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# *Draft Indian Standard*

# *Indian Language Technologies − Transliteration of Indic Scripts into Latin Characters*

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भारतीय मानक ब्यूरो
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 and approved by the Electronics and Information Technology Division Council.

This Indian Standard on "Indian Language Technologies Transliteration of Indic Scripts into Latin Characters" establishes guidelines for transliterating Indic scripts into Latin characters, which are used in digital content creation, transcription, and data exchange. The Indian standard applies to the following Indic scripts: Bengali, Devanagari, Gujarati, Gurmukhi, Kannada, Malayalam, Meetei Mayek, Oriya, Tamil, and Telugu.

The standard defines a unified transliteration system known as IS/ISO 15919, which ensures standardization of transliteration across all scripts. It also provides guidelines for the use of diacritic marks, punctuation, and case within transliterated text. Additionally, it defines the representation of loanwords, numerals, and symbols in transliterated text.

The objective of this standard is to facilitate accurate and consistent transliteration of Indic scripts into Latin characters, which is crucial for enabling efficient digital communication in a multilingual country like India.

**Table of Contents**

# 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), and 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 Pāḷi. It is often used in printed publications, especially for books dealing with ancient Sanskrit and Pāḷi 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 ए

and ओ (e and o are used for the short vowels present in many Indian languages), the use of 'ḻ' for the consonant (in Kannada) ೞ, and the absence of symbols for ॠ ऌ 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 ख़ 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 execpt 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 execpt 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 ○ੁ , Tamil ○ , Telugu ౖ, Kan. ◌ఀ , Malayalam ○ , Sinhala ○ఀ. A 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^ha, d^ha, tha, dha, pha, bha etc. |
| Retroflex | ^ | characters - t^a, t^ha, d^a, d^ha, n^a, l^a, l^za etc. |
| Nukta character | z | characters – kza, khza, gza, jza, d^za, d^hza, yza, l^za etc. |
| Sindhi Implosives | _ | characters – g_a, j_a, d^_a, b_a |
| Disambiguation | : | – भ bha vs ब्ह b:ha, ੳ u vs ੳ u:, ਇ i vs ੲ i:[1] |
| Vocalic and some special characters | ` | characters – h`, r`, lr`, a`, e`, o`, r`r`, lr`lr` |
| Avagraha | . | character – h~ |
| Malayalam Chillu characters | ~ | characher – n~, r~ etc. |

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

| Nasalization | ~ | chandrabindu or anuswar (m~) and bindi or anunasik (n~) |
|---|---|---|

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

| No. | | | | | No. | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 33. | দ | da | 09A6 | DA | 49. | ঢ় | d^hza | 09DD | RHA |
| 34. | ধ | dha | 09A7 | DHA | 50. | য় | yza | 09DF | YYA |
| 35. | ন | na | 09A8 | NA | 51. | ৠ | r`r` | 09E0 | VOCALIC RR |
| 36. | প | pa | 09AA | PA | 52. | ৡ | lr`lr` | 09E1 | VOCALIC LL |
| 37. | ফ | pha | 09AB | PHA | 53. | ০ | 0 | 09E6 | ZERO |
| 38. | ব | ba | 09AC | BA | 54. | ১ | 1 | 09E7 | ONE |
| 39. | ভ | bha | 09AD | BHA | 55. | ২ | 2 | 09E8 | TWO |
| 40. | ম | ma | 09AE | MA | 56. | ৩ | 3 | 09E9 | THREE |
| 41. | য | ya | 09AF | YA | 57. | ৪ | 4 | 09EA | FOUR |
| 42. | র | ra | 09B0 | RA | 58. | ৫ | 5 | 09EB | FIVE |
| 43. | ল | la | 09B2 | LA | 59. | ৬ | 6 | 09EC | SIX |
| 44. | শ | sha | 09B6 | SHA | 60. | ৭ | 7 | 09ED | SEVEN |
| 45. | ষ | s^a | 09B7 | SSA | 61. | ৮ | 8 | 09EE | EIGHT |
| 46. | স | sa | 09B8 | SA | 62. | ৯ | 9 | 09EF | NINE |
| 47. | হ | ha | 09B9 | HA | 63. | ঽ | h~ | 09BD | AVAGRAHA |
| 48. | ড় | d^za | 09DC | DDDHA | | | | | |

**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 | 5. | आ | aa | 0906 | AA |
| 2. | ं | n~ | 0902 | ANUSVARA | 6. | इ | I | 0907 | I |
| 3. | ः | h` | 0903 | VISARGA | 7. | ई | ii | 0908 | II |
| 4. | अ | A | 0905 | A | 8. | उ | u | 0909 | U |
| | | | | | 9. | ऊ | uu | 090A | UU |
| | | | | | 10. | ऋ | r` | 090B | VOCALIC R |

| 11. | ऌ | lr` | 090C | VOCALIC L | 36. | थ | tha | 0925 | THA |
|---|---|---|---|---|---|---|---|---|---|
| 12. | ऍ | a` | 090D | CANDRA E | 37. | द | da | 0926 | DA |
| 13. | ऎ | e` | 090E | SHORT E | 38. | ध | dha | 0927 | DHA |
| 14. | ए | E | 090F | E | 39. | न | na | 0928 | NA |
| 15. | ऐ | ai | 0910 | AI | 40. | ऩ | nza | 0929 | NNNA |
| 16. | ऑ | ao | 0911 | CANDRA O | 41. | प | pa | 092A | PA |
| 17. | ऒ | o` | 0912 | SHORT O | 42. | फ | pha | 092B | PHA |
| 18. | ओ | o | 0913 | O | 43. | ब | ba | 092C | BA |
| 19. | औ | au | 0914 | AU | 44. | भ | bha | 092D | BHA |
| 20. | क | ka | 0915 | KA | 45. | म | ma | 092E | MA |
| 21. | ख | kha | 0916 | KHA | 46. | य | ya | 092F | YA |
| 22. | ग | ga | 0917 | GA | 47. | र | ra | 0930 | RA |
| 23. | घ | gha | 0918 | GHA | 48. | ऱ | rza | 0931 | RRA |
| 24. | ङ | nga | 0919 | NGA | 49. | ल | la | 0932 | LA |
| 25. | च | ca | 091A | CA | 50. | ळ | l^a | 0933 | LLA |
| 26. | छ | cha | 091B | CHA | 51. | ऴ | l^za | 0934 | LLLA |
| 27. | ज | ja | 091C | JA | 52. | व | va | 0935 | VA |
| 28. | झ | jha | 091D | JHA | 53. | श | sha | 0936 | SHA |
| 29. | ञ | nja | 091E | NYA | 54. | ष | s^a | 0937 | SSA |
| 30. | ट | t^a | 091F | TTA | 55. | स | sa | 0938 | SA |
| 31. | ठ | t^ha | 0920 | TTHA | 56. | ह | ha | 0939 | HA |
| 32. | ड | d^a | 0921 | DDA | 57. | क़ | kza | 0958 | QA |
| 33. | ढ | d^ha | 0922 | DDHA | 58. | ख़ | khza | 0959 | KHHA |
| 34. | ण | n^a | 0923 | NNA | 59. | ग़ | gza | 095A | GHHA |
| 35. | त | ta | 0924 | TA | 60. | ज़ | jza | 095B | ZA |

| 61. | ड़ | d^za | 095C | DDDHA | | 74. | ५ | 5 | 096B | FIVE |
|---|---|---|---|---|---|---|---|---|---|---|
| 62. | ढ़ | d^hza | 095D | RHA | | 75. | ६ | 6 | 096C | SIX |
| 63. | फ़ | phza | 095E | FA | | 76. | ७ | 7 | 096D | SEVEN |
| 64. | य़ | yza | 095F | YYA | | 77. | ८ | 8 | 096E | EIGHT |
| 65. | ॠ | r`r` | 0960 | VOCALIC RR | | 78. | ९ | 9 | 096F | NINE |
| 66. | ॡ | lr`lr` | 0961 | VOCALIC LL | | 79. | ग़ | g_a | 097B | GGA |
| 67. | । | \| | 0964 | DANDA | | 80. | ज़ | j_a | 097C | JJA |
| 68. | ॥ | \|\| | 0965 | DB DANDA | | 81. | ड़ | d^_a | 097E | DDDA |
| 69. | ० | 0 | 0966 | ZERO | | 82. | ब़ | b_a | 097F | BBA |
| 70. | १ | 1 | 0967 | ONE | | 83. | ॐ | o`m | 0950 | OM |
| 71. | २ | 2 | 0968 | TWO | | 84. | ऽ | .h | 093D | AVGRHA |
| 72. | ३ | 3 | 0969 | THREE | | 85. | ꣡ | r_a | | Eyelash RA |
| 73. | ४ | 4 | 096A | FOUR | | | | | | |

### 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~), कँ (kam~) कां (kaan~), काँ (kaam~) किं (kin~), कीं (kiin~), कुं (kun~), कुँ (kum~) कूं (kuun~), कूँ (kuum~) कें (ken~), कैं (kain~), कों (kon~), कौं (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), ख़जाना (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 रिज़िसटेंस 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 मरीज़ों 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 chot^ii-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 rijzisat^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^ekshana 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^iiriyaa 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 naii 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^iiriyaa tejzii se pratirodhaka kshamataa vikasita kara rahe hain~. baada men~ davaon~ kaa ina baikt^iiriya para koii asara nahiin~ hogaa. "in~glain~d^a kii mukhya cikitsaa adhikaarii ne en~t^iibaayot^ika ke istemaala ko lekara hidaayaten~ 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^iiriyaa 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 davaii dii ho, utane dina davaa lenii caahie bhale hii aapa behatara mahasuusa kara rahe hon~ biica men~ davaaii chod^zane se baikt^iiriya 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. | ઌ | lr` | 0A8C | VOCALIC L |
| 12. | ઍ | a` | 0A8D | CANDRA E |
| 13. | એ | e | 0A8F | E |
| 14. | ઐ | ai | 0A90 | AI |
| 15. | ઑ | ao | 0A91 | CANDRA O |
| 16. | ઓ | o | 0A93 | O |
| 17. | ઔ | 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. | ૨ | ra | 0AB0 | RA | | 55. | ૧ | 1 | 0AE7 | ONE |
| 45. | લ | la | 0AB2 | LA | | 56. | ૨ | 2 | 0AE8 | TWO |
| 46. | ળ | l^a | 0AB3 | LLA | | 57. | ૩ | 3 | 0AE9 | THREE |
| 47. | વ | va | 0AB5 | VA | | 58. | ૪ | 4 | 0AEA | FOUR |
| 48. | શ | sha | 0AB6 | SHA | | 59. | ૫ | 5 | 0AEB | FIVE |
| 49. | ષ | s^a | 0AB7 | SSA | | 60. | ૬ | 6 | 0AEC | SIX |
| 50. | સ | sa | 0AB8 | SA | | 61. | ૭ | 7 | 0AED | SEVEN |
| 51. | હ | ha | 0AB9 | HA | | 62. | ૮ | 8 | 0AEE | EIGHT |
| 52. | ઋ | r`r` | 0AE0 | VOCALIC RR | | 63. | ૯ | 9 | 0AEF | NINE |
| 53. | ઌ | lr`lr` | 0AE1 | VOCALIC LL | | 64. | ઽ | h~ | 0ABD | AVAGRAHA |
| 54. | ૦ | 0 | 0AE6 | ZERO | | | | | | |

### 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), મૅલ (ma`la), ગોળ (gol^a), ગૉળ (gaol^a), ગોરજ (goraja), ફળ (phal^a), ગુણવાન (gun^avaana), ષટ્કોણ (s^at^akon^a), આહ્લાદ (aahlaada), આળ (aal^a), આંજવું (aam~javum~), ગ્રીષ્મ (griis^ma), ઉષ્ણ (us^n^a), બ્રહ્મા (brahmaa), ભીંડો (bhiim~d^o), કાંટો (kam~t^o), કંકણ (kam~kan^a), જ્યોત્સ્ના (jyotsnaa), મુદ્દો (muddo), યુદ્ધ (yuddha), અર્થાત્ (arthat), બહેન (bahena), દુઃખ (duHkha), દુખી (dukhii), થૂંકવું (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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4. | ਆ | aa | 0A06 | AA |
| | | | | | | 5. | ਇ | I | 0A07 | I |
| | | | | | | 6. | ਈ | ii | 0A08 | II |
| 1. | ੰ | m~ | 0A70 | TIPPI | | 7. | ਉ | u | 0A09 | U |
| 2. | ੱ | n~ | 0A02 | BINDI | | 8. | ਊ | uu | 0A0A | UU |
| 3. | ਅ | A | 0A05 | A | | 9. | ਏ | E | 0A0F | E |

| 10. | ਐ | ai | 0A10 | AI | | 35. | ਬ | ba | 0A2C | BA |
|---|---|---|---|---|---|---|---|---|---|---|
| 11. | ਓ | o | 0A13 | O | | 36. | ਭ | bha | 0A2D | BHA |
| 12. | ਔ | au | 0A14 | AU | | 37. | ਮ | ma | 0A2E | MA |
| 13. | ਕ | ka | 0A15 | KA | | 38. | ਯ | ya | 0A2F | YA |
| 14. | ਖ | kha | 0A16 | KHA | | 39. | ਰ | ra | 0A30 | RA |
| 15. | ਗ | ga | 0A17 | GA | | 40. | ਲ | la | 0A32 | LA |
| 16. | ਘ | gha | 0A18 | GHA | | 41. | ਲ਼ | l^a | 0A33 | LLA |
| 17. | ਙ | nga | 0A19 | NGA | | 42. | ਵ | va | 0A35 | VA |
| 18. | ਚ | ca | 0A1A | CA | | 43. | ਸ਼ | sha | 0A36 | SHA |
| 19. | ਛ | cha | 0A1B | CHA | | 44. | ਸ | sa | 0A38 | SA |
| 20. | ਜ | ja | 0A1C | JA | | 45. | ਹ | ha | 0A39 | HA |
| 21. | ਝ | jha | 0A1D | JHA | | 46. | ਖ਼ | khza | 0A59 | KHHA |
| 22. | ਞ | nja | 0A1E | NYA | | 47. | ਗ਼ | gza | 0A5A | GHHA |
| 23. | ਟ | t^a | 0A1F | TTA | | 48. | ਜ਼ | jza | 0A5B | ZA |
| 24. | ਠ | t^ha | 0A20 | TTHA | | 49. | ੜ੍ਹ | d^za | 0A5C | DDDHA |
| 25. | ਡ | d^a | 0A21 | DDA | | 50. | ਫ਼ | phza | 0A5E | FA |
| 26. | ਢ | d^ha | 0A22 | DDHA | | 51. | । | \| | 0A64 | DANDA |
| 27. | ਣ | n^a | 0A23 | NNA | | 52. | ॥ | \|\| | 0A65 | DB DANDA |
| 28. | ਤ | ta | 0A24 | TA | | 53. | ੦ | 0 | 0A66 | ZERO |
| 29. | ਥ | tha | 0A25 | THA | | 54. | ੧ | 1 | 0A67 | ONE |
| 30. | ਦ | da | 0A26 | DA | | 55. | ੨ | 2 | 0A68 | TWO |
| 31. | ਧ | dha | 0A27 | DHA | | 56. | ੩ | 3 | 0A69 | THREE |
| 32. | ਨ | na | 0A28 | NA | | 57. | ੪ | 4 | 0A6A | FOUR |
| 33. | ਪ | pa | 0A2A | PA | | 58. | ੫ | 5 | 0A6B | FIVE |
| 34. | ਫ | pha | 0A2B | PHA | | 59. | ੬ | 6 | 0A6C | SIX |

| 60. | ੭ | 7 | 0A6D | SEVEN | | 62. | ੯ | 9 | 0A6F | NINE |
|-----|---|---|------|-------|---|-----|---|---|------|------|
| 61. | ੮ | 8 | 0A6E | EIGHT | | | | | | |

### 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~), ਉਂ (kun~) ਕੂੰ (kuum~), ਉਂ (kuun~) ਕੇਂ (ken~), ਕੈਂ (kain~), ਕੋਂ (kon~), ਕੌਂ (kaun~)

ਸ੍ਵਰ (svara), ਸ੍ਵੈ-ਜੀਵਨੀ (svai-jiivanii), ਜੇਭ੍ਹ (jebha), ਕੱਲ੍ਹ (kallha), ਤਰ੍ਹਾਂ (tarhaam~), ਉਨ੍ਹਾਂ (unhaan~), ਪ੍ਰਾਪਤ (praapata), ਪ੍ਰਬੰਧ (prabam~dha), ਪੜ੍ਹ (pad^zha), ਚੰਡੀਗੜ੍ਹ (cam~d^iigad^zha), ਰਾਮਲੀਲ੍ਹਾ (raamaliilhaa), ਸੜਕ (sad^zaka), ਭ੍ਰਸ਼ਿਟਾਚਾਰ (bhrishat^aacaara), ਕਾਵਿ-ਸੰਗ੍ਰਹਿ (kaavi-sam~grahi), ਬੱਦਲ (baddala), ਪਰੰਪਰਾ (param~paraa), ਵੱਲੋਂ (vallon~), ਅਸੀਂ (asiin~), ਗੌਰਮਿੰਟ (gauramim~t^a), ਸੁੰਦਰਤਾ (sum~darataa) ਗਰਾਉਂਡ (garaauun~d^a), ਸਮੇਂ (samen~), ਜ਼ਮੀਂਦਾਰ (jzimiin~daara), ਜ਼ਿੰਮੇਵਾਰੀ (jzim~mevaarii), ਰੰਗ (ram~ga), ਅੰਮ੍ਰਿਤ (aam~mrita), ਨੌਂ (naun~), ਕੇਂਦਰ (ken~dara) ਕੌਂਸਲ (kaun~sala), ਪਿੰਡ (pim~d^a), ਉਂਜ (unn~ja), ਜੁਗਨੂੰ (juganuum~), ਆਲ੍ਹਣਾ (aalhan^aa), ਸਤਰੰਗੀ (sataram~gii), ਪੀਂਘ (piin~gha), ਪੰਘੂੜਾ (pam~ghuud^zaa), ਹਵੇਲੀ (havelii), ਸੱਥ (sattha), ਪੰਚਾਇਤ (pam~caaita), ਵਹਿੜਾ (vihad^zaa), ਪਸ਼ੂ (pashuu), ਡੰਗਰ (dam~gara), ਖੇਤੀਬਾੜੀ (khetiibaad^zii), ਭੂਗੋਲ (bhuugola), ਘੁੰਮਦਾ (ghum~madaa), ਕੱਪੜਾ (kappad^zaa), ਲੱਭ (labbha), ਬੱਚਾ (baccaa), ਜੰਗਲ (jam~gala), ਉੱਤੇ (utte), ਜਦੋਂ (jadon~), ਸੌਂਦਾ (saun~daa), ਕਰਾਂਗਾ (karaan~gaa), ਮੈਨੂੰ (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), ਦਰਖ਼ਤ (darakhzata), ਧਰੰਮ (dhad^zam~ma), ਡਿੱਗ (d^igga), ਧੁੱਪ (dhuppa), ਰੋਸ਼ਨੀ (raushanii), ਜਿਵੇਂ (jiven~), ਕਿਉਂ (kiun~), ਖੋਲ੍ਹਿਆ (kholhiaa)

### 8.5.2 Sample Punjabi Text in Gurmukhi and Roman script:-

ਚੰਡੀਗੜ੍ਹ ਭਾਰਤ ਦੀ ਇਕ ਯੂਨੀਅਨ ਟੈਰਟਰੀ ਹੈ। ਇਹ ਭਾਰਤ ਦੇ ਦੋ ਸੂਬਿਆਂ ਪੰਜਾਬ ਅਤੇ ਹਰਿਆਣਾ ਦੀ ਰਾਜਧਾਨੀ ਹੈ। ਇਸ ਨੂੰ ਭਾਰਤ ਦਾ ਖੂਬਸੂਰਤ ਸ਼ਹਿਰਿ ਮੰਨਿਆ ਜਾਂਦਾ ਹੈ। ਸ਼ਹਿਰਿ ਦੇ ਲਾਗੇ ਦੇ ਜ਼ਿਲ੍ਹਿਆਂ ਵਿੱਚ ਹਰਿਆਣਾ ਦੇ ਅੰਬਾਲਾ ਅਤੇ ਪੰਚਕੂਲਾ ਅਤੇ ਪੰਜਾਬ ਦੇ ਮੋਹਾਲੀ , ਪਟਿਆਲਾ ਅਤੇ ਰੋਪੜ ਜ਼ਿਲ੍ਹੇ ਹਨ। ਇਸਦੇ ਉੱਤਰੀ ਹਿੱਸੇ ਤੋਂ ਹਿਮਾਚਲ ਪ੍ਰਦੇਸ਼ ਦੀ ਹੱਦ ਜ਼ਿਆਦਾ ਦੂਰ ਨਹੀ ਹੈ। ਸ਼ਹਿਰਿ ਦੀ ਆਬ-ਏ-ਹਵਾ ਸਬਿਲ੍ਹੀ ਸਬ-ਟ੍ਰਾਪਕਿਲ ਕਸਿਮ ਦੀ ਹੈ; ਜਸਿ ਵਿੱਚ ਗਰਮੀਆਂ ਵਿੱਚ ਬਹੁਤ ਗਰਮੀ, ਸਿਆਲ ਵਿਚ ਨਮੀ, ਬੇਅਤਬਾਰੀ ਬਰਸਾਤ ਅਤੇ ਟੈਂਪਰੇਚਰ ਵਿੱਚ ਵੱਡੇ ਫਰਕ (-1° ਤੋ 41.2°) ਦਾ ਅੰਦਾਜ਼ਾ ਰਹਿਦਾ ਹੈ। ਸਿਆਲ ਵਿੱਚ ਦਸਿੰਬਰ ਅਤੇ ਜਨਵਰੀ ਦੇ ਮਹੀਨੇ  ਵਿੱਚ ਕਦੇ-ਕਦੇ ਕੋਹਰਾ ਹੋ ਸਕਦਾ ਹੈ। ਔਸਤ ਸਾਲਾਨਾ ਬਰਸਾਤ 111.07 c.m. ਹੁੰਦੀ ਹੈ। ਸ਼ਹਿਰਿ ਵਿੱਚ ਕਈ ਵਾਰ ਲਹਿਦਿ ਤੋਂ ਪਰਤਦੇ ਮਾਨਸੂਨ ਸਿਆਲੂ ਬਰਸਾਤ ਵੀ ਕਰ ਦਦਿ 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 ਦੇ 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 ਜਾਤੀ 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 ਫ੍ਰਾਂਸੀਸੀ 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 ਪ੍ਰੋਜੈਕਟ ਮਿਲਿਆ।

cam~d^iigad^zha bhaarata dii ika yuuniiana 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.○7 c.m. hun~di hai. shahira vicca kaii

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 viccakaara do hiddiaan~ vicca vam~d^a dittaa giaa sii. isa vam~d^ karake raaja dii puraan^ii raajadhaanii lahaura paakisataana de hisse vicca calii gaii sii. hun^a bhaaratii pam~jaaba nuum~ ikka naviin~ raajadhaanii di lod^za paii. pahilaan~ maujuuda shahiraan~ nuum~ raajadhaanii vicca badalan^a vicca aaun^a vaaliiaan~ bahuta saariiaan~ aukad^zaan~ de sitt^e vajjon~ ikka naviin~ palainad^a raajadhaanii kaaima karana daa phaisalaa kiitaa giaa. usa vele bhaarata vicca challa rahiiaan~ bahuta saariiaan~ naviiaan~ 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 vekhade hoe unhaan~ ne shahira nuum~ biitiiaan~ hoiiaan~ rivaaiataan~ 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 kaarabuujzie ne 1950 de dahaake vicca kiitaa. kaarabuujzie 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 aarakiit^aikat^a maithiuu naabiitasakii naala kam~ma karade sana. 1950 vicca naaviitasakii dii kuvele mauta kaarana kaarbuujzie 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. | ಃ | h` | 0C83 | VISARGA |
| 3. | ಅ | a | 0C85 | A |
| 4. | ಆ | aa | 0C86 | AA |
| 5. | ಇ | i | 0C87 | I |
| 6. | ಈ | ii | 0C88 | II |

| 7. | ಉ | u | 0C89 | U | | 32. | ತ | ta | 0CA4 | TA |
|---|---|---|---|---|---|---|---|---|---|---|
| 8. | ಊ | uu | 0C8A | UU | | 33. | ಥ | tha | 0CA5 | THA |
| 9. | ಋ | r` | 0C8B | VOCALIC R | | 34. | ದ | da | 0CA6 | DA |
| 10. | ಌ | lr` | 0C8C | VOCALIC L | | 35. | ಧ | dha | 0CA7 | DHA |
| 11. | ಎ | e` | 0C8E | E | | 36. | ನ | na | 0CA8 | NA |
| 12. | ಏ | e | 0C8F | EE | | 37. | ಪ | pa | 0CAA | PA |
| 13. | ಐ | ai | 0C90 | AI | | 38. | ಫ | pha | 0CAB | PHA |
| 14. | ಒ | o` | 0C92 | O | | 39. | ಬ | ba | 0CAC | BA |
| 15. | ಓ | o | 0C93 | OO | | 40. | ಭ | bha | 0CAD | BHA |
| 16. | ಔ | au | 0C94 | AU | | 41. | ಮ | ma | 0CAE | MA |
| 17. | ಕ | ka | 0C95 | KA | | 42. | ಯ | ya | 0CAF | YA |
| 18. | ಖ | kha | 0C96 | KHA | | 43. | ರ | ra | 0CB0 | RA |
| 19. | ಗ | ga | 0C97 | GA | | 44. | ಱ | rza | 0CB1 | RRA |
| 20. | ಘ | gha | 0C98 | GHA | | 45. | ಲ | la | 0CB2 | LA |
| 21. | ಙ | nga | 0C99 | NGA | | 46. | ಳ | l^a | 0CB3 | LLA |
| 22. | ಚ | ca | 0C9A | CA | | 47. | ವ | va | 0CB5 | VA |
| 23. | ಛ | cha | 0C9B | CHA | | 48. | ಶ | sha | 0CB6 | SHA |
| 24. | ಜ | ja | 0C9C | JA | | 49. | ಷ | s^a | 0CB7 | SSA |
| 25. | ಝ | jha | 0C9D | JHA | | 50. | ಸ | sa | 0CB8 | SA |
| 26. | ಞ | nja | 0C9E | NYA | | 51. | ಹ | ha | 0CB9 | HA |
| 27. | ಟ | t^a | 0C9F | TTA | | 52. | ೠ | r`r` | 0CE0 | VOCALIC RR |
| 28. | ಠ | t^ha | 0CA0 | TTHA | | 53. | ೡ | lr`lr` | 0CE1 | VOCALIC LL |
| 29. | ಡ | d^a | 0CA1 | DDA | | 54. | ೦ | 0 | 0CE6 | ZERO |
| 30. | ಢ | d^ha | 0CA2 | DDHA | | 55. | ೧ | 1 | 0CE7 | ONE |
| 31. | ಣ | n^a | 0CA3 | NNA | | 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. | ೮ | 8 | 0CEE | EIGHT |
| 63. | ೯ | 9 | 0CEF | NINE |
| 64. | ಽ | h~ | 0CBD | AVAGRAHA |

## 8.7 Transliteration scheme for Malayalam Script

**Table 7    Transliteration scheme for Malayalam Script**

| Sl.N. | Malayalam | Transliteration | Unicode | Unicode Names |
|---|---|---|---|---|
| 1. | ം | n~ | 0D02 | ANUSVARA |
| 2. | ഃ | 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. | ഌ | 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 |

| Sl.N. | Malayalam | Transliteration | Unicode | Unicode Names |
|---|---|---|---|---|
| 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. | ഛ | cha | 0D1B | CHA |
| 24. | ജ | ja | 0D1C | JA |
| 25. | ഝ | 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. | ഥ | tha | 0D25 | THA |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 34. | ദ | da | 0D26 | DA | | 54. | ൠ | r`r` | 0D60 | VOCALIC RR |
| 35. | ധ | dha | 0D27 | DHA | | 55. | ൡ | lr`lr` | 0D61 | VOCALIC LL |
| 36. | ന | na | 0D28 | NA | | 56. | �ᴗ | 0 | 0D73 | ZERO |
| 37. | ഩ | nza | 0D29 | NNNA | | 57. | ൧ | 1 | 0D67 | ONE |
| 38. | പ | pa | 0D2A | PA | | 58. | ൨ | 2 | 0D68 | TWO |
| 39. | ഫ | pha | 0D2B | PHA | | 59. | ൩ | 3 | 0D69 | THREE |
| 40. | ബ | ba | 0D2C | BA | | 60. | ൪ | 4 | 0D6A | FOUR |
| 41. | ഭ | bha | 0D2D | BHA | | 61. | ൫ | 5 | 0D6B | FIVE |
| 42. | മ | ma | 0D2E | MA | | 62. | ൬ | 6 | 0D6C | SIX |
| 43. | യ | ya | 0D2F | YA | | 63. | ൭ | 7 | 0D6D | SEVEN |
| 44. | ര | ra | 0D30 | RA | | 64. | ൮ | 8 | 0D6E | EIGHT |
| 45. | റ | rza | 0D31 | RRA | | 65. | ൯ | 9 | 0D6F | NINE |
| 46. | ല | la | 0D32 | LA | | 66. | ഽ | h~ | 0D3D | AVAGRAHA |
| 47. | ള | l^a | 0D33 | LLA | | 67. | ൺ | n^~ | 0D7A | CHILLU NN |
| 48. | ഴ | l^za | 0D34 | LLLA | | 68. | ൻ | n~ | 0D7B | CHILLU N |
| 49. | വ | va | 0D35 | VA | | 69. | ർ | rz~ | 0D7C | CHILLU RR |
| 50. | ശ | sha | 0D36 | SHA | | 70. | ൽ | l~ | 0D7D | CHILLU L |
| 51. | ഷ | s^a | 0D37 | SSA | | 71. | ൾ | l^~ | 0D7E | CHILLU LL |
| 52. | സ | sa | 0D38 | SA | | 72. | ൿ | k~ | 0D7F | CHILLU K |
| 53. | ഹ | ha | 0D39 | HA | | | | | | |

### 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~ vijayakaraamaayi puurz!ttiyaakki. |

| ചന്ദ്രനെ ചുറ്റി സുരക്ഷിതമായി തിരിച്ചെത്തിയ ഒറൈയോൺ സമീപ ഭാവിയിൽ തന്നെ മനുഷ്യരുമായി യാത്ര പുറപ്പെടും | . candrane` curzrzi surakshitamaayi tiricce`ttiya o`rzaiyon^z! samiipa bhaaviyilz! tanne` manus^yarumaayi yaatra purzappe`t^un~. |
|---|---|
| ഈ സീസൺ ആർട്ടിക് സ്ഫോടനത്തോടെയാണ് ആരംഭിച്ചത്. | ii siisan^z! aarz!t^t^ik sphotanattot^e`yaan^ aaran~bhiccat. |
| ധ്രുവപ്രദേശങ്ങളിൽ നിന്ന് തണുത്ത കാറ്റ് വീശുന്നതിനെയാണ് ആർട്ടിക് വോർട്ടക്സ് അല്ലെങ്കിൽ പോളാർ വോർട്ടക്സ് എന്ന് വിളിക്കുന്നത്. | dhrzuvaprzadeshangngal^ilz! ninn tan^utta kaarzrz viishunnatine`yaan^ aarz!t^t^ik vorz!t^t^aks alle`ngkilz! pol^aarz! vorz!t^t^aks e`nn vil^ikkunnat. |
| ഫ്ലൂറോണയെന്ന വാക്കിലാണ് 2022 ന്റെ ശാസ്ത്രലോകം ഉണർന്നത്. | phl^urzon^aye`nna vaakkilaan^ ഀ൦ഀ൦ nz!rze` shaastralokan~ un^arz!nnat. |
| കൊറോണയും ഇൻഫ്ലുവൻസയും ചേർന്ന് വരുന്ന രോഗാവസ്ഥ ഇസ്രായേലിൽ റിപ്പോർട്ട് ചെയ്യപ്പെട്ടതായിരുന്നു വാർത്ത. | ko`rzon^ayun~ inz!phl^uvanz!sayun~ cerz!nn varunna rogaavastha israayelilz! rzipporz!t^t^ ce`yyappe`t^t^ataayirunnu vaarz!tta. |
| പക്ഷേ, കൊവിഡ് സുനാമിക്ക് ശമനമുണ്ടായി. | paks^e ko`vid^ sunaamikk shamanamun^t^aayi. |

## 8.8 Transliteration scheme for Meetei Mayek

### Table 8 Transliteration scheme for Meetei Mayek

| Sl.N. | Meetei Mayek | Transliteration | Unicode | Unicode Names |
|---|---|---|---|---|
| 1. | ꯀ | ka | ABC0 | KOK (k) |
| 2. | ꯁ | sa | ABC1 | SAM (s) |
| 3. | ꯂ | la | ABC2 | LAI (l) |
| 4. | ꯃ | ma | ABC3 | MIT (m) |
| 5. | ꯄ | pa | ABC4 | PA (p) |
| 6. | ꯅ | na | ABC5 | NA (n) |
| 7. | ꯆ | ca | ABC6 | CHIL (c) |
| 8. | ꯇ | ta | ABC7 | TIL (t) |
| 9. | ꯈ | kha | ABC8 | KHOU (kʰ) |
| 10. | ꯉ | nga | ABC9 | NGOU (ŋ) |
| 11. | ꯊ | tha | ABCA | THOU (tʰ) |
| 12. | ꯋ | wa | ABCB | WAI (w) |
| 13. | ꯌ | ya | ABCC | YANG (j) |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 14. | ꯍ | ha | ABCD | HUK (h) | 33. | � | t: | ABE0 | TIL LONSUM (t) |
| 15. | ꯎ | uu | ABCE | UN (u) | 34. | Ⅲ | ng: | ABE1 | NGOU LONSUM (ŋ) |
| 16. | ꯏ | ii | ABCF | I (i) | 35. | ꯏ | i: | ABE2 | I LONSUM (i) |
| 17. | ꯐ | pha | ABD0 | PHAM (pʰ) | 36. | ꯢ | o | ABE3 | ONAP (o) |
| 18. | ꯑ | a | ABD1 | ATIYA (ə) | 37. | ꯤ | i | ABE4 | INAP (i) |
| 19. | ꯒ | ga | ABD2 | GOK (g) | 38. | ꯥ | aa | ABE5 | ANAP (a) |
| 20. | ꯓ | jha | ABD3 | JHAM (ɟʰ) | 39. | ꯦ | e | ABE6 | YENAP (e) |
| 21. | ꯔ | r` | ABD4 | RAI (ɹ) | 40. | ꯧ | au | ABE7 | SOUNAP (əu) |
| 22. | ꯕ | ba | ABD5 | BA (b) | 41. | ꯨ | u | ABE8 | UNAP (u) |
| 23. | ꯖ | ja | ABD6 | JIL (ɟ) | 42. | ꯩ | ai | ABE9 | CHEINAP (əi) |
| 24. | ꯗ | da | ABD7 | DIL (d) | 43. | ꯪ | n~ | ABEA | NUNG (ŋ) |
| 25. | ꯘ | gha | ABD8 | GHOU (gʰ) | 44. | O | 0 | ABF0 | ZERO |
| 26. | ꯙ | dha | ABD9 | DHOU (dʰ) | 45. | ꯱ | 1 | ABF1 | ONE |
| 27. | ꯚ | bha | ABDA | BHAM (bʰ) | 46. | ꯲ | 2 | ABF2 | TWO |
| 28. | Ⅲ | k: | ABDB | KOK LONSUM (k) | 47. | ꯳ | 3 | ABF3 | THREE |
| 29. | ꯜ | l: | ABDC | LAI LONSUM (l) | 48. | ꯴ | 4 | ABF4 | FOUR |
| 30. | ꯝ | m: | ABDD | MIT LONSUM (m) | 49. | ꯵ | 5 | ABF5 | FIVE |
| 31. | ꯞ | p: | ABDE | PA LONSUM (p) | 50. | ꯶ | 6 | ABF6 | SIX |
| 32. | ꯟ | n: | ABDF | NA LONSUM (n) | 51. | ꯷ | 7 | ABF7 | SEVEN |
| | | | | | 52. | ꯸ | 8 | ABF8 | EIGHT |
| | | | | | 53. | ꯹ | 9 | ABF9 | NINE |

**8.9    Transliteration scheme for Oriya Script**

**Table 9    Transliteration scheme for Oriya Script**

| SI.N. | Odia | Transliteration | Unicode | Unicode Names | SI.N. | Odia | Transliteration | Unicode | Unicode Names |
|---|---|---|---|---|---|---|---|---|---|
| 1. | ଁ | m~ | 0B01 | CANDRABINDU | 21. | ଚ | ca | 0B1A | CA |
| 2. | ଂ | n~ | 0B02 | ANUSVARA | 22. | ଛ | cha | 0B1B | CHA |
| 3. | ଃ | h` | 0B03 | VISARGA | 23. | ଜ | ja | 0B1C | JA |
| 4. | ଅ | a | 0B05 | A | 24. | ଝ | jha | 0B1D | JHA |
| 5. | ଆ | aa | 0B06 | AA | 25. | ଞ | nja | 0B1E | NYA |
| 6. | ଇ | i | 0B07 | I | 26. | ଟ | t^a | 0B1F | TTA |
| 7. | ଈ | ii | 0B08 | II | 27. | ଠ | t^ha | 0B20 | TTHA |
| 8. | ଉ | u | 0B09 | U | 28. | ଡ | d^a | 0B21 | DDA |
| 9. | ଊ | uu | 0B0A | UU | 29. | ଢ | d^ha | 0B22 | DDHA |
| 10. | ଋ | r` | 0B0B | VOCALIC R | 30. | ଣ | n^a | 0B23 | NNA |
| 11. | ଌ | lr` | 0B0C | VOCALIC L | 31. | ତ | ta | 0B24 | TA |
| 12. | ଏ | e | 0B0F | E | 32. | ଥ | tha | 0B25 | THA |
| 13. | ଐ | ai | 0B10 | AI | 33. | ଦ | da | 0B26 | DA |
| 14. | ଓ | o | 0B13 | O | 34. | ଧ | dha | 0B27 | DHA |
| 15. | ଔ | au | 0B14 | AU | 35. | ନ | na | 0B28 | NA |
| 16. | କ | ka | 0B15 | KA | 36. | ପ | pa | 0B2A | PA |
| 17. | ଖ | kha | 0B16 | KHA | 37. | ଫ | pha | 0B2B | PHA |
| 18. | ଗ | ga | 0B17 | GA | 38. | ବ | ba | 0B2C | BA |
| 19. | ଘ | gha | 0B18 | GHA | 39. | ଭ | bha | 0B2D | BHA |
| 20. | ଙ | nga | 0B19 | NGA | 40. | ମ | ma | 0B2E | MA |
| | | | | | 41. | ଯ | ya | 0B2F | YA |
| | | | | | 42. | ର | ra | 0B30 | RA |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 43. | ଲ | la | 0B32 | LA | | 55. | ୦ | 0 | 0B66 | ZERO |
| 44. | ଳ | l^a | 0B33 | LLA | | 56. | ୧ | 1 | 0B67 | ONE |
| 45. | ଵ | va | 0B35 | VA | | 57. | ୨ | 2 | 0B68 | TWO |
| 46. | ଶ | sha | 0B36 | SHA | | 58. | ୩ | 3 | 0B69 | THREE |
| 47. | ଷ | s^a | 0B37 | SSA | | 59. | ୪ | 4 | 0B6A | FOUR |
| 48. | ସ | sa | 0B38 | SA | | 60. | ୫ | 5 | 0B6B | FIVE |
| 49. | ହ | ha | 0B39 | HA | | 61. | ୬ | 6 | 0B6C | SIX |
| 50. | ଡ଼ | d^za | 0B5C | DDDHA | | 62. | ୭ | 7 | 0B6D | SEVEN |
| 51. | ଢ଼ | d^hza | 0B5D | RHA | | 63. | ୮ | 8 | 0B6E | EIGHT |
| 52. | ୟ | yza | 0B5F | YYA | | 64. | ୯ | 9 | 0B6F | NINE |
| 53. | ୠ | r`r` | 0B60 | VOCLIC RR | | 65. | ଽ | h~ | 0B3D | AVAGRAHA |
| 54. | ୡ | lr`lr` | 0B61 | VOCLIC LL | | | | | | |

### 8.9.1 Odia example words in proposed scheme:

କା (kaa), କି (ki), କୀ (kii), କୁ (ku), କୂ (kuu), କେ (ke), କୈ (kai), କୋ (ko), କୌ (kau), କଂ (kam~), କଁ (kan~) କାଂ (kaam~), କାଁ (kaan~) କିଂ (kim~), କୀଂ (kiim~), କୁଂ (kum~), କୁଁ (kun~) କୂଂ (kum~), କୂଁ (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), ବୁଢା(bud^hzaa), ପାଟଣା (paat^an^aa), ଅମ୍ବର(ambara), କୁମ୍ଭୀର (kumbhiira), ପଶ୍ଚିମ(pashchima),

ଅକ୍ସଫୋର୍ଡ (aksaphord^a), ସର୍କସ (sarkasa), ଗୁମ୍ଫା (gumphaa), ଉଦୟଗିରୀ (uday^agirii),

ମନ୍ଦିର (mandira), ଗାନ୍ଧି (gaandhi), ଲଙ୍କାମରିଚ (langkaamaricha), ଆଲୁ (aal^u), ପ୍ରାସାଦ (praasaada), ପୃଥ୍ୱୀରାଜ (pr`thbiiraaja), ଲକ୍ଷ୍ମୀ (lakshmii), ଭଣ୍ଡାର (bhan^d^aara), ପଶ୍ଚିମାଞ୍ଚଳ (pashchimaanjchal^a), ବସନ୍ତ (basanta), କର୍ଣ୍ନାଟକ (karn^n^aat^aka), ବୁଦ୍ଧ (budhdha), ଆବ୍ରାହମ ଲିଙ୍କନ (aabraahama lingkana), ଭରଦ୍ବାଜ (bharadbaaja), ଜାତୀୟ (jaatiiy^a), ଇଣ୍ଡୋନେସିଆ (in^d^onesiaa), ଭାରତ (bhaarata), ରାଜସ୍ଥାନ (raajasthaana), ଉତ୍ତରାଞ୍ଚଳ (uttaranjchal^a), ବ୍ରାଜିଲ (braajila), ପଣ୍ଡିତ (pan^d^ita), କାଜିରଙ୍ଗା (kaajiranggaa), 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. | ஃ | 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. | ஒ | o` | 0B92 | O |
| 13. | ஓ | o | 0B93 | OO |
| 14. | ஔ | 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. | ஶ | 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. | எ | 7 | 0BED | SEVEN |
|-----|---|---|------|-------|
| 46. | அ | 8 | 0BEE | EIGHT |
| 47. | கூ | 9 | 0BEF | NINE |

| 48. | ௐ | o`m | 0BD0 | OM |
|-----|---|-----|------|-----|

### 8.10.1 Tamil example sentences and corresponsing Transliteration:

| Tamil Sentences | Transliteration |
|-----------------|-----------------|
| நாஜி குறியாக்க இயந்திரமான எனிக்மாவை உடைத்து, இரண்டாம் உலகப் போரில் நேசநாட்டுப் படைகள் வெற்றி பெற உதவிய பத்தாண்டுகளுக்குள், கணிதவியலாளரான ஆலன் டூரிங், "இயந்திரங்களால் சிந்திக்க முடியுமா?" என்கிற கேள்வியுடன் வரலாற்றை மாற்றியமைக்க முனைந்தார். | 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?" e`nzkirza kel^viyut^anz varalaarzrzai maarzrziyamaikka munzaintaar. |
| 1950 ஆம் ஆண்டில், அவர் 'கணினி இயந்திரம் மற்றும் நுண்ணறிவு' எனும் கட்டுரையினை வெளியிட்டதுடன், அவரது அடுத்தடுத்த சோதனைகள், செயற்கை நுண்ணறிவின் அடிப்படை இலக்கையும், பார்வையையும் நிறுவியது. | 1950 aam aan^til, avar 'kan^inzi iyantiram marzrzum nun^n^arzivu' e`nzum kat^t^uraiyinzai vel^iyit^t^atut^anz, avaratu atuttatutta cotanzaikal^, ce`yarzkai nun^n^arzivinz at^ippat^ai ilakkaiyum, paarvaiyaiyum nirzuviyatu. |
| விண்வெளிக்கு மனிதர்களை அனுப்ப பயன்படுத்தும் கிரையோஜெனிக் இயந்திர சோதனை நெல்லை மாவட்டம் மகேந்திரகிரி விண்வெளி ஆராய்ச்சி மையத்தில் நடைபெற்றது. | vin^ve`l^ikku manzitarkal^ai anzuppaa payanzpat^uttum kiraiyoje`nzik iyantira cotanzai ne`llai maavat^t^am makentirakiri vin^vin^ve`l^i aaraaycci maiyattil nat^aipe`rzrzatu. |

| | |
|---|---|
| இந்த சோதனை வெற்றி பெற்றதாக கூறப்பட்டுள்ளது. | inta cotanzai ve`rzrzi pe`rzrzataaka kuurzappat^t^ul^l^atu. |
| கிரையோஜெனிக் எந்திரத்தின் சி.20 இ 11 எம்.கே.111 பரிசோதனை 28 விநாடிகள் நீடித்தது. இந்த சோதனை வெற்றிகரமாக நடந்து முடிந்ததாக இஸ்ரோ விஞ்ஞானிகள் தரப்பில் தெரிவிக்கப்பட்டுள்ளது. | kiraiyoje`nzik e`ntirattinz ci.20 i11 e`m.ke.111 paricotanai ve`rzrzikaramaaka nat^antu mut^intataaka isro vinjnjaanzikal^ tarappil te`rivikkappat^t^ul^l^atu. |
| ஒரு மனிதரிடம் இருந்து மற்றொருவருக்கு பரவும் போது சிறு சிறு மாற்றங்கள் அதன் உயிர் அணுக்களில் ஏற்படும். | o`ru manzitarit^am iruntu marzrzo`ruvarukku paravum potu cirzu cirzu maarzrzangkal^ atanz uyir an^ukkal^il erzpat^um. |
| கொஞ்சம் வெளிப்படையான மாற்றம் ஏற்படும் போது அதை புதிய திரிபு வைரஸ் என்று அடையாளப்படுத்துவர். அப்படி கொரோனா வைரஸ், ஆல்பா, பீட்டா, காமா, ஓமிக்ரோன் என்று பல்வேறு திரிபுகளை கண்டறிந்தது. | ko`njcam ve`l^ippat^aiyaanza maarzrzam erzpatum potu atai putiya wiripu vairas enzrzu at^aiyaal^appatutt^uvar. appat^i ko`ronzaa vairas, aalpaa, piit^t^aa, kaamaa, omikronz e`nzrzu palverzu tiripukal^ai kan^tarzintatu. |
| இந்தியா , ஆப்பிரிக்கா நாடுகளில் கண்டறிய பட்ட இந்த திரிபுகளால் 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. | intiyaa, aappirikkaa naat^ukal^il kan^t^rziya pat^t^a inta tiripukal^aal pallaayirakkan^akkaanza makkal^ paatikkappat^t^u uyir ilzantanzar. tat^uppuucikal^, kat^t^uppaat^ukal^ ponzrzavarzrzaal noy paatippukal^ai kurzaitta nilaiyil tarzoity miin^t^um ciinzaavil BF.7 e`nzrza vairasinz putiya maarzupaat^t^ut to`rzrzu vekamaaka paravi varukirzatu. |

### 8.11  Transliteration scheme for Telugu Script

**Table 11   Transliteration scheme for Telugu Script**

| Sl.N. | Telugu | Transliteration | Unicode | Unicode Names |
|---|---|---|---|---|
| 1. | ఁ | m~ | 0C01 | CANDRABINDU |
| 2. | ం | 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. | ఌ | 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 | | 53. | బౄ | r`r` | 0C60 | VOCALIC RR |
|-----|----|------|------|-----|---|-----|----|-------|------|------------|
| 43. | య | ya | 0C2F | YA | | 54. | ఌూ | lr`lr` | 0C61 | VOCALIC LL |
| 44. | ర | ra | 0C30 | RA | | 55. | ౦ | 0 | 0C66 | ZERO |
| 45. | ఱ | rza | 0C31 | RRA | | 56. | ౧ | 1 | 0C67 | ONE |
| 46. | ల | la | 0C32 | LA | | 57. | ౨ | 2 | 0C68 | TWO |
| 47. | ళ | l^a | 0C33 | LLA | | 58. | ౩ | 3 | 0C69 | THREE |
| 48. | వ | va | 0C35 | VA | | 59. | ౪ | 4 | 0C6A | FOUR |
| 49. | శ | sha | 0C36 | SHA | | 60. | ౫ | 5 | 0C6B | FIVE |
| 50. | ష | s^a | 0C37 | SSA | | 61. | ౬ | 6 | 0C6C | SIX |
| 51. | స | sa | 0C38 | SA | | 62. | ౭ | 7 | 0C6D | SEVEN |
| 52. | హ | ha | 0C39 | HA | | 63. | ౮ | 8 | 0C6E | EIGHT |
| | | | | | | 64. | ౯ | 9 | 0C6F | NINE |
| | | | | | | 65. | ఽ | 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`), కౄ (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), ప్రేమించు (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 హైదరాబాద్కు చెందిన లీ హెల్త్ డొమెయిన్ సరికొత్త ఔషధాన్ని రూపొందించింది. శక్తివంతమైన ఫైటో పోషకాలతో సహజ బయోన్యూట్రాస్యూటికల్స్ ఆధారంగా స్కూతివాక్ బ్రాండ్ పేరుతో ఈ ట్యాబ్లెట్లను 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

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ఇది చక్కగా పనిచేస్తుంది. తద్వారా నొప్పులు, గట్టిదనాన్ని తగ్గిస్తుంది. ఈ మందు వాడితే సర్జరీలను నివారించవచ్చని కంపెనీ డైరెక్టర్ లీలా రాణి వెల్లడించారు.

సాధారణంగా బాధితుల్లో ఎక్కువ మంది మందులు, చికిత్సల కోసం పెళతారు. చివరి ప్రయత్నంగా శస్త్ర చికిత్స(సర్జరీ) చేయించుకుంటున్నారు. ఆస్టియోఆర్థరైటిస్ చికిత్సలో వాడే నాన్‌స్టెరాయిడల్ యాంటి ఇన్‌ఫ్లామేటరీ డ్రగ్స్, అనాల్జెసిక్స్ నొప్పిని నివారించి తాత్కాలికంగా ఉపశమనాన్ని కలిగిస్తాయి. స్కూత్‌వాక్ ట్యాబ్లెట్లు రోజు 2-3 వేసుకోవడం ద్వారా మూడు వారాల్లో నొప్పుల నుంచి వేగంగా ఉపశమనం లభిస్తుంది. ఇది సరళత(లూబ్రికేషన్), కదలిక మెరుగుపరిచి కీళ్లకు అనువుగా ఉంటుంది. ట్యాబ్లెట్లను మూడు నాలుగు నెలలు వాడడం ద్వారా సర్జరీలను నివారించవచ్చు.

18 ఏళ్లుపైబడ్డ వారందరూ వాడొచ్చు. కోవిడ్-19 నేపథ్యంలో ఆసుపత్రికి వెళ్లలేనివారు ఆన్‌లైన్‌లో అమెజాన్ ద్వారా స్కూత్‌వాక్‌ను 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^akaalato sahaja bayonyuut^raasyuut^ikals aadhaara.ngaa smuutvaak braa.nd^ peruto ii t^yaable`t^lanu tayaaru ceshaaru. 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 ceshaaru. 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 baadhapad^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^lapaibad^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 की (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 combinantion 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. सतत् (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. ॻ (g_a)

**ANNEX A**

*(Foreword)*

**SCHEDULED LANGUAGES IN INDIA AND CORRESPONDING SCRIPTS**

| Sl. | 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 | Ṃ\ṃ | m' | .m | n~ |
| 3. | VISARGA | ः | aH | H | H | aḥ | | H | Ḥ\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 | Ū\ū | uu | uu | uu |
| 10. | VOCALIC R | ऋ | x | q | RRi | ṛ | ṛ | R | Ṛ\ṛ | r'i | .r | r` |
| 11. | VOCALIC L | ऌ | q | L | LLi | | ḷ | lR | Ḷ\ḷ | lr'i | .l | lr` |
| 12. | CANDRA E | ऍ | ae | | | | ê | | | | | a` |
| 13. | SHORT E | ॆ | 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 | ऑ | ao | AV | | | -- | | | o' | | ao |
| 17. | SHORT O | ॊ | 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 | ṅa | ṅa | Ga | Ṅa\ṅa | 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 | Ṇa\ṇa | 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 | ऩ | n'a | nYa | nh | n̠a | n̠a | | | 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 | ऱ | 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 | ऴ | Za | lYYA | | ḻa | ḻa | | | 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 | क़ | k'a | kZa | qa | | qa | | | k.a | | kza |
| 58. | KHHA | ख़ | kh'a | KZa | Ka | | kha | | | kh.a | | khza |
| 59. | GHHA | ग़ | g'a | gZa | Ga | | ġa | | | g.a | | gza |
| 60. | ZA | ज़ | 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 | फ़ | ph'a | PZa | fa | | fa | | | ph.a | | phza |
| 64. | YYA | य़ | Ya | YZa | Ya | ẏa | ẏa | | | y.a | | yza |
| 65. | VOCALIC RR | ॠ | X | Q | RRI | | ṝ | RRa | Ṛa\ṛa | r'ii | .rra | r`r` |
| 66. | VOCALIC LL | ॡ | Q | | LLI | | Ḹ | IRRa | Ḹa\ḹa | lr'ii | | lr`lr` |
| 67. | DANDA | । | \. | | | | | | | | | | |
| 68. | DOUBLE DANDA | ॥ | \.. | | | | | | | | | ‖ |
| 69. | ZERO | ० | \0 | | 0 | | | | | | | 0 |

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| 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 | ग़ | g"a | | | | | | g_a | | g_a |
| 80. | JJA | ज़ | j"a | | | | | | j_a | | j_a |
| 81. | DDDA | ड़ | D"a | | | | | | d'_a | | d^_a |
| 82. | BBA | ब़ | b"a | | | | | | b_a | | b_a |
| 83. | OM | ॐ | @M | | OM/AUM | | | | a'um' | | o`m |
| 84. | AVAGRAHA | ऽ | \s | | .a | | ’ | | ~ | | h~ |
| 85. | Eyelash RA | Marathi | r’a | | | | ř | | r_’ | | r_a |

**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 | ं | · | ் | ಂ | ം | ం | ং | ં | ଂ |
| 3. | h` | ः | NA | ஃ | ಃ | ഃ | ః | ঃ | : | ଃ |
| 4. | a | अ | ਅ | அ | ಅ | അ | అ | অ | અ | ଅ |
| 5. | aa | आ | ਆ | ஆ | ಆ | ആ | 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 | ഋ | ఋ | ঋ | ઋ | ଋ |
| 11. | lr` | ळ | NA | NA | ಌ | ൡ | ఌ | ঌ | ળ | ଌ |
| 12. | a` | ऍ | NA | NA | NA | NA | NA | NA | ઍ | NA |
| 13. | e` | ऎ | NA | எ | ಎ | എ | ఎ | NA | NA | NA |
| 14. | e | ए | ਏ | ஏ | ಏ | ഏ | ఏ | এ | એ | ଏ |
| 15. | ai | ऐ | ਐ | ஐ | ಐ | ഐ | ఐ | ঐ | ઐ | ଐ |
| 16. | ao | ऑ | NA | NA | NA | NA | NA | NA | ઑ | NA |
| 17. | o` | ऒ | NA | ஒ | ಒ | ഒ | ఒ | NA | NA | NA |
| 18. | o | ओ | ਓ | ஓ | ಓ | ഓ | ఓ | ও | ઓ | ଓ |
| 19. | au | औ | ਔ | ஔ | ಔ | ഔ | ఔ | ঔ | ઔ | ଔ |

| 20. | ka | क | ব | க | ఈ | ಕ | ୫ | ক | ꯛ | କ |
| 21. | kha | ख | খ | NA | ఖ | ಖ | ಘ | খ | ꯈ | ଖ |
| 22. | ga | ग | গ | NA | గ | ಗ | ೫ | গ | ꯒ | ଗ |
| 23. | gha | घ | ঘ | NA | ఘ | ಘ | ಘ | ঘ | ꯘ | ଘ |
| 24. | nga | ङ | ঙ | ங | ఙ | ಙ | ಜ | ঙ | ꯉ | ଓ |
| 25. | ca | च | চ | ச | ఛ | ಚ | ಚ | চ | ꯌ | ଚ |
| 26. | cha | छ | ছ | NA | ఛ | ಛ | ಛ | ছ | ꯆ | ଛ |
| 27. | ja | ज | জ | ஜ | జ | ಜ | ಜ | জ | ꯖ | ଜ |
| 28. | jha | झ | ঝ | NA | ఝ | ಝ | ಝ | ঝ | ꯓ | ଝ |
| 29. | nja | ञ | ঞ | ஞ | ఞ | ಞ | ಞ | ঞ | ꯅ | ଞ |
| 30. | t^a | ट | ট | ட | ఙ | ಟ | ಟ | ট | ꯇ | ଟ |
| 31. | t^ha | ठ | ঠ | NA | ఠ | ಠ | ಠ | ঠ | ꯊ | ଠ |
| 32. | d^a | ड | ড | NA | డ | ಡ | ಡ | ড | ꯗ | ଡ |
| 33. | d^ha | ढ | ঢ | NA | ఢ | ಢ | ಢ | ঢ | ꯙ | ଢ |
| 34. | n^a | ण | ণ | ண | ణ | ಣ | ಣ | ণ | ꯅ | ଣ |
| 35. | ta | त | ত | த | త | ತ | ತ | ত | ꯇ | ତ |
| 36. | tha | थ | থ | NA | థ | ಥ | ಥ | থ | ꯊ | ଥ |
| 37. | da | द | দ | NA | ద | ದ | ದ | দ | ꯗ | ଦ |
| 38. | dha | ध | ধ | NA | ధ | ಧ | ಧ | ধ | ꯙ | ଧ |
| 39. | na | न | ন | ந | న | ನ | ನ | ন | ꯅ | ନ |
| 40. | nza | ऩ | NA | ன | NA | ன | NA | NA | NA | NA |
| 41. | pa | प | প | ப | ప | ಪ | ಪ | প | ꯄ | ପ |

| No. | Trans | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 42. | pha | फ | ढ | NA | ఝ | ഫ | ఫ | ফ | ੜ | ଫ |
| 43. | ba | ब | ব | NA | ಬ | ബ | బ | ব | ਬ | ବ |
| 44. | bha | भ | ভ | NA | ಭ | ഭ | భ | ভ | ਭ | ଭ |
| 45. | ma | म | ম | ம | ಮ | മ | మ | ম | ਮ | ମ |
| 46. | ya | य | জ | ய | ಯ | യ | య | য | ਯ | ଯ |
| 47. | ra | र | ৰ | ர | ರ | ര | ర | র | ਰ | ର |
| 48. | rza | ऱ | NA | ற | ಱ | റ | ఱ | NA | NA | NA |
| 49. | la | ल | ল | ல | ಲ | ല | ల | ল | ਲ | ଲ |
| 50. | l^a | ळ | ল়ু | ள | ಳ | ഇ | ಳ | NA | ਲ਼ | ଳ |
| 51. | lza | ऴ | NA | ழ | NA | ഴ | NA | NA | NA | NA |
| 52. | va | व | ৱ | வ | ವ | വ | వ | NA | ਵ | ଵ |
| 53. | sha | श | শ | ஶ | ಶ | ശ | శ | শ | ਸ਼ | ଶ |
| 54. | s^a | ष | NA | ஷ | ಷ | ഷ | ష | ষ | ਖ਼ | ଷ |
| 55. | sa | स | ম | ஸ | ಸ | സ | సు | স | ਸ | ସ |
| 56. | ha | ह | ড | ஹ | ಹ | ഹ | హ | হ | ਹ | ହ |
| 57. | kza | क़ | ক় | NA | NA | NA | NA | NA | NA | NA |
| 58. | khza | ख़ | খ় | NA | NA | NA | NA | NA | NA | NA |
| 59. | gza | ग़ | গ় | NA | NA | NA | NA | NA | NA | NA |
| 60. | jza | ज़ | জ় | NA | NA | NA | NA | NA | NA | NA |
| 61. | d^za | ड़ | ড় | NA | NA | NA | NA | ড় | NA | ଡ଼ |
| 62. | d^hza | ढ़ | NA | NA | NA | NA | NA | ঢ় | NA | ଢ଼ |
| 63. | phza | फ़ | ফ় | NA | NA | NA | NA | NA | NA | NA |

| 64. | yza | य़ | NA | NA | NA | NA | NA | ꙮ | NA | ય |
| 65. | r`r` | ॠ | NA | NA | ಋಋ | ౄ | ಋూ | ૠ | ॠ | ઋ |
| 66. | lr`lr` | ॡ | NA | NA | ౖ | ൡ | ౖ | ૡ | ఌ | ઌ |
| 67. | \| | । | । | NA | NA | NA | NA | । | NA | । |
| 68. | \|\| | ॥ | ॥ | NA | NA | NA | NA | ॥ | NA | ॥ |
| 69. | 0 | ० | ੦ | ౿ | ౦ | ౼ | ౦ | ୦ | ೦ | ૦ |
| 70. | 1 | १ | ੧ | ௧ | ౧ | ౧ | ౧ | ୧ | ೧ | ૧ |
| 71. | 2 | २ | ੨ | ௨ | ౨ | ౨ | ౨ | ୨ | ೨ | ૨ |
| 72. | 3 | ३ | ੩ | ௩ | ౩ | ౩ | ౩ | ୩ | ೩ | ૩ |
| 73. | 4 | ४ | ੪ | ௪ | ౪ | ౪ | ౪ | ୪ | ೪ | ૪ |
| 74. | 5 | ५ | ੫ | ௫ | ౫ | ౫ | ౫ | ୫ | ೫ | ૫ |
| 75. | 6 | ६ | ੬ | ௬ | ౬ | ౬ | ౬ | ୬ | ೬ | ૬ |
| 76. | 7 | ७ | ੭ | ௭ | ౭ | ౭ | ౭ | ୭ | ೭ | ૭ |
| 77. | 8 | ८ | ੮ | ௮ | ౮ | ౮ | ౮ | ୮ | ೮ | ૮ |
| 78. | 9 | ९ | ੯ | ௯ | ౯ | ౯ | ౯ | ୯ | ೯ | ૯ |
| 79. | g_a | ग़ | NA | NA | NA | NA | NA | NA | NA | NA |
| 80. | j_a | ज़ | NA | NA | NA | NA | NA | NA | NA | NA |
| 81. | d^_a | ड़ | NA | NA | NA | NA | NA | NA | NA | NA |
| 82. | b_a | ब़ | NA | NA | NA | NA | NA | NA | NA | NA |
| 83. | o`m | ॐ | NA | ௐ | NA | NA | NA | NA | NA | NA |
| 84. | .h | ऽ | NA | NA | ఽ | ∫ | ఽ | ୼ | ఽ | ઽ |
| 85. | r_a | Eyelash RA | NA | NA |  | ഠ | 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 | ஃக்ஷ | | ക്ഷ | క్ష | 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 |

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