manzitarit`am iruntu marzro`ruvarukku paravum potu cirzu cirzu maarzrzangkal` atanz uyir an`ukkal`il erzpat`um.</p>
<p>கொஞ்சம் வெளிப்படையான மாற்றம் ஏற்படும் போது அதை புதிய திரிபு வைரஸ் என்று அடையாளப்படுத்துவர். அப்படி கொரோனா வைரஸ், ஆல்பா, பீட்டா, காமா, ஓமிக்ரோன் என்று பல்வேறு திரிபுகளை கண்டறிந்தது.</p>	<p>ko`njcam ve`l`ippat`aiyaanza maarzrzam erzpatum potu atai putiya wiripu vairas enzru at`aiyaal`appatt`uvar. appat`i ko`ronzaa vairas, aalpa, piit`^aa, kaamaa, omikronz e`nzru palverzu tiripukal`ai kan`tarzintatu.</p>
<p>இந்தியா , ஆப்பிரிக்கா நாடுகளில் கண்டறிய பட்ட இந்த திரிபுகளால்</p>	<p>intiyaa, aappirikkaa naat`ukal`il kan`t`rziya pat`^a inta tiripukal`aal</p>

<p>பல்லாயிரக்கணக்கான மக்கள் பாதிக்கப்பட்டு உயிர் இழந்தனர். தடுப்பூசிகள், கட்டுப்பாடுகள் போன்றவற்றால் நோய் பாதிப்புகளை குறைத்த நிலையில் தற்போது மீண்டும் சீனாவில் BF.7 என்ற வைரஸின் புதிய மாறுபாட்டுத் தொற்று வேகமாக பரவி வருகிறது.</p>	<p>pallaayirakkan^akkaanza makkal^ paatikkappat^tu uyir ilzantanzar. tat^uppuucikal^, kat^t^uppaat^ukal^ ponrzavarzraal noy paatippukal^ai kurzaitta nilaiyil tarzoity miin^um ciinzaavil BF.7 e`nrza vairasinz putiya maarzupaat^t^ut to`rzzu vekamaaka paravi varukirzatu.</p>
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8.11 Transliteration scheme for Telugu Script

Table 11 Transliteration scheme for Telugu Script

Sl.N.	Telugu	Transliteration	Unicode	Unicode Names
1.	◌ఠ	m~	0C01	CANDRABIND U
2.	◌ౠ	n~	0C02	ANUSVARA
3.	◌ః	h`	0C03	VISARGA
4.	అ	a	0C05	A
5.	ఆ	aa	0C06	AA
6.	ఇ	i	0C07	I
7.	ఈ	ii	0C08	II
8.	ఉ	u	0C09	U
9.	ఊ	uu	0C0A	UU
10.	ఋ	r`	0C0B	VOCALIC R
11.	ౠ	lr`	0C0C	VOCALIC L
12.	ఎ	e`	0C0E	E
13.	ఏ	e	0C0F	EE
14.	ఐ	ai	0C10	AI
15.	ఒ	o`	0C12	O
16.	ఓ	o	0C13	OO
17.	ఔ	au	0C14	AU
18.	క	ka	0C15	KA
19.	ఖ	kha	0C16	KHA
20.	గ	ga	0C17	GA
21.	ఘ	gha	0C18	GHA
22.	ఙ	nga	0C19	NGA
23.	చ	ca	0C1A	CA
24.	ఛ	cha	0C1B	CHA
25.	జ	ja	0C1C	JA
26.	ఝ	jha	0C1D	JHA
27.	ఞ	nja	0C1E	NYA
28.	ట	t^a	0C1F	TTA
29.	ఠ	t^ha	0C20	TTHA
30.	డ	d^a	0C21	DDA
31.	ఢ	d^ha	0C22	DDHA
32.	ణ	n^a	0C23	NNA

33.	త	ta	0C24	TA
34.	థ	tha	0C25	THA
35.	ద	da	0C26	DA
36.	ధ	dha	0C27	DHA
37.	న	na	0C28	NA
38.	ప	pa	0C2A	PA
39.	ఫ	pha	0C2B	PHA
40.	బ	ba	0C2C	BA
41.	భ	bha	0C2D	BHA
42.	మ	ma	0C2E	MA
43.	య	ya	0C2F	YA
44.	ర	ra	0C30	RA
45.	ఱ	rza	0C31	RRA
46.	ల	la	0C32	LA
47.	ళ	l^a	0C33	LLA
48.	వ	va	0C35	VA

49.	శ	sha	0C36	SHA
50.	ష	s^a	0C37	SSA
51.	స	sa	0C38	SA
52.	హ	ha	0C39	HA
53.	ఝ	r`r`	0C60	VOCALIC RR
54.	ఞ	lr`lr`	0C61	VOCALIC LL
55.	౦	0	0C66	ZERO
56.	౧	1	0C67	ONE
57.	౨	2	0C68	TWO
58.	౩	3	0C69	THREE
59.	౪	4	0C6A	FOUR
60.	౫	5	0C6B	FIVE
61.	౬	6	0C6C	SIX
62.	౭	7	0C6D	SEVEN
63.	౮	8	0C6E	EIGHT
64.	౯	9	0C6F	NINE
65.	౨	h~	0C3D	AVAGRAHA

8.11.1 Telugu example words and sentences in proposed scheme:

క (ka), కా (kaa), కి (ki), కీ (kii), కు (ku), కూ (kuu), కృ (kr`), కృ (kr`r`), కె (ke`), కే (ke), కై (kai),
కొ (ko`), కో (ko), కౌ (kau), కం (ka.n), కః (kah`)

పుస్తకం (pustaka.n), అమ్మాయి (ammaayi), గుడి (gud^i), తల (tala), కాలు (kaalu), చెయ్యి (ce`yyi),
పరిగెత్తు (parige`ttu), చెప్పు (ce`ppu), జుట్టు (jut^t^u), భుజం (bhuja.n), ముక్కు (mukku), కళ
(kal^a), ఇవ్వు (ivvu), ప్రీమించు (premi.ncu), వర్షం (vars^a.n), శరీరం (shariira.n), తాగు (taagu),
అడుగు (ad^ugu), కొను (ko`nu), చదువు (caduvu), తిను (tinu), వృక్షం (vr`ks^a.n), క్షమించు
(ks^ami.ncu)

8.11.2 Sample Telugu Text in Telugu and Roman script:-

కీళ్ల వ్యాధి(ఆస్టియోఆర్థరైటిస్) చికిత్సకు హైదరాబాద్ కు చెందిన లీ హెల్త్ డొమెయిన్ సరికొత్త ఔషధాన్ని రూపొందించింది. శక్తివంతమైన పైటో పోషకాలతో సహజ బయోస్యూట్రాస్యూటికల్స్ ఆధారంగా స్మూత్ వాక్ బ్రాండ్ పేరుతో ఈ ట్యూబ్లెట్లను తయారు చేశారు. కొలాజెన్ టైప్-2, ఎగ్ షెల్ నుంచి సేకరించిన పొర, గుగ్గిలం, పసుపు నుంచి తీసిన కుర్కుమిన్, విటమిన్ డి-3 మేళవింపుతో ఔషధాన్ని ఉత్పత్తి చేశారు. మృదులాస్థిని(కార్టిలేజ్) పెంచి కీళ్లలో కణజాల రుగ్మతలపై ఇది చక్కగా పనిచేస్తుంది. తద్వారా నొప్పులు, గట్టిదనాన్ని తగ్గిస్తుంది. ఈ మందు వాడితే సర్దరీలను నివారించవచ్చని కంపెనీ డైరెక్టర్ లీలా రాణి వెల్లడించారు.

సాధారణంగా బాధితుల్లో ఎక్కువ మంది మందులు, చికిత్సల కోసం వెళతారు. చివరి ప్రయత్నంగా శస్త్ర చికిత్స(సర్దరీ) చేయించుకుంటున్నారు. ఆస్టియోఆర్థరైటిస్ చికిత్సలో వాడే నాన్ స్టెరాయిడ్ ల యాంటీ ఇన్ ఫ్లామేటరీ డ్రగ్స్, అనాల్జెసిక్స్ నొప్పిని నివారించి తాత్కాలికంగా ఉపశమనాన్ని కలిగిస్తాయి. స్మూత్ వాక్ ట్యూబ్లెట్లు రోజు 2-3 వేసుకోవడం ద్వారా మూడు వారాల్లో నొప్పుల నుంచి వేగంగా ఉపశమనం లభిస్తుంది. ఇది సరళత(లూబ్రికేషన్), కదలిక మెరుగుపరిచి కీళ్లకు అనువుగా ఉంటుంది. ట్యూబ్లెట్లను మూడు నాలుగు నెలలు వాడడం ద్వారా సర్దరీలను నివారించవచ్చు.

18 ఏళ్లపైబడ్డ వారందరూ వాడొచ్చు. కోవిడ్-19 నేపథ్యంలో ఆసుపత్రికి వెళ్లలేనివారు ఆన్ లైన్ లో అమెజాన్ ద్వారా స్మూత్ వాక్ ను కొనుగోలు చేయవచ్చు. అభివృద్ధి చెందిన, చెందుతున్న దేశాల్లో కీళ్లవాపునకు (ఆర్థరైటిస్) సంబంధించి ఆస్టియోఆర్థరైటిస్ సాధారణంగా వచ్చే రెండవ అతిపెద్ద జబ్బు. దేశంలో 18 కోట్లకు మందికిపైగా ఈ సమస్యతో బాధపడుతున్నారు. మధుమేహం, ఎయిడ్స్, క్యాన్సర్ రోగుల కంటే ఆర్థరైటిస్ బాధితులే అధికం. పురుషులతో పోలిస్తే మహిళలే ఎక్కువగా ఈ రుగ్మత బారిన పడుతున్నారు. 65 ఏళ్లపైబడ్డ మహిళల్లో 45 శాతం మందికి ఈ జబ్బు లక్షణాలు బయటపడుతున్నాయి. పరీక్షల్లో వీరిలో 70 శాతం మందికి రుగ్మత నిర్ధారణ అవుతోంది.

kiil^la vyaadhi(aast^iyoaartharait^is) cikitsaku haidaraabaadku ce` .ndina lii he`lt d^o` me`yin sariko`tta aus^adhaanni ruupo`.ndi.nci.ndi. shaktiva.ntamaina phait^o pos^akaaalato sahaja bayonyuut^raasyuut^ikals aadhaara.ngaa smuutvaak braa.nd^ peruto ii t^yaable`t^lanu tayaaru cessaaru. ko`laaje`n t^aip-2, e`g s^e`l nu.nci sekari.ncina po`ra, guggila.n, pasupu nu.nci tiisina kurkumin, vit^amin d^i-3 mel^avi.nputo aus^adhaanni utpatti cessaaru. mr`dulaasthini(kaart^ilej) pe`.nci kiil^lalo kan^ajaala rugmatalapai idi cakkagaa panicestu.ndi. tadvaaraa no`ppulu, gat^t^idanaanni taggistu.ndi. ii ma.ndu vaad^ite sarjariilanu nivaari.ncavaccani ka.npe`nii d^aire`kt^ar liilaa raan^i ve`llad^i.ncaaru.

saadhaaran^a.ngaa baadhitullo e`kkuva ma.ndi ma.ndulu, cikitsala kosa.n ve`l^ataaru. civari prayatna.ngaa shastra cikitsa(sarjarii) ceyi.ncuku.nt^unnaaru. aast^iyoaartharait^is cikitsalo vaad^e naanst^e`raayid^al yaa.nt^ii inphlaamet^arii d^rags, anaalje`siks no`ppini nivaari.nci taatkaalika.ngaa upashamanaanni kaligistaayi. skuutvaak t^yaable`t^lu rojuu 2-3 vesukovad^a.n dvaaraa muud^u vaaraallo no`ppula nu.nci vega.ngaa upashamana.n labhistu.ndi. idi saral^ata(luubrikes^an), kadalika me`ruguparici kiil^laku anuvugaa u.nt^u.ndi. t^yaable`t^lanu muud^u naalugu ne`lalu vaad^ad^a.n dvaaraa sarjariilanu nivaari.ncavaccu.

18 el^lupaibad^d^a vaara.ndaruu vaad^o`ccu. kovid^19 nepathya.nlo aasupatriki ve`l^lalenivaaru aanlainlo ame`jaan dvaaraa smuutvaaknu ko`nugolu ceyavaccu. abhivr`ddhi ce`.ndina, ce`.ndutunna deshaallo kiil^lavaapunaku (aartharait^is) sa.nba.ndhi.nci aast^iyoaartharait^is saadhaaran^a.ngaa vacce re`.nd^ava atipe`dda jabbu. desha.nlo 18 kot^laku ma.ndikipaigaa ii samasyato baadhpad^utunnaaru. madhumeha.n, e`yid^s, kyaansar rogula ka.nt^e aartharait^is baadhitule adhika.n. purus^ulato poliste mahil^ale e`kkuvagaa ii rugmata baarina pad^utunnaaru. 65 el^lupaibad^d^a mahil^allo 45 shaata.n ma.ndiki ii jabbu laks^an^aalu bayat^apad^utunnaayi. pariiks^allo viirilo 70 shaata.n ma.ndiki rugmata nirdaaran^a avuto.ndi.

9 SPECAIL REQUIREMENTS

Rule 1. All transliterations made using this standard shall be case-sensitive.

Rule 2. Inherent inherent vowel (ə) with a consonant shall always be transliterated. The consonants of most of the Indian languages carry inherent vowel (ə) sound and it is represented specifically by inserting ‘a’ after consonants if these are not followed by any dependent vowel.

Rule 3. As nasalization can be represented in Indian scripts using a diacritic symbol (Bindi or Anuswar), while transliterating, the orthographic representation of the source script is to be taken into consideration e.g. for हिंदी [hin~dii] and हिन्दी [hindii].

Rule 4. When Candrabindu or Anusvara represents vowel nasalization in a modern language, it shall be transliterated as a (m~) after the transliterated vowel. In the case of the digraphs ai, au, the (m~) shall be placed after to the second vowel.

NOTE 1 Vowel nasalization in modern languages (“modern nasalization”) occurs in languages of North India and Nepal, but not in classical Sanskrit or Vedic. Its general sign is Chandrabindu but, in Hindi and Nepali, Chandrabindu reduces to a dot after a vowel extending above the line.

Rule 5. When Chandrabindu or Anusvara or Bindi are associated with a vowel or a consonant, they shall be placed after that vowel or consonant. When these are associated with a dependent vowel or Matra, they shall be placed after the dependent vowel or Matra in transliterated form.

Rule 6. Latin punctuation signs and Hindu-Arabic numerals shall remain unchanged in transliteration. The numerals represented in respective scripts are to be changed with their Hindu-Arabic numeral equivalents.

Rule 7. A colon : before a Latin character shall be used to resolve ambiguity. Some normative cases are as follows:

- Vowel hiatus, not digraph transliteration of diphthongs; as in Hindi कौ (kai) “of” vs. कई (ka:i) “many” and in Bengali ba:i (not bai) for representing বই “book”.
- r:ya for Nepali - र्य (not rya, र्य)
- If combination of successive consonants also used to represent another consonant, than colon is used to disntinguish between the two e.g. ब्ह (b:ha) vs. भ (bha)

NOTE 2 A colon at the end of a word is normal punctuation.

Rule 8. If a word is ending with a Halant or Viram sign to indicate specific vowel drop, then in transliteration, final ‘a’ after the last character is to be dropped e.g. सत्त् (satat)

Rule 9. Caret sign ^ is used for Retroflex consonants.

Rule 10. ` (grave accent) is used for with not so commonly used characters (e.g. Vocalic RR)

Rule 11. All Nukta characters use “z” to represent Nukta symbol.

Rule 12. Unicode Non-Joiner character is represented by \ (Backslash).

Rule 13. The special symbol Addak used for gemmination in Gurmukhi is represented with the repetition of the consonant following it e.g. ਬੱਚਾ baccaa, ਗੱਲ galla, ਸਿੱਖਿਆ sikkhiaa.

Rule 14. Characters used to represent Sindhi implosive consonants make use of underscore characters after consonants e.g. ɠ (g_a)

ANNEX A

(Foreword)

SCHEDULED LANGUAGES IN INDIA AND CORRESPONDING SCRIPTS

	Language	Language Code (ISO 639-3:2007)	Script	Script Code (ISO 15924:2004)
1.	Assamese	asm	Bangla	beng
2.	Bangla	ben	Bangla	beng
3.	Bodo	brx	Devanagri	deva
4.	Dogri	doi	Devanagri	deva
5.	Gujarati	guj	Gujarati	gujr
6.	Hindi	hin	Devanagri	deva
7.	Kannada	kan	Kannada	knda
8.	Kashmiri	kas	Devanagri, Perso- Arabic	deva, arab
9.	Konkani	kok	Devanagri, Kannada, Malyalam, Perso- Arabic	deva, knda, mlym, arab
10.	Maithili	mai	Devanagri	Deva
11.	Manipuri	mni	Manipuri/Meitei Mayek, Bangla	mtei, beng
12.	Malayalam	mal	Malayalam	Mlym
13.	Marathi	mar	Devanagri	Deva
14.	Nepali	nep	Devanagri	Deva

15.	Oriya	ori	Oriya	Orya
16.	Punjabi	pan	Gurmukhi	Guru
17.	Sanskrit	san	Devanagri	Deva
18.	Santali	sat	Devanagri, Ol Chiki	deva, olck
19.	Sindhi	snd	Devanagri, Perso-Arabic	deva,
20.	Tamil	tam	Tamil	Taml
21.	Telugu	tel	Telugu	Telu
22.	Urdu	urd	Perso-Arabic	Arab

ANNEX B

COMPARISON OF DIFFERENT TRANSLITERATION SCHEMES

The Table 12 and 13 shows the transliteration of Devanagari Script using various transliteration schemes mentioned in Clause 4 (however, it is applicable for all major Indian scripts). The last column shows the transliteration scheme defined in this standard.

Table 12 Comparison of Different transliteration schemes

Sl.	Unicode Name	Dev	CIIL	WX	ITRANS	NLKR	ISO-15919	HK	IAST h s	INSROT	Velthuis	This Indian standard
1.	CHANDRABINDU	ँ	m'	z	.N					m_'	"m	m~
2.	ANUSVARA	ं	aM	M	.n	aṃ		M	M ṃ	m'	.m	n~
3.	VISARGA	ः	aH	H	H	aḥ		H	H ḥ	:	.h	h`
4.	A	अ	a	a	a	a	a	a	A a	a	a	a
5.	AA	आ	A	A	aa	ā	ā	A	Ā ā	aa	aa	aa
6.	I	इ	i	i	i	i	i	i	I i	i	i	i
7.	II	ई	I	I	ii	ī	ī	I	Ī ī	ii	ii	ii
8.	U	उ	u	u	u	u	u	u	U u	u	u	u

9.	UU	ऊ	U	U	uu	ū	ū	U	Ūū	uu	uu	uu
10.	VOCALIC R	ऋ	x	q	RRi	ṛ	ṛ	R	Ṛṛ	r'i	.r	r`
11.	VOCALIC L	ऌ	q	L	LLi		!	IR	Ḍ!	lr'i	.l	lr`
12.	CANDRA E	ँ	ae				ê					a`
13.	SHORT E	ऐ	e	eV	E	e	e			e'		e`
14.	E	ए	E	e	e	ē	ē	e	E e	e	e	e
15.	AI	ऐ	ai	E	ai	ai	ai	ai	Ai\ai	ai	ai	ai
16.	CANDRA O	ँ	ao	AV		--				o'		ao
17.	SHORT O	ओ	o	oV	O	o	o					o`
18.	O	ओ	O	o	o	o	ō	o	O o	o	o	o
19.	AU	औ	au	O	au	ō		au	Au\au	au	au	au
20.	KA	क	ka	ka	ka	ka	ka	ka	Ka\ka	ka	ka	ka
21.	KHA	ख	kha	Ka	kha	kha	kha	kha	Kha\kha	kha	kha	kha
22.	GA	ग	ga	ga	ga	ga	ga	ga	Ga\ga	ga	ga	ga
23.	GHA	घ	gha	Ga	gha	gha	gha	gha	Gha\gha	gha	gha	gha
24.	NGA	ङ	ng'a	fa	~Na	ña	ña	Ga	Ña\ña	ng'a	"na	nga
25.	CA	च	ca	ca	cha	ca	ca	ca	Ca\ca	cha	ca	ca
26.	CHA	छ	cha	Ca	chha	cha	cha	cha	Cha\cha	c'ha	cha	cha
27.	JA	ज	ja	ja	ja	ja	ja	ja	Ja\ja	ja	ja	ja
28.	JHA	झ	jha	Ja	jha	jha	jha	jha	Jha\jha	jha	jha	jha
29.	NYA	ञ	nj'a	Fa	~na	ña	ña	Ja	Ña\ña	nj'a	~na	nja
30.	TTA	ट	Ta	ta	Ta	ṭa	ṭa	Ta	Ṭa\ṭa	t'a	.ta	t^a
31.	TTHA	ठ	Tha	Ta	Tha	ṭha	ṭha	Tha	Ṭha\ṭha	t'ha	.tha	t^ha
32.	DDA	ड	Da	da	Da	ḍa	ḍa	Da	Ḍa\ḍa	d'a	.da	d^a
33.	DDHA	ढ	Dha	Da	Dha	ḍha	ḍha	Dha	Ḍha\ḍha	d'ha	.dha	d^ha

34.	NNA	ण	Na	Na	Na	ṇa	ṇa	Na	Ṇaṇa	n'a	.na	n^a
35.	TA	त	ta	wa	ta	ta	ta	ta	Ta\ta	ta	ta	ta
36.	THA	थ	tha	Wa	tha	tha	tha	tha	Tha\tha	tha	tha	tha
37.	DA	द	da	xa	da	da	da	da	Da\da	da	da	da
38.	DHA	ध	dha	Xa	dha	dha	dha	dha	Dha\dha	dha	dha	dha
39.	NA	न	na	na	na	na	na	na	Na\na	na	na	na
40.	NNNA	न	n'a	nYa	nh	ṇa	ṇa			n.a		nza
41.	PA	प	pa	pa	pa	pa	pa	pa	Pa\pa	pa	pa	pa
42.	PHA	फ	pha	Pa	pha	pha	pha	pha	Pha\pha	pha	pha	pha
43.	BA	ब	ba	ba	ba	ba	ba	ba	Ba\ba	ba	ba	ba
44.	BHA	भ	bha	Ba	bha	bha	bha	bha	Bha\bha	bha	bha	bha
45.	MA	म	ma	ma	ma	ma	ma	ma	Ma\ma	ma	ma	ma
46.	YA	य	ya	ya	ya	ya	ya	ya	Ya\ya	ya	ya	ya
47.	RA	र	ra	ra	ra	ra	ra	ra	Ra\ra	ra	ra	ra
48.	RRA	र	Ra	rYa	Ra	ṛa	ṛa			r.a		rza
49.	LA	ल	la	la	la	la	la	la	La\la	la	la	la
50.	LLA	ळ	La	lYa	La	ḷa	ḷa		ḷa	l'a		l^a
51.	LLLA	ळ	Za	lYYA		ḷa	ḷa			l'.a		l^za
52.	VA	व	va	va	va	va	va	va	Va\va	va	va	va
53.	SHA	श	sha	Sa	sha	śa	śa	za	Śa\śa	sha	"sa	sha
54.	SSA	ष	Sa	Ra	Sha	ṣa	ṣa	Sa	Ṣa\ṣa	s'a	.sa	s^a
55.	SA	स	sa	sa	sa	sa	sa	sa	Sa\sa	sa	sa	sa
56.	HA	ह	ha	ha	ha	ha	ha	ha	Ha\ha	ha	ha	ha
57.	QA	क	k'a	kZa	qa		qa			k.a		kza
58.	KHHA	ख	kh'a	KZa	Ka		<u>kha</u>			kh.a		khza

59.	GHHA	ग	g'a	gZa	Ga		ḡa			g.a		gza
60.	ZA	ज	j'a	jZa	Ja		za			j.a		jza
61.	DDDHA	ड़	D'a	dZa	.Da		ṛa			d'.a		d^za
62.	RHA	ढ़	Dh'a	DZa	.Dha		ṛha			d'h.a		d^hza
63.	FA	फ	ph'a	PZa	fa		fa			ph.a		phza
64.	YYA	य	Ya	YZa	Ya	ýa	ýa			y.a		yza
65.	VOCALIC RR	ऋ	X	Q	RRI		ṛ	RRa	Ṛaṛa	r'ii	.rra	r`r`
66.	VOCALIC LL	ऌ	Q		LLI		ḷ	IRRa	Ḷaḷa	lr'ii		lr`lr`
67.	DANDA		\.									
68.	DOUBLE DANDA		\..									
69.	ZERO	०	\0		0							0
70.	ONE	१	\1		1							1
71.	TWO	२	\2		2							2
72.	THREE	३	\3		3							3
73.	FOUR	४	\4		4							4
74.	FIVE	५	\5		5							5
75.	SIX	६	\6		6							6
76.	SEVEN	७	\7		7							7
77.	EIGHT	८	\8		8							8
78.	NIVE	९	\9		9							9
79.	GGA	ग	g"a							g_a		g_a
80.	JJA	ज	j"a							j_a		j_a
81.	DDDA	ड	D"a							d'_a		d^_a
82.	BBA	ब	b"a							b_a		b_a
83.	OM	ॐ	@M		OM/AUM					a'um'		o`m
84.	AVAGRAHA	ऽ	\s		.a		,			~		h~

85.	Eyesh RA	Marathi	r'a				ř			r_'		r_a
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Table 13 Comparison of Different transliteration schemes – Consonant conjuncts

Sl.	Unicode Name	Dev	CIIL	WX	ITRANS	NLKR	ISO-15919	HK	IAST h\s	INSROT	Velthuis	Proposed Scheme
86.		क्ष		kRa	xa					ks'a		ks^a
87.		ज्ञ		jFa	GYa					jna		jnja
88.		श्र		Sra								shra
89.		त्र		wra						tra		tra

ANNEX C TRANSLITERATION OF INDIAN SCRIPTS:

The unified transliteration scheme for the Indic scripts using Latin characters is given in Table 14. Transliteration of Consonant Conjuncts in Indic Scripts Using Latin Characters are given in Table 15.

Table 14 Transliteration of Indic Scripts Using Latin Characters

Sl.No.	Proposed	Devanagari	Gurmukhi	Tamil	Kannada	Malayalam	Telugu	Assamese/ Bangla	Gujarati	Odia
1.	.m	ं	ੰ	NA	NA	NA	ం	ং	ં	େ
2.	.n	ॠ	ॡ	ॡ	ಂ	ಂ	ం	ং	ં	ॠ
3.	h`	ः	NA	ஃ	ಃ	ഃ	ః	ঃ	ઃ	ଃ
4.	a	अ	ਅ	அ	ಆ	അ	అ	অ	અ	ଅ
5.	aa	आ	ਆ	ஆ	ಆ	അ	ఆ	আ	આ	ଆ
6.	i	इ	ਇ	இ	ಇ	ഇ	ఇ	ই	ઇ	ଇ
7.	ii	ई	ਈ	ஈ	ಈ	ഈ	ఈ	ঈ	ઈ	ଈ
8.	u	उ	ਉ	உ	ಉ	ഉ	ఉ	উ	ઉ	ଉ
9.	uu	ऊ	ਊ	ஊ	ಊ	ഊ	ఊ	ঊ	ઊ	ଊ
10.	r`	ऋ	NA	NA	ಋ	ഠ	ఠ	ঠ	ઠ	ଠ
11.	lr`	ॠ	NA	NA	ॠ	ഠ	ఠ	ঠ	ઠ	ଠ
12.	a`	ँ	NA	NA	NA	NA	NA	NA	અં	NA
13.	e`	ऐ	NA	எ	ಎ	എ	ఎ	NA	NA	NA
14.	e	ए	ਏ	ஏ	ಏ	ഈ	ఎ	এ	એ	ଏ
15.	ai	ऐ	ਐ	ஐ	ಐ	ഐ	ఐ	ঐ	એ	ঐ
16.	ao	ऑ	NA	NA	NA	NA	NA	NA	ઓ	NA
17.	o`	ओ	NA	ஔ	ಔ	ഠ	ఠ	NA	NA	NA
18.	o	औ	ਓ	ஔ	ಓ	ഠ	ఠ	ও	ઓ	ଠ

19.	au	औ	ॐ	ఱ	ఱ	ఱ	ఱ	ఱ	ఱ	ఱ
20.	ka	क	क	క	క	క	క	క	క	క
21.	kha	ख	ख	NA	ఖ	ఖ	ఖ	ఖ	ఖ	ఖ
22.	ga	ग	ग	NA	గ	గ	గ	గ	గ	గ
23.	gha	घ	घ	NA	ఘ	ఘ	ఘ	ఘ	ఘ	ఘ
24.	nga	ङ	ङ	NA	ఙ	ఙ	ఙ	ఙ	ఙ	ఙ
25.	ca	च	च	NA	ఛ	ఛ	ఛ	ఛ	ఛ	ఛ
26.	cha	छ	छ	NA	ఞ	ఞ	ఞ	ఞ	ఞ	ఞ
27.	ja	ज	ज	NA	జ	జ	జ	జ	జ	జ
28.	jha	झ	झ	NA	ఝ	ఝ	ఝ	ఝ	ఝ	ఝ
29.	nja	ञ	ञ	NA	ఞ	ఞ	ఞ	ఞ	ఞ	ఞ
30.	t^a	ट	ट	NA	ట	ట	ట	ట	ట	ట
31.	t^ha	ठ	ठ	NA	ఠ	ఠ	ఠ	ఠ	ఠ	ఠ
32.	d^a	ड	ड	NA	డ	డ	డ	డ	డ	డ
33.	d^ha	ढ	ढ	NA	ఢ	ఢ	ఢ	ఢ	ఢ	ఢ
34.	n^a	ण	ण	NA	ణ	ణ	ణ	ణ	ణ	ణ
35.	ta	त	त	NA	ట	ట	ట	ట	ట	ట
36.	tha	थ	थ	NA	థ	థ	థ	థ	థ	థ
37.	da	द	द	NA	డ	డ	డ	డ	డ	డ
38.	dha	ध	ध	NA	ఢ	ఢ	ఢ	ఢ	ఢ	ఢ
39.	na	न	न	NA	ణ	ణ	ణ	ణ	ణ	ణ
40.	nza	ञ	NA	ణ	NA	ణ	NA	NA	NA	NA
41.	pa	प	प	NA	ప	ప	ప	ప	ప	ప

42.	pha	फ	ढ	NA	झ	ढ	ष	फ	ड	घ
43.	ba	ब	ष	NA	ब	ण	ब	व	य	व
44.	bha	भ	भ	NA	भ	ड	भ	ड	भ	ड
45.	ma	म	म	म	म	म	म	म	म	म
46.	ya	य	य	य	य	य	य	य	य	य
47.	ra	र	र	र	र	र	र	र	र	र
48.	rza	र	NA	र	र	र	र	NA	NA	NA
49.	la	ल	ल	ल	ल	ल	ल	ल	ल	ल
50.	l^a	ळ	ळ	ण	ळ	ळ	ळ	NA	ल	ल
51.	lza	ळ	NA	ळ	NA	ळ	NA	NA	NA	NA
52.	va	व	व	व	व	व	व	NA	व	व
53.	sha	श	श	श	श	श	श	श	श	श
54.	s^a	ष	NA	ष	ष	ष	ष	ष	ष	ष
55.	sa	स	स	स	स	स	स	स	स	स
56.	ha	ह	ह	ह	ह	ह	ह	ह	ह	ह
57.	kza	क	क	NA	NA	NA	NA	NA	NA	NA
58.	khza	ख	ख	NA	NA	NA	NA	NA	NA	NA
59.	gza	ग	ग	NA	NA	NA	NA	NA	NA	NA
60.	jza	ज	ज	NA	NA	NA	NA	NA	NA	NA
61.	d^za	ड	ड	NA	NA	NA	NA	ड	NA	ड
62.	d^hza	ढ	NA	NA	NA	NA	NA	ढ	NA	ढ
63.	phza	फ	ढ	NA	NA	NA	NA	NA	NA	NA
64.	yza	य	NA	NA	NA	NA	NA	य	NA	य

65.	r`r`	ठ	NA	NA	ఋ	ঠ	ఋ	ꣳ	ꣴ	ꣵ
66.	lr`lr`	ꣳꣴ	NA	NA	ꣵ	ꣶ	ꣷ	꣸	꣹	꣺
67.				NA	NA	NA	NA		NA	
68.				NA	NA	NA	NA		NA	
69.	0	◦	○	ୱ	○	◌	○	○	◌	○
70.	1	୧	୨	୩	୪	୫	୬	୭	୮	୯
71.	2	୨	୩	୪	୫	୬	୭	୮	୯	୧୦
72.	3	୩	୪	୫	୬	୭	୮	୯	୧୦	୧୧
73.	4	୪	୫	୬	୭	୮	୯	୧୦	୧୧	୧୨
74.	5	୫	୬	୭	୮	୯	୧୦	୧୧	୧୨	୧୩
75.	6	୬	୭	୮	୯	୧୦	୧୧	୧୨	୧୩	୧୪
76.	7	୭	୮	୯	୧୦	୧୧	୧୨	୧୩	୧୪	୧୫
77.	8	୮	୯	୧୦	୧୧	୧୨	୧୩	୧୪	୧୫	୧୬
78.	9	୯	୧୦	୧୧	୧୨	୧୩	୧୪	୧୫	୧୬	୧୭
79.	g_a	ꣳꣴ	NA	NA	NA	NA	NA	NA	NA	NA
80.	j_a	ꣳꣴꣵ	NA	NA	NA	NA	NA	NA	NA	NA
81.	d^_a	ꣳꣴꣵꣶ	NA	NA	NA	NA	NA	NA	NA	NA
82.	b_a	ꣳꣴꣵꣶꣷ	NA	NA	NA	NA	NA	NA	NA	NA
83.	o`m	ꣳꣴꣵꣶꣷ꣸	NA	ꣳꣴꣵꣶꣷ꣸	NA	NA	NA	NA	NA	NA
84.	.h	ꣳꣴꣵꣶꣷ꣸꣹	NA	NA	ꣳꣴꣵꣶꣷ꣸꣹	ꣳꣴꣵꣶꣷ꣸꣹	ꣳꣴꣵꣶꣷ꣸꣹	ꣳꣴꣵꣶꣷ꣸꣹	ꣳꣴꣵꣶꣷ꣸꣹	ꣳꣴꣵꣶꣷ꣸꣹
85.	r_a	Eyeshlash RA	NA	NA		ꣳꣴꣵꣶꣷ꣸꣹	NA			

Table 15 Transliteration of Consonant Conjuncts in Indic Scripts Using Latin Characters

Some Consonant Conjuncts and their Transliteration

Sl. N.	Transliteration	Devanagari	Gurmukhi	Tamil	Kannada	Malayalam	Telugu	Assamese/ Bangla	Gujarati	Odia
1.	ksha	क्ष	NA	க்ச		ക്ഷ	క	ক্ষ	ક્ષ	କ୍ଷ
2.	jnja	ज्ञ	NA	NA		ജ്ഞ	జ్ఞ	জ্ঞ	જ્ઞ	NA
3.	shra	श्र	NA	NA		ശ്ര	శ్ర	শ্র	શ્ર	NA
4.	tra	त्र	NA	NA		ത്ര	త్ర	ত্র	ત્ર	NA