

Oriya Script



4.3 Oriya Code Chart

	OB0	OB1	OB2	OB3	OB4	OB5	OB6	OB7
0		ଞ OB10	ଠ OB20	ଢ OB30	ଢ଼ OB40		ଢ଼ି OB60	ଞ OB70
1	ଠ OB01		ଢ OB21		ଢ଼ OB41		ଢ଼ି OB61	
2	ଠ OB02		ଢ OB22	ଢ଼ OB32	ଢ଼ OB42			
3	ଠ OB03	ଠ OB13	ଠ OB23	ଢ଼ OB33	ଢ଼ OB43			
4		ଠ OB14	ଢ OB24		ଢ଼ OB44		ଢ଼ି OB64	
5	ଠ OB05	ଠ OB15	ଠ OB25	ଢ଼ OB35			ଢ଼ି OB65	
6	ଠ OB06	ଠ OB16	ଢ OB26	ଢ଼ OB36		ଢ଼ି OB56	ଠ OB66	
7	ଢ OB07	ଢ OB17	ଠ OB27	ଢ଼ OB37	ଢ଼ OB47	ଢ଼ି OB57	ଠ OB67	
8	ଢ OB08	ଢ OB18	ଢ OB28	ଢ଼ OB38	ଢ଼ OB48		ଠ OB68	
9	ଢ OB09	ଢ଼ OB19		ଢ଼ OB39			ଠ OB69	
A	ଢ OB0A	ଢ଼ OB1A	ଢ OB2A	ଢ଼ OB3A			ଠ OB6A	
B	ଢ OB0B	ଢ଼ OB1B	ଢ଼ OB2B		ଢ଼ OB4B		ଠ OB6B	
C	ଢ଼ OB0C	ଢ଼ OB1C	ଢ଼ OB2C	ଢ଼ OB3C	ଢ଼ OB4C	ଢ଼ OB5C	ଠ OB6C	
D		ଢ଼ OB1D	ଢ଼ OB2D	ଢ଼ OB3D	ଢ଼ OB4D	ଢ଼ OB5D	ଠ OB6D	
E		ଢ଼ OB1E	ଢ଼ OB2E	ଢ଼ OB3E			ଠ OB6E	
F	ଢ଼ OB0F	ଢ଼ OB1F	ଢ଼ OB2F	ଢ଼ OB3F		ଢ଼ OB5F	ଠ OB6F	



4.3.1 Oriya Code Chart Details

Code Point	Character	Description
Various signs		
0B01	ँ	ORIYA SIGN CANDRABINDU
0B02	ं	ORIYA SIGN ANUSVARA
0B03	ः	ORIYA SIGN VISARGA
Independent vowels		
0B05	ଅ	ORIYA LETTER A
0B06	ଆ	ORIYA LETTER AA
0B07	ଇ	ORIYA LETTER I
0B08	ଈ	ORIYA LETTER II
0B09	ଉ	ORIYA LETTER U
0B0A	ଊ	ORIYA LETTER UU
0B0B	ଋ	ORIYA LETTER VOCALIC R
0B0C	ୠ	ORIYA LETTER VOCALIC L
0B0D		<reserved>
0B0E		<reserved>
0B0F	ଏ	ORIYA LETTER E
0B10	ଐ	ORIYA LETTER AI
0B11		<reserved>
0B12		<reserved>
0B13	ଓ	ORIYA LETTER O
0B14	ଔ	ORIYA LETTER AU
Consonants		
0B15	କ	ORIYA LETTER KA
0B16	ଖ	ORIYA LETTER KHA
0B17	ଗ	ORIYA LETTER GA
0B18	ଘ	ORIYA LETTER GHA
0B19	ଙ	ORIYA LETTER NGA
0B1A	ଚ	ORIYA LETTER CA
0B1B	ଛ	ORIYA LETTER CHA
0B1C	ଜ	ORIYA LETTER JA
0B1D	ଝ	ORIYA LETTER JHA
0B1E	ଞ	ORIYA LETTER NYA

0B1F	ଟ	ORIYA LETTER TTA
0B20	ଠ	ORIYA LETTER TTHA
0B21	ଡ	ORIYA LETTER DDA
0B22	ଢ	ORIYA LETTER DDHA
0B23	ଣ	ORIYA LETTER NNA
0B24	ତ	ORIYA LETTER TA
0B25	ଥ	ORIYA LETTER THA
0B26	ଦ	ORIYA LETTER DA
0B27	ଧ	ORIYA LETTER DHA
0B28	ନ	ORIYA LETTER NA
0B29		<reserved>
0B2A	ପ	ORIYA LETTER PA
0B2B	ଫ	ORIYA LETTER PHA
0B2C	ବ	ORIYA LETTER BA
0B2D	ଭ	ORIYA LETTER BHA
0B2E	ମ	ORIYA LETTER MA
0B2F	ଯ	ORIYA LETTER YA • Spoken as JA in certain cases
0B30	ର	ORIYA LETTER RA
0B31		<reserved>
0B32	ଲ	ORIYA LETTER LA
0B33	ଳ	ORIYA LETTER LLA
0B34		<reserved>
0B35	ୱ	ORIYA LETTER WA
0B36	ଶ	ORIYA LETTER SHA
0B37	ଷ	ORIYA LETTER SSA
0B38	ସ	ORIYA LETTER SA
0B39	ହ	ORIYA LETTER HA
0B3A	ଠ	ORIYA INVISIBLE LETTER
Various signs		
0B3C	ୠ	ORIYA SIGN NUKTA • for extending the alphabet to new letters
0B3D	ୡ	ORIYA SIGN AVAGRAHA
Dependent vowel signs		
0B3E	ଌ	ORIYA VOWEL SIGN AA
0B3F	୍	ORIYA VOWEL SIGN I



0B40	ଠ	ORIYA VOWEL SIGN II
0B41	ଠ	ORIYA VOWEL SIGN U
0B42	ଠ	ORIYA VOWEL SIGN UU
0B43	ଠ	ORIYA VOWEL SIGN VOCALIC R
0B44	ଠ	ORIYA VOWEL SIGN VOCALIC RR
0B45		<reserved>
0B46		<reserved>
0B47	ଠ	ORIYA VOWEL SIGN E • stands to the left of the consonant
0B48	ଠ	ORIYA VOWEL SIGN AI • pieces left of and above the consonant = 0B47 ଠ 0B56 ଠ
0B49		<reserved>
0B4A		<reserved>
0B4B	ଠ	ORIYA VOWEL SIGN O • pieces on both sides of the consonant = 0B47 ଠ 0B3E ଠ
0B4C	ଠ	ORIYA VOWEL SIGN AU • pieces on both sides of the consonant = 0B47 ଠ 0B57 ଠ

Various signs

0B4D	ଠ	ORIYA SIGN HALANT
0B4E		<reserved>
0B4F		<reserved>
0B50		<reserved>
0B51		<reserved>
0B52		<reserved>
0B53		<reserved>
0B54		<reserved>
0B55		<reserved>
0B56	ଠ	ORIYA AI LENGTH MARK
0B57	ଠ	ORIYA AU LENGTH MARK • This is not used in Oriya

Additional Consonants

0B5C	ଠ	ORIYA LETTER DDA = 0B21 ଠ 0B3C ଠ
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0B5D	ଠ	ORIYA LETTER DDHA = 0B22 ଠ 0B3C ଠ
0B5E		<reserved>
0B5F	ଠ	ORIYA LETTER YYA

Generic additions

0B60	ଠ	ORIYA LETTER VOCALIC RR
0B61	ଠ	ORIYA LETTER VOCALIC LL
0B64		ORIYA SIGN PURNVIRAM
0B65		ORIYA SIGN DEERGH VIRAM

Digits

0B66	୦	ORIYA DIGIT ZERO
0B67	୧	ORIYA DIGIT ONE
0B68	୨	ORIYA DIGIT TWO
0B69	୩	ORIYA DIGIT THREE
0B6A	୪	ORIYA DIGIT FOUR
0B6B	୫	ORIYA DIGIT FIVE
0B6C	୬	ORIYA DIGIT SIX
0B6D	୭	ORIYA DIGIT SEVEN
0B6E	୮	ORIYA DIGIT EIGHT
0B6F	୯	ORIYA DIGIT NINE
0B70	✓	ORIYA ISSHAR

[Note : Code points 0B00 - 0B4F of Oriya Code set have one-to-one phonetic correspondence for vowels, consonants and vowel modifiers with 0900 - 094F of Devanagari Code Set].



4.3.2 Oriya Script Details

A. Explanations for Revised Oriya Code Chart

The Oriya script has been in use since the tenth century. Archaeological evidence of its use in engraved and preserved on stone slabs, copper plates, palm-leaf manuscripts and paper manuscripts. With the coming of mechanical printing presses and type writers; and nowadays electronic text generation systems, Oriya script has acquired some kind of stability both in terms of number of letters and their designs. The Oriya script is used for writing Oriya, its dialects such as Sambalpuri and Sanskrit languages.

The Oriya writing system is a fusion between syllabic writing systems and phonemic writing systems. The effective unit of Oriya writing system is the orthographic syllable, consisting of a consonant and vowel (CV) core and, optionally, one or more preceding consonants, with a canonical structure of (CC) C CV. The orthographic syllable need not correspond exactly with a phonological syllable, especially when a consonant cluster is involved, but the writing system is built on phonological principles and tends to correspond quite closely to pronunciation. The orthographic syllable is built up of alphabetic pieces, the actual letters of the Oriya script. These pieces consist of three distinct character types: Consonant letters, independent vowels, and dependent vowel signs. In a text sequence these characters are stored in logical (phonetic) order.

Notation

In the description that follows the undermentioned notations are used.

C_n	Nominal glyph form of consonant C as it appears in the code chart.
C_L	A live consonant, depicted identical to C_n .
C_d	Glyph depicting the dead consonant form of consonant C.
C_h	Glyph depicting the half-consonant form of consonant C.
$C(\text{sign})$	Glyph representing a consonant C in forming a conjunct.

L_n	Nominal glyph form of a conjunct ligature consisting of two or more component consonants.
RA_{sup}	A non-spacing combining mark glyph of the U + 0B30 ORIYA LETTER RA attached to the upper right side part of a base glyph form. This form is also known as <i>repha</i> .
RA_{sub}	A non-spacing combining mark glyph form of the U 0B30 ORIYA LETTER RA attached to the lower part of a base glyph form. This form is also known as <i>Ra-phala</i> .
V_{vs}	Glyph depicting the dependent vowel sign form of a vowel V.

Principles of the Script

Oriya characters can combine or change shape depending on their context. The appearance of a character is affected by its sequential ordering with respect to other characters, the font or typeface used to render the character, and the application or system environment. These variables can cause the appearance of Oriya character to differ from their nominal glyphs (used in the code chart)

Consonant letters : Each consonant letter represents a single phoneme, but also retains the inherent vowel A. Thus KA(0B15) represents not just /k/, but also /ka/. In the presence of any other dependent vowel sign, the inherent vowel A is overridden.

Consonant cluster : There are four ways of forming consonant clusters in Oriya :

(1) A consonant cluster is depicted with a conjunct glyph.

$$JA_d + NYA_L \rightarrow J.NYA_n$$

କ୍ + ଣ → କ୍ଣ

(2) Half-form glyphs are used. The half-forms represent C_n .

$$SA_d + KA_L \rightarrow S.KA_n$$

ସ୍ + କ୍ → ସ୍କ



(3) Consonant signs are used. The consonant signs represent C_n.

$$SA_d + TA_L \rightarrow S.TA_n$$

$$ସ୍ + ଡ \rightarrow ସ୍ଠ$$

(4) Diminutive forms of consonants are used. The diminutive forms represent C_n.

$$SA_d + KHA_L \rightarrow S.KHA_n$$

$$ସ୍ + ଖ \rightarrow ସ୍ଵ$$

In the absence of any of these four types of glyphs, the dead consonants are depicted using the nominal consonant forms combined with visible HALANT signs.

$$DA_d + GHA_L \rightarrow DA.HALANT.GHA_n$$

$$ଦ୍ + ଘ \rightarrow ଦ୍ଵ \rightarrow ଦ୍ଵ$$

With a view to preventing conjunct formation involving the five nasal phonemes, NGA (0B19), NYA (0B1E), NNA (0B23), NA (0B28) and MA (0B2E) with other phonemes of their respective *vargas*, ANUSVARA is positioned to the left of C_n.

$$NGA_d + GA_L \rightarrow NG.GA_n \rightarrow ANUSVARA.GA_n$$

$$ଙ୍ + ଗ \rightarrow ଙ୍ଘ \rightarrow ଂ + ଗ \rightarrow ଙ୍ଘ$$

Half-forms of consonants : (Refer Table-1)

Consonant letters may also be rendered as half-forms, which depict the final consonant in consonant clusters. These half-forms in Oriya retain the inherent vowel A, whereas the whole-form consonants, to which the half-forms are attached, lose the inherent vowel A. In presenting the half-forms the upper parts are dispensed with and only the lower distinctive parts are retained.

KA (0B15), JA (0B1C), NA (0B28), BA (0B2C), WA (0B35), LA (0B32) and LLA (0B33) are presented in their half-forms.

The lower part is placed below C_d to form a consonantal conjunct.

$$GA_d + NA_n \rightarrow G.NA_n$$

$$ଗ୍ + ନ \rightarrow ଗ୍ନ$$

The half-forms of consonants always appear as the second element of a conjunct. Such conjuncts may function as C_d and take further elements.

$$(a) SA_d + KA_L \rightarrow S.KA_d + RI_{vs} \rightarrow S.K.RI_n$$

$$ସ୍ + କ \rightarrow ସ୍ଵ + ଠ \rightarrow ସ୍ଵଠ$$

$$(b) JA_d + JA_L \rightarrow J.JA_d + WA_n \rightarrow J.J.WA_n$$

$$ଜ୍ + ଜ \rightarrow ଜ୍ଞ + ଘ \rightarrow ଜ୍ଞଘ$$

$$(c) SSA_d + KA_L \rightarrow SS.KA_d + RA_n \rightarrow SS.K.RA_{sub.n}$$

$$ଷ୍ + କ \rightarrow ଷ୍ଠ + ର \rightarrow ଷ୍ଠର$$

Wherever a C_d gets attached to the immediate C_L, the *halant* sign (0B4D) is deleted while forming a conjunct.

Consonant Signs : (Refer Table-2) When TA (0B24) is the initial consonant of a consonant cluster preceding another consonant it is rendered as ୍ below କ, ଚ, ଘ, ଙ, ଞ, ଣ to take the forms କ୍, ଚ୍, ଘ୍, ଙ୍, ଞ୍, ଣ୍. It must be noted here that ଢ and ଣ୍ can also be rendered as ଢ୍ and ଣ୍. When TA (0B24) is the second consonant of a consonant cluster, following another consonant it is rendered as ୠ below ଙ, ଙ, ଙ, ଙ. It must be noted here that when the consonant sign ୠ is attached below NNA (0B23) it is pronounced as DDA (0B21). In other words the same consonant sign represents both TA (0B24) and DDA (0B21).

A number of other consonant letters such as DDHA (0B22), THA (0B25) CHA (0B1B), BHA (0B2D), MA (0B2E), and NNA (0B23) are rendered as consonant signs placed below consonant letters. These signs retain the inherent vowel A. Only the sign representing YYA(0B5F) is positioned to the right of a consonant.

Some consonants in Oriya are rendered as consonant signs when they function as part of a consonant cluster. These signs do not have visual similarity with the consonants they represent.

$$KA_d + TA_L \rightarrow K.TA_n$$

$$କ୍ + ଡ \rightarrow କ୍ଠ$$

$$DA_d + MA_L \rightarrow D.MA_n$$

$$ଦ୍ + ମ \rightarrow ଦ୍ଠ$$



Such consonant clusters may function as C_d and further take other consonants.

$$TA_d + SA_L \rightarrow T.SA_d + NA_n \rightarrow T.S.NA_n$$

$$ତ୍ + ସ \rightarrow ସ୍ + ନ \rightarrow ସ୍ନ$$

Orthographic abbreviations (Refer Table-3) :

Orthographic abbreviations are used to make conjuncts of two or more adjacent consonants. Usually the ligated form represents one or more dead consonants C_d followed by a live consonant C_L .

$$NGA_d + KA_L \rightarrow NG.KA_n$$

$$ଂ + କ \rightarrow କ୍$$

$$DA_d + BHA_L \rightarrow D.BHA_n$$

$$ଦ + ଭ \rightarrow ଭ୍$$

Diminutive form of consonants (Refer Table-3) : A diminutive form of consonant is used as the final component of a consonant cluster. Such diminutive forms retain the inherent vowel A and are positioned below the relevant consonant.

$$GA_d + DHA_L \rightarrow G.DHA_n$$

$$ଗ୍ + ଧ \rightarrow ଘ୍$$

$$SHA_d + CA_L \rightarrow SH.CA_n$$

$$ଶ୍ + ଚ \rightarrow ଣ୍$$

Many of such conjuncts can be rendered in two ways: (1) with the ZERO WIDTH JOINER, such as ଗ୍ଵ, ଣ୍ଵ, ଣ୍ଵ etc. and (2) with ZERO WIDTH NON-JOINER, such as ଗ୍ଵ, କ୍ଵ, କ୍ଵ etc.

RA_{sup} and RA_{sub} : RA (0B30) is used in forming conjuncts in two ways. Where it is the first element of a conjunct it functions like a dead consonant C_d . In Oriya it is called *repha* and is attached to the right side top of the base glyph as a non-spacing combining mark glyph. It may also be called 'pre-consonant RA' or ' RA_{sup} '.

(a) $RA_d + KA_L \rightarrow KA_L + RA_{sup}$ Displayed output

$$ତ୍ + କ \rightarrow କ + ୠ \rightarrow କ୍$$

(b)

(i) $RA_d + TA_d + SA_L \rightarrow T.SA_L + RA_{sup}$

$$ତ୍ + ଡ + ସ \rightarrow ସ୍ + ୠ \rightarrow ସ୍$$

(ii) $RA_d + DA_d + WA_L \rightarrow DA_L.RA_{sup} + WA_L$

$$ତ୍ + ଦ + ଓ \rightarrow ଦ + ୠ \rightarrow ଦ୍ + ଓ \rightarrow ଦ୍ଵ$$

(iii) $RA_d + VOCALIC R \rightarrow VOCALIC R + RA_{sup}$

$$ତ୍ + ର \rightarrow ର + ୠ \rightarrow ର୍$$

(iv) $RA_d + JA_L \rightarrow JA_L + RA_{sup} + I_{vs}$

$$ତ୍ + ଜ \rightarrow ଜ + ୠ + ୡ \rightarrow ଜ୍ଞ$$

RA is also used as the final element in a consonant conjunct. In Oriya it is called *ra-phalaa* and is attached to the bottom of the base glyph as non-spacing combining mark glyph. It may also be called 'post-consonant RA' or ' RA_{sub} '. Where RA follows a C_d or consonant conjunct behaving as a C_d it is replaced by the subscript non-spacing mark RA_{sub} .

(a) $KA_d + RA_L \rightarrow KA_L + RA_{sub}$ Displayed output

$$କ୍ + ର \rightarrow କ + ୡ \rightarrow କ୍$$

(b) $SSA_d + KA_L \rightarrow SS.KA_d + RA_L \rightarrow SS.KA_L + RA_{sub}$

$$ଷ୍ + କ \rightarrow ଷ୍ + ର \rightarrow ଷ୍ + ୡ \rightarrow ଷ୍$$

Where a vowel sign such as ୠ (0B3E) or ୠ (0B40) is attached to a RA_{sub} -inflected consonant, it has to be positioned to the right of the conjunct.

There is a consonant and also a consonant conjunct to which both RA_{sup} and RA_{sub} are attached together.

$$RA_d + DA_d + RA_L \rightarrow DA_n.RA_{sup}.RA_{sub}$$

$$ତ୍ + ଦ + ର + ୡ \rightarrow ଦ୍$$

$$RA_d + TA_d + TA_L + RA_L \rightarrow TTA_n.RA_{sup}.RA_{sub}$$

$$ତ୍ + ଡ + ଡ + ର \rightarrow ଡ୍$$

In addition to several consonants, RA_{sup} and RA_{sub} can also be attached to the following consonant conjuncts.

- RA_{sup} : କ୍, ଙ୍, ଙ୍, ଙ୍, ଙ୍, ଙ୍, ଙ୍, ଙ୍, ଙ୍, ଙ୍, ଙ୍
- RA_{sub} : କ୍, ଙ୍
- RA_{sup} and RA_{sub} together : କ୍, ଙ୍

Independent Vowel Graphemes : The independent vowels in Oriya are graphemes that stand on their own. These are used in writing syllables that start with a vowel. Diphthongs in Oriya are treated as



vowels for the purpose of writing. WA (0B35) and YYA (0B5F) are semi-vowels.

Dependent Vowel Signs : Each vowel grapheme, except A (0B05), has its corresponding vowel sign. A vowel sign does not stand alone. Invariably a vowel sign is depicted in combination with a single consonant or a consonant cluster. A vowel sign signifies the final sound of a syllable. Oriya script has three types of vowel signs: (1) non-spacing signs that appear above or below a consonant grapheme, (2) spacing signs that appear to the right or left of a consonant grapheme and (3) combined spacing and non-spacing signs that surround a consonant. The last mentioned types of signs have two of three parts, which represent a single vowel.

Independent : ଅ ଆ ଇ ଈ ଉ ଊ ଋ ଌ ଏ ଐ ଓ ଔ
Vowel Letters

Dependent : ଠା ଠି ଠା ଠୁ ଠୁ ଠୁ ଠୁ ଠେ ଠେ ଠୋ
 ଠୋ

Vowel Signs

Note :

- ଅ is inherent (/k/ is କ, /ka/ is କା)
- ଠା, ଠା (representing ଆ, ଇ) are placed to the right of the consonant or consonant cluster: କା, କା
- ଠି (representing ଈ) is placed above : କି
- ଠୁ, ଠୁ, ଠୁ, ଠୁ (representing ଉ, ଊ, ଋ, ଌ) are placed below : କୁ, କୁ, କୁ, କୁ
- ଠେ (representing ଏ) is placed to the left : କେ
- ଠେ (representing ଐ) has two parts. One part is placed to the left, the other above : କୈ
- ଠୋ (representing ଓ) has two parts. One part is placed to the left, the other to the right : କୋ
- ଠୋ (representing ଔ) has three parts, placed to the left, right and above the consonant : କୌ

Halant: Oriya script employs a sign called *halant* or vowel omission sign. This sign is a slanted dash-like line positioned below a consonant. The presence of this sign indicates the cancellation of the inherent vowel (A) in a consonant. *Halant* also functions as a

combining character. When a consonant loses its inherent vowel (A) with the application of the *halant* sign, it is known as a dead consonant.

TA _n	+	HALANT _n	→	TA _d
ତ	+	୍	→	ତ୍
KA _n	+	MA _n	→	KAMA
କ	+	ମ	→	କମ
KA _n	+	MA _d	→	KAM
କ	+	ମ୍	→	କମ୍

Rendering Order

The following tentative rules provide some clues for minimal rendering of Oriya as part of a plain text sequence. These rules also suggest the sequence of combining and ordering of the glyphs.

- When a consonant C_n precedes a *halant*_n, it is considered to be a dead consonant C_d. A consonant that does not precede a *halant*_n is considered to be a live consonant C_L.

TA _n	+	HALANT _n	→	TA _d
ତ	+	୍	→	ତ୍

- The *nukta* sign, which modifies a consonant form, is placed immediately after the consonant in the memory representation and is attached to that consonant in rendering. If the consonant represents a dead consonant, then *nukta* should precede *halant* in the memory representation.

DDA _n	+	NUKTA _n	+	HALANT _n	→	DDA _d
ଡ	+	୍	+	୍	→	ଡ୍

- If a dead consonant immediately precedes another dead consonant or a live consonant, then the first dead consonant may join the subsequent element to form a conjunct ligature form.

JA _d	+	NYA _L	→	J.NYA _n
ଜ୍	+	ଞ	→	ଞ୍

TA _d	+	TA _L	→	T.TA _n
ତ୍	+	ଟ	→	ଟ୍

- A conjunct ligature form can itself behave as a dead consonant and enter into further, more complex ligatures.



$$NA_d + TA_d + RA_n \rightarrow NA_d + T.RA_n \rightarrow N.T.RA_n$$

$$ନ + ଡ + ର \rightarrow ନ + ଡ୍ର \rightarrow ନ୍ଡ$$

$$SA_d + TA_d + RA_n \rightarrow SA_d + T.RA_n \rightarrow S.T.RA_n$$

$$ସ୍ + ଡ + ର \rightarrow ସ୍ + ଡ୍ର \rightarrow ସ୍ଡ$$

Alternatively

$$NA_d + TA_n \rightarrow N.TA_d + RA_L \rightarrow N.TRA_n$$

$$ନ + ଡ \rightarrow ନ୍ଡ + ର \rightarrow ନ୍ଡ୍ର$$

$$SA_d + TA_d \rightarrow S.TA_d + RA_L \rightarrow S.TRA_n$$

$$ସ୍ + ଡ \rightarrow ସ୍ଡ + ର \rightarrow ସ୍ଡ୍ର$$

5. Since AA_{vs} (0B3E), YYA (0B5F) consonant sign and ANUSVARA sign (0B02) attach to the right of a consonant, whenever necessary Anusvara is attached only after AA vowel sign or YYA consonant sign is already attached.

$$MA_n + AA_{vs} + ANUSVARA_n$$

$$ମ + ଠ + ୠ \rightarrow ମଠଠ$$

$$BA_d + YYA(\text{sign}) + ANUSVARA_n$$

$$ବ + ଠ + ୠ \rightarrow ବଠଠ$$

6. Whenever necessary YYA ଠ sign is attached to a consonant only after RA_{sup} ଠ̣ is already attached.

$$RA_d + GHA_d + YYA_L \rightarrow R.GHA_d + YYA(\text{sign}) \rightarrow R.GH.YYA_n$$

$$ର + ଗ + ଠ \rightarrow ର୍ଗ + ଠ \rightarrow ର୍ଗଠ$$

7. A vowel sign is attached to a consonant only after RA_{sub} sign is already attached.

$$TA_d + RA_L + AA_{vs}$$

$$ଡ + ର + ଠ \rightarrow ଡ୍ର$$

$$KA_d + RA_L + II_{vs}$$

$$କ୍ + ର + ଠ \rightarrow କ୍ଡ୍ର$$

8. A vowel sign is attached to a consonant only after YYA (0B5F) consonant sign ଠ is already attached.

$$THA_d + YYA(\text{sign}) + AA_{vs} \rightarrow TH.YY.AA$$

$$ଥ୍ + ଠ + ଠ \rightarrow ଥଠଠ$$

$$TA_d + YYA(\text{sign}) + U_{vs} \rightarrow T.YY.U$$

$$ଡ୍ + ଠ + ୠ \rightarrow ଡ୍ରୁ$$

The vowel sign U (0B41) or UU (0B42) should attach below the consonant, and not below the consonant sign.

9. VISARGA sign (0B03) ୠ is placed to the right of a consonant only after a vowel sign is already attached.

$$DA_n + U_{vs} + VISARGA_n$$

$$ଦ + ୠ + ୠ \rightarrow ଦ୍ଵଃ$$

$$BA_n + AA_{vs} + VISARGA_n$$

$$ବ + ଠ + ୠ \rightarrow ବଠଃ$$

10. Where ever RA_{sup} and I_{vs} are attached together to a consonant they take their respective position, i.e., I_{vs} above the consonant and RA_{sup} to the right side top of the consonant.

$$RA_d + JA_L \rightarrow R.JA_n + I_{vs} \rightarrow J.I_{vs} + RA_{sup} \rightarrow R.JI_n$$

$$ର୍ + ଜ \rightarrow ର୍ଜ + ୠ \rightarrow ର୍ଜି + ୠ \rightarrow ର୍ଜିଠ$$

11. Presence of a CHANDRABINDU (0B01) sign ୠ above a vowel or consonant suggests its nasalization. This sign is attached only after a dependent vowel sign is already attached to the consonant.

$$GA_n + AA_{vs} + CHANDRABINDU$$

$$ଗ + ଠ + ୠ \rightarrow ଗାଁ$$

12. Oriya has the vowel sign E ୠ (0B47) which must be depicted to the left side of the consonant letter. The software rendering Oriya script must be able to reorder elements in mapping from the logical (character) store to the presentational (glyph) rendering. For example, if C_n denotes the nominal form of consonant and V_{vs} denotes left-side dependent vowel sign form of vowel V, then a reordering of glyphs with respect to encoded characters occurs as just shown.

Character order	Glyph order
KA _n + E _{vs}	E _{vs} + KA _n
କ + ୠ	କେ
KA _n + O _{vs}	E _{vs} + KA _n + AA _{vs}
କ + ୠ	କୋ
KA _n + AI _{vs}	E _{vs} + KA _n + ୠ
କ + ୠ	କୈ
KA _n + AU _{vs}	E _{vs} + KA _n + ୠ + ୠ
କ + ୠ	କୌ



It is necessary to emphasize here that such two or three part vowel signs, which surround a consonant should be generated by single stroke operation on the key board.

1st stroke	2nd stroke	Output
କ	ଠ	କଠ
କ	ଠେ	କଠେ
କ	ଠୌ	କଠୌ

- 13. An ANUSVARA sign ◌̣ has to precede DDA(0B21) or DDHA (0B22) without NUKTA (0B3C).
- 14. An AVAGRAHA sign ◌̣ (0B3D) can attach to a consonant only after O_{vs} is already attached to the consonant.

$$TA_n + O_{vs} + AVAGRAHA \\ \text{ଡ} + ଠ + ଠ̣ \rightarrow \text{ଡଠ̣}$$

- 15. When the dependent vowel E_{vs} is used to override the inherent vowel of a syllable, it is always written to the extreme left of the orthographic syllable. If the orthographic syllable contains a consonant cluster, then this vowel is depicted to the left of that cluster. For example-

$$TA_d + RA_l + E_{vs} \rightarrow T.RA_n + E_{vs} \rightarrow E_{vs} + T.RA_n \\ \text{ଡ} + ର + ଠ \rightarrow \text{ଡ଼} + ଠ \rightarrow \text{ଡ଼ଠ}$$

- 16. K.SSA_n in oriya is an abbreviated glyph, which combines KA_d SSA_L. This ligature should take other consonants when necessary.

$$K.SSA_d + MA_L \rightarrow K.SS.MA \text{ (sign)}$$

$$\text{କ୍ଷ} + ମ \rightarrow \text{କ୍ଷମ}$$

$$K.SSA_d + NNA_L \rightarrow K.SS.NNA$$

$$\text{କ୍ଷ} + ଣ \rightarrow \text{କ୍ଷଣ}$$

Table - 1. Half-forms of consonants

KA_n KA_n

କ	କ̣	କ	କ୍	(କ୍,କ)
କ	କ̣	କ	କ୍	(କ୍,କ)

ଜ	ଜ̣	ଜ	ଜ୍	(ଜ୍,ଜ)
ଝ	ଝ̣	ଝ	ଝ୍	--
ଞ	ଞ̣	ଞ	ଞ୍	--

JA_n JA_n

କ	କ̣	କ	କ୍	(କ୍,କ)
କ	କ̣	କ	କ୍	(କ୍,କ)
ଜ	ଜ̣	ଜ	ଜ୍	(କ୍,କ)

NA_n NA_n

କ	କ̣	କ	କ୍	(କ୍,କ)
ଘ	ଘ̣	ଘ	ଘ୍	ଘ୍
ଙ	ଙ̣	ଙ	ଙ୍	ଞ୍
ଚ	ଚ̣	ଚ	ଚ୍	ଞ୍
ଟ	ଟ̣	ଟ	ଟ୍	ଞ୍
ଠ	ଠ̣	ଠ	ଠ୍	ଞ୍
ଡ	ଡ̣	ଡ	ଡ୍	ଞ୍
ଣ	ଣ̣	ଣ	ଣ୍	ଞ୍
ତ	ତ̣	ତ	ତ୍	ଞ୍
ଥ	ଥ̣	ଥ	ଥ୍	ଞ୍
ଦ	ଦ̣	ଦ	ଦ୍	ଞ୍
ଧ	ଧ̣	ଧ	ଧ୍	ଞ୍
ନ	ନ̣	ନ	ନ୍	ଞ୍

LLA_n LLA_n

କ	କ̣	କ	କ୍	କ୍
ଘ	ଘ̣	ଘ	ଘ୍	ଞ୍
ଞ	ଞ̣	ଞ	ଞ୍	ଞ୍
ଚ	ଚ̣	ଚ	ଚ୍	ଞ୍
ଟ	ଟ̣	ଟ	ଟ୍	ଞ୍
ଠ	ଠ̣	ଠ	ଠ୍	ଞ୍
ଡ	ଡ̣	ଡ	ଡ୍	ଞ୍
ଣ	ଣ̣	ଣ	ଣ୍	ଞ୍
ତ	ତ̣	ତ	ତ୍	ଞ୍
ଥ	ଥ̣	ଥ	ଥ୍	ଞ୍
ଦ	ଦ̣	ଦ	ଦ୍	ଞ୍
ଧ	ଧ̣	ଧ	ଧ୍	ଞ୍
ନ	ନ̣	ନ	ନ୍	ଞ୍

LA_n LA_n

କ	କ̣	କ	କ୍	କ୍
ଘ	ଘ̣	ଘ	ଘ୍	ଞ୍
ଞ	ଞ̣	ଞ	ଞ୍	ଞ୍
ଚ	ଚ̣	ଚ	ଚ୍	ଞ୍
ଟ	ଟ̣	ଟ	ଟ୍	ଞ୍
ଠ	ଠ̣	ଠ	ଠ୍	ଞ୍
ଡ	ଡ̣	ଡ	ଡ୍	ଞ୍
ଣ	ଣ̣	ଣ	ଣ୍	ଞ୍
ତ	ତ̣	ତ	ତ୍	ଞ୍
ଥ	ଥ̣	ଥ	ଥ୍	ଞ୍
ଦ	ଦ̣	ଦ	ଦ୍	ଞ୍
ଧ	ଧ̣	ଧ	ଧ୍	ଞ୍
ନ	ନ̣	ନ	ନ୍	ଞ୍

BA_n BA_n

କ	କ̣	କ	କ୍	କ୍
---	----	---	----	----

WA_n WA_n

କ	କ̣	କ	କ୍	କ୍
---	----	---	----	----



ଘ	ଘ	ଘ	ଘ
ଙ	ଙ	ଙ	ଙ
ଚ	ଚ	ଚ	ଚ
ଢ	ଢ	ଢ	ଢ
ଡ	ଡ	ଡ	ଡ
ଣ	ଣ	ଣ	ଣ
ତ	ତ	ତ	ତ
ଥ	ଥ	ଥ	ଥ
ଦ	ଦ	ଦ	ଦ
ଧ	ଧ	ଧ	ଧ
ନ	ନ	ନ	ନ
ପ	ପ	ପ	ପ
ଫ	ଫ	ଫ	ଫ
ବ	ବ	ବ	ବ
ଭ	ଭ	ଭ	ଭ
ମ	ମ	ମ	ମ
ଯ	ଯ	ଯ	ଯ

Table - 2. Consonant signs

$$C_d + C \text{ (sign)} \rightarrow C.C_n$$

TA (Sign)

ତ	ତ	କ	କ
ଡ	ଡ	ଘ	ଘ
ଢ	ଢ	ଙ	ଙ
ଡ	ଡ	ଚ	ଚ
ଣ	ଣ	ଢ	ଢ

DDHA (Sign)

ଶ	ଶ	ଢ	ଢ
---	---	---	---

THA (Sign)

ନ	ନ	ଧ	ଧ
ପ	ପ	ଧ	ଧ

CHA (Sign)

ଶ	ଶ	ଞ	ଞ
---	---	---	---

BHA (Sign)

ମ	ମ	ଭ	ଭ
---	---	---	---

MA (Sign)

କ	କ	ମ	ମ
ଞ	ଞ	ମ	ମ
ଚ	ଚ	ମ	ମ
ଢ	ଢ	ମ	ମ

TA (Sign)

କ	କ	ତ	ତ
ଞ	ଞ	ତ	ତ
ଧ	ଧ	ତ	ତ
ଧ	ଧ	ତ	ତ

DDA (Sign)

ଶ	ଶ	ଢ	ଢ
---	---	---	---

YYA (Sign)

କ	କ	ୟ	ୟ
ଞ	ଞ	ୟ	ୟ
ଶ	ଶ	ୟ	ୟ
ଚ	ଚ	ୟ	ୟ

T.RA_{sub} (Sign)

ନ	ନ	ତ	ତ
ପ	ପ	ତ	ତ

NNA (Sign)

ଶ	ଶ	ଢ	ଢ
ଞ	ଞ	ଢ	ଢ

T.U_{vs} (Sign)

ଧ	ଧ	ଧ	ଧ
ନ	ନ	ଧ	ଧ

ତ and ଡ represented by ଚ
 ଞ and ଧ represented by ଢ
 ଚ and ଡ represented by ଢ
 ଢ represented by ଢ
 ମ represented by ଢ and ଢ
 ଶ represented by ଢ and ଢ
 ଢ represented by ଢ and ଢ



Note : ଏ and ଓ are two vowels. But when ଏ is positioned below ନ and ସ it represents ଢୁ . When ଓ is positioned below ଶ and ଷ it represents ଣ. When the same ଓ is positioned below ନ and ସ it represents ଢୁ .

Table - 3. Ligated conjuncts

A fully ligated conjunct, where the components are not distinct, is formed in the following manner. Wherever it is possible and is in vogue alternative representations of the ligated conjuncts have been shown within brackets.

	C_d	+	C_L	\rightarrow	L_n	
ଂ	କ	+	କ	=	କ୍ୱ	(ଂକ)
ଂ	ଗ	+	ଗ	=	କ୍ୱ	(ଂଗ)
ଂ	ଗ	+	ଗ	=	କ୍ୱ	(ଂଗ)
ଂ	ଘ	+	ଘ	=	କ୍ୱ	(ଂଘ)
ଂ	ଚ	+	ଚ	=	କ୍ୱ	(ଂଚ)
ଂ	ଜ	+	ଜ	=	କ୍ୱ	(ଂଜ)
ଂ	କ	+	କ	=	କ୍ୱ	(ଂକ)
ଂ	ନ	+	ନ	=	କ୍ୱ	(ଂନ)
ଂ	ଝ	+	ଝ	=	କ୍ୱ	(ଂଝ)
ଂ	ଟ	+	ଟ	=	କ୍ୱ	(ଂଟ)
ଂ	ଠ	+	ଠ	=	କ୍ୱ	(ଂଠ)
ଂ	ଡ	+	ଡ	=	କ୍ୱ	(ଂଡ)
ଂ	ଢ	+	ଢ	=	କ୍ୱ	(ଂଢ)
ଂ	ଣ	+	ଣ	=	କ୍ୱ	(ଂଣ)
ଂ	ତ	+	ତ	=	କ୍ୱ	(ଂତ)
ଂ	ଥ	+	ଥ	=	କ୍ୱ	(ଂଥ)
ଂ	ଦ	+	ଦ	=	କ୍ୱ	(ଂଦ)
ଂ	ଧ	+	ଧ	=	କ୍ୱ	(ଂଧ)
ଂ	ନ	+	ନ	=	କ୍ୱ	(ଂନ)
ଂ	ପ	+	ପ	=	କ୍ୱ	(ଂପ)

Table - 4

A diminutive form of C_n glyph is positioned below or attached to the lower part of the base glyph to form a conjunct. Alternative representations are placed within brackets

	C_d	+	C_L	\rightarrow	$C.C_n$
ଂ	କ	+	କ	=	କ୍ୱ
ଂ	ଖ	+	ଖ	=	କ୍ୱ (ଂଖ)
ଂ	ଗ	+	ଗ	=	କ୍ୱ (ଂଗ)
ଂ	ଘ	+	ଘ	=	କ୍ୱ (ଂଘ)
ଂ	ଚ	+	ଚ	=	କ୍ୱ (ଂଚ)
ଂ	ଝ	+	ଝ	=	କ୍ୱ (ଂଝ)
ଂ	ଟ	+	ଟ	=	କ୍ୱ (ଂଟ)
ଂ	ଠ	+	ଠ	=	କ୍ୱ (ଂଠ)
ଂ	ଡ	+	ଡ	=	କ୍ୱ (ଂଡ)
ଂ	ଢ	+	ଢ	=	କ୍ୱ (ଂଢ)
ଂ	ଣ	+	ଣ	=	କ୍ୱ (ଂଣ)
ଂ	ତ	+	ତ	=	କ୍ୱ (ଂତ)
ଂ	ଥ	+	ଥ	=	କ୍ୱ (ଂଥ)
ଂ	ଦ	+	ଦ	=	କ୍ୱ (ଂଦ)
ଂ	ଧ	+	ଧ	=	କ୍ୱ (ଂଧ)
ଂ	ନ	+	ନ	=	କ୍ୱ (ଂନ)
ଂ	ପ	+	ପ	=	କ୍ୱ (ଂପ)



କ	+	କ୍	=	କ୍
ଖ	+	ଖ୍	=	ଖ୍
ଗ	+	ଗ୍	=	ଗ୍
ଘ	+	ଘ୍	=	ଘ୍
ଙ	+	ଙ୍	=	ଙ୍
ଚ	+	ଚ୍	=	ଚ୍
ଛ	+	ଛ୍	=	ଛ୍
ଜ	+	ଜ୍	=	ଜ୍
ଝ	+	ଝ୍	=	ଝ୍
ଞ	+	ଞ୍	=	ଞ୍
ଟ	+	ଟ୍	=	ଟ୍
ଠ	+	ଠ୍	=	ଠ୍
ଡ	+	ଡ୍	=	ଡ୍
ଣ	+	ଣ୍	=	ଣ୍
ତ	+	ତ୍	=	ତ୍
ଥ	+	ଥ୍	=	ଥ୍
ଦ	+	ଦ୍	=	ଦ୍
ଧ	+	ଧ୍	=	ଧ୍
ନ	+	ନ୍	=	ନ୍
ପ	+	ପ୍	=	ପ୍
ଫ	+	ଫ୍	=	ଫ୍
ଭ	+	ଭ୍	=	ଭ୍
ଷ	+	ଷ୍	=	ଷ୍
ସ	+	ସ୍	=	ସ୍
ହ	+	ହ୍	=	ହ୍

ଶ + ଶ = ଶ୍ (ଶ is represented by ଶ୍)

ଷ + ଶ = ଷ୍ (ଶ is represented by ଷ୍)

Table - 5

Three consonants are put together to form the following conjuncts. Alternative representations have been shown within brackets.

- କ ଖ ଗ = କ୍ଖଗ୍
- ଚ ଛ ଜ = ଚ୍ଛଜ୍ (ଚ୍ଛ)
- ଚ ଛ ଜ ର = ଚ୍ଛଜ୍ର (ଚ୍ଛ)
- ଚ ଛ ଜ ଥ = ଚ୍ଛଜ୍ଥ (ଚ୍ଛ)
- ଚ ଛ ଜ ଦ = ଚ୍ଛଜ୍ଦ (ଚ୍ଛ)
- ଚ ଛ ଜ ଘ = ଚ୍ଛଜ୍ଘ (ଚ୍ଛ)
- ଚ ଛ ଜ ଟ = ଚ୍ଛଜ୍ଟ (ଚ୍ଛ)
- ଚ ଛ ଜ ଠ = ଚ୍ଛଜ୍ଠ (ଚ୍ଛ)
- ଚ ଛ ଜ ଡ = ଚ୍ଛଜ୍ଡ (ଚ୍ଛ)
- ଚ ଛ ଜ ଣ = ଚ୍ଛଜ୍ଣ (ଚ୍ଛ)

- କ ଚ = କ୍ଚ୍ (କ୍ଚ)
- କ ଛ = କ୍ଛ୍ (କ୍ଛ)
- କ ଶ = କ୍ଶ୍ (କ୍ଶ)
- କ ଚ = କ୍ଚ୍ (କ୍ଚ)
- କ ଘ = କ୍ଘ୍ (କ୍ଘ)
- କ ଯ = କ୍ଯ୍ (କ୍ଯ)
- କ ର = କ୍ର୍ (କ୍ର୍)
- କ ଢ = କ୍ଢ୍ (କ୍ଢ)
- କ ଣ = କ୍ଣ୍ (କ୍ଣ)

Four consonants are put together to form the following conjuncts

- କ ଚ ଛ ଜ୍ = କ୍ଚ୍ଛଜ୍ (କ୍ଚ୍ଛ)
- କ ଚ ଛ ଠ = କ୍ଚ୍ଛଠ୍ (କ୍ଚ୍ଛ)
- କ ଚ ଛ ଢ = କ୍ଚ୍ଛଢ୍ (କ୍ଚ୍ଛ)
- କ ଚ ଛ ଣ = କ୍ଚ୍ଛଞ୍ (କ୍ଚ୍ଛ)

(Courtesy : Dr. A. K. Pujari, CEO
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B. Oriya Design Guide

Name of the Language

Oriya is one of the 18 officially recognised languages of India. Although spelt as, “Oriya”, it is invariably pronounced as ODDIAA.

Description of the Oriya Language

Oriya shares the same phonetic character set and its behaviour with Sanskrit. Oriya has absorbed influence from other neighboring languages as also from Arabic, Persian, Portuguese and English. It has enriched its vocabulary with numerous words from several *adivasi languages*. It is written from left to right and top to bottom. A limited number of ligatures are possible since all the consonants cannot be combined with all others. Vowels can either be independent or dependent upon a consonant or consonant cluster. A large number of “consonant + vowel” and “consonant + consonant” combinations have various alternative representations. A standard is perceived to be evolving.

History of Oriya

The distinctive features of Oriya language can be traced back to the 10th century. Stone engravings, copper plates, palm-leaf manuscripts testify to its antiquity. It has been a carrier of vibrant literature, a medium of instruction and a means of communication through the centuries.

Constituents of Oriya Graphemes

All the graphemes representing Oriya vowels and consonants are based on the circle and a vertical or slanted line. The lower part of a grapheme is its identifier. (Details have been provided in Appendix-1)

Consonant Letters

The consonant letters in Oriya represent a single consonant sound with an inherent vowel A.

There are five “vargas” (groups) of consonants, each named after the first item of the group. The first and third items of the group are non-aspirated, whereas second and fourth items are aspirated. The fifth item of each group is a nasal consonant, which can

combine only with the other four items of the same group to form nasal consonants.

There are 10 non-varga consonants. Oriya maintains a distinction between YA (OB2F) and YYA (OB5F). DDA and DDHA are derived from DDA (OB21) and DDHA (OB22) by putting the nukta (OB3C) below these.

Some consonant letters are rendered in their half-forms in making conjuncts. Unlike in some other languages these consonants in Oriya are horizontally divided into two parts. The lower part is positioned below a relevant consonant to form a conjunct. Although just half-forms in appearance, they function as full consonants with the inherent vowel A in pronunciation. In effect, the consonants to which these half-forms are attached lose their inherent vowel A.

All consonant letters are depicted in the same shape in their base forms

Independent Vowel Letters

There are separate symbols for all the vowels in Oriya script. These are pronounced independently.

Dependent Vowel Signs

In order to inflect a consonant with a vowel, a vowel sign is attached at the consonant. All the vowel letters, excepting A, are represented by certain graphic signs. These signs are positioned above, below, to the right or to the left of the consonant to which these are applied.

Halant

The halant in Oriya is used as the vowel omission sign. It serves to cancel the inherent vowel of the consonant to which it is applied. It also functions as a combining character. Application of a halant sign makes a consonant a pure consonant. This sign is placed below the base grapheme. Obviously no other sign can be attached to a consonant letter having this sign below it.

Consonant Conjuncts

Consonant conjuncts are formed by combining up to four consonants without their intervening vowels. One or more pure consonants are attached to other



pure consonants. The last consonant retains the inherent vowel A.

The following types of conjuncts are available in Oriya.

1. The lower part of horizontally divided consonant letter is attached to a whole consonant. The whole consonant is presented in its base form, but pronounced as a pure consonant.
2. A diminutive form of a consonant is attached below a whole consonant, which is treated as a pure consonant in pronunciation. The diminutive consonant retains the inherent vowel A.
3. A fully ligated conjunct is formed, where the constituents are not distinct or identifiable.
4. Ten consonants are represented by certain graphic consonant signs, which do not correspond visually to the consonants they represent.

Excepting YYA which is placed to the right of the base consonant, the other nine consonant signs are placed below the base consonants.

5. The conjunct ଢ represented by a diminutive ଏ is placed below ନ and ଯ to form ଢ and ଢ . However alternatively these can be rendered as ଢ and ଢ .
6. The vowel inflected ଢ represented by diminutive ଣ is placed below ନ and ଯ to form ଣ and ଣ . However alternatively these can be rendered as ଣ and ଣ .
7. When a pure RA is attached to a whole consonant it is placed above to the right of that consonant. This is called “repha” in Oriya.
8. When a pure consonant is attached to RA, RA retains its inherent vowel A. It is called “ra-phalaa” in Oriya.

Nukta

Nukta is placed only below DDA and DDHA to suggest a variant pronunciation.

Anuswar

Anuswar indicates one of the five nasal sounds in Oriya. Whenever an anuswar comes before a consonant constituting any of the five vargas, it

represents the fifth item, i.e. the nasal consonant belonging to that varga. It represents a different nasal sound when placed after any of the ten non-varga consonants.

Chandrabindu

Chandrabindu, placed above to the right of a vowel letter, a consonant letter or vowel-inflected consonant indicates its nasalization.

Visarga

Visarga indicates the addition of a sound similar to /h/. It is attached to the right side of a vowel letter, a consonant letter or a vowel-inflected consonant.

Avagraha

Known as khanda-akaara, in Oriya this sign is used in the formation a limited number of compound words formed according to rules of Sanskrit grammar.

Numerals

The Oriya script has its own numerals.

Punctuation marks

All punctuation marks in Oriya, except the poorna chheda, have been borrowed from English.

“Deceased” or “dead” mark

A typical mark (✓) is used before names of persons who are dead. This is known as “swargata chinna” in Oriya.

Bi-functional signs

There is a small number consonant signs which represent more than one consonant.

DDA and TA are represented by ୠ (example : ୠ, ୠ)

CHA and THA are represented by ୡ (example : ୡ, ୡ)

On the other hand there are some consonants, which are represented by more than one sign.

MA is represented by ୢ and ୣ (example : ୢ, ୣ)

NNA is represented by a diminutive ୤ and a diminutive NNA (example : ୤, ୤)

E and O are two vowel letters as such. But when E is placed below NA and SA it represents TRA . When O



is placed below NNA and SSA it represents NNA. When the same O is placed below NA and SA it stands for TU.

Appendix - 1

Constituents of Oriya Graphemes

All the graphemes representing Oriya vowels and consonants are based on the circle and a vertical or slanted line. The lower part of a grapheme is its identifier.

କ ଚ ଛ ଜ ଝ ଞ ଡ ଢ ନ ବ ଦ

All the above graphemes have arch-like tops.

ଖ ଗ ଘ ଣ ଷ ମ ଯ ସ ଶ

All the above graphemes have vertical lines on right.

The following table shows the ten constituents of the whole Oriya alphabet.

1. o..... ଠ ଡ ଛ ଗ ଘ ଙ ଣ ଥ
2. oo.....କ ଚ ଛ ଜ ଝ ଞ ଡ ଢ ଢ ଢ ଢ
3. ^ ଚ ଛ ଜ କ ନ ଡ ଢ ଢ ବ ନ ଦ
4. m ଥ ଥା ନ ନ
5. c ଚ ଚ୍ଚ ଫ ଫ ଦ ହ ବ
6. w ଘ ଘ ଘ ଘ ଘ ଘ ଘ
7. | ଖ ଗ ଘ ଣ ଥ ଧ ଢ ଫ ମ ଯ ଋ ଌ ଶ ଷ ସ
8. \ ଧ
9. / ଡ ଢ ଢ ଢ ଢ ଏ ଐ ଋ ଌ ଶ ମ ସ ନ ନ
10. ଓ ଊ ଓ ଋ ଌ ଌ ଌ

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4.3.3 Typical Colloquial Sentences in Oriya

GREETING

- ▶ Hello
ଶୁଣିବେ
ଶୁଣିବେ
sunibe
- ▶ Good Morning
ସୁଗୁରାତ
ସୁପ୍ରଭାତ
shuprabhAta
- ▶ Good Afternoon
ସୁଭସନ୍ଧ୍ୟା
ସୁଭସନ୍ଧ୍ୟା
shubhashandhA
- ▶ Good Night
ସୁଭରାତ୍ର
ସୁଭରାତ୍ର
shubharAtra
- ▶ Good Bye
ସୁବିଦାୟ
ସୁବିଦାୟ
shubidAy
- ▶ Thanks
ଧନ୍ୟବାଦ
ଧନ୍ୟବାଦ
dhanyabAda
- ▶ How are you
ଆମ୍ଭେ କେମିତି ଅଛନ୍ତି
ଆପଣ କେମିତି ଅଛନ୍ତି
aapana kemiti achhanti
- ▶ I am fine thank you
ମୁଁ ଭଲ ଅଛି, ଧନ୍ୟବାଦ
ମୁଁ ଭଲ ଅଛି, ଧନ୍ୟବାଦ
mu.M bhala achhi
- ▶ Sorry
ମୁଁ ଦୁଃଖିତ
ମୁଁ ଦୁଃଖିତ
mu.M du:khita



WEATHER

- It is cold
ବର୍ତ୍ତମାନ ଥଣ୍ଡା ଗୁଡ଼ିଛି
ବର୍ତ୍ତମାନ ଥଣ୍ଡା ପଡ଼ିଛି
BarttamAna thaNDA padichhi
- It is cool outside
ବାହାରେ ଥଣ୍ଡା ଅଛି
ବାହାରେ ଥଣ୍ଡା ଅଛି
BAhAre thaNDA achhi
- It is hot
ଗରମ ହେଉଛି
ଗରମ ହେଉଛି
garama heuchhi
- It is raining
ବର୍ଷା ହେଉଛି
ବର୍ଷା ହେଉଛି
barShA heuchhi

GENERAL

- What is your name?
ତୁମର ନାମ କଣ ?
ତୁମର ନାମ କଣ ?
tumara nAma ka'Na ?
- My name is Ranjan
ମୋର ନାମ ରଞ୍ଜନ
ମୋର ନାମ ରଞ୍ଜନ
mora nAma rMjana
- Where do you live?
ତୁମେ କେଉଁଠି ବାସକର ?
ତୁମେ କେଉଁଠି ବାସକର ?
tume keu.Mthi bAsakara ?
- I live near Ghantaghar
ମୁଁ ଘଣ୍ଟାଘର ନିକଟରେ ବାସକରେ
ମୁଁ ଘଣ୍ଟାଘର ନିକଟରେ ବାସକରେ
mu.M ghanTAgghara nikaTare bAsakare
- How old are you?
ତୁମର ବୟସ କେତେ ?
ତୁମର ବୟସ କେତେ ?
tumara baYasa kete ?

- That building is tall
ସେହି ଗୁମ୍ଫାଦଳି ଉଚ୍ଚ ଅଟେ
ସେହି ପ୍ରାସାଦଟି ଉଚ୍ଚ ଅଟେ
sehi prAsAdaTi uchcha aTe
- She is beautiful
ସେ ସୁନ୍ଦରୀ ଅଟନ୍ତି
ସେ ସୁନ୍ଦରୀ ଅଟନ୍ତି
se sundarI aTanti
- I like Bengali sweets
ମୁଁ ବଂଗାଳୀ ମିଷ୍ଟାନ୍ନ ଗୁମ୍ଫା କରେ
ମୁଁ ବଂଗାଳୀ ମିଷ୍ଟାନ୍ନ ପସନ୍ଦ କରେ
mu.M baMgALI miShTAnna pasanda kare
- I love birds
ମୁଁ ପକ୍ଷୀମାନଙ୍କୁ ଭଲପାଏ
ମୁଁ ପକ୍ଷୀମାନଙ୍କୁ ଭଲପାଏ
mu.M pakShImAnaNgku bhalapAe
- Where is Railway station?
ରେଳଷ୍ଟେସନ କେଉଁଠି ?
ରେଳଷ୍ଟେସନ କେଉଁଠି ?
reLaShTesan keu.Mthi ?
- How far is the Bus Terminal from here?
ବସ ଉତ୍ତରୀ ଧରା କେତେ ଦୂର ?
ବସ ରହଣି ଏଠାରୁ କେତେ ଦୂର ?
bas rahaNi eThAru kete dUra ?
- How long will it take to reach the Airport?
ବିମାନବନ୍ଦରରେ ଗୁମ୍ଫାକୁ କେତେ ସମୟ ଲାଗିବ ?
ବିମାନବନ୍ଦରରେ ପହଞ୍ଚିବାକୁ କେତେ ସମୟ ଲାଗିବ ?
bimAnabandarare pahaNjchibAku kete samaYa lAgiba ?
- Is Mr. Raghunath there?
ଶ୍ରୀ ରଘୁନାଥ ସେଠାରେ ଅଛନ୍ତି କି ?
ଶ୍ରୀ ରଘୁନାଥ ସେଠାରେ ଅଛନ୍ତି କି ?
shri raghunAtha seThAre achhanti ki ?
- Please tell him to call back as soon as he is free
ଦୟା କରି ତାଙ୍କୁ କୁହ କି ସେ ଅବସର ମିଳିଲେ ମୋତେ ଦୂରଭାଷ
ମାଧ୍ୟମରେ ଡାକିବେ
ଦୟା କରି ତାଙ୍କୁ କୁହ କି ସେ ଅବସର ମିଳିଲେ ମୋତେ
ଦୂରଭାଷ ମାଧ୍ୟମରେ ଡାକିବେ
daya kari taNgku kuha ki se abasara miLile mote durabhASha maDhYamare Dakibe



► How much will it cost?

ଏହାର ଦାମ୍ କେତେ ?
एहार दाम् केते ?
ehAra dAm kete ?

► Excuse me

କ୍ଷମା କରିବେ
क्षमा करिबे
kShaMa karibe

► From which Platform can I get the train for Chandigarh?

କେଉଁ ପ୍ଲାଟଫର୍ମରୁ ମୁଁ ଚଣ୍ଡୀଗଡ଼କୁ ରେଳଗାଡ଼ି ଗୁଲାଇବି ?
केउँ प्लाट्फर्मरु मुँ चण्डीगडकु रेळगाडि पाइबि ?
keu.M pLATfarmaru mu.M chaNDigadaku
reLagADi pAibi ?

► Does this train stop at Aligarh?

ଏହି ରେଳଗାଡ଼ିଟି ଅଲୀଗଡ଼ଠାରେ ରହିବ କି ?
एहि रेळगाडिडि अलीगड्ठारे रहिब कि ?
ehi reLagADiTī alIgaDThare rahiba ki ?

► How many kids do you have?

ଆପଣଙ୍କର କେତେଜଣ ସନ୍ତାନସନ୍ତତି ଅଛନ୍ତି ?
आपणङ्कर केतेजण सन्तानसन्तति अछन्ति ?
ApaNaNgkara ketejaNa santAnsantati achhanti?

► This gift is wonderful

ଏହି ଉପହାରଟି ଚମତ୍କାର ହୋଇଛି
एहि उपहारटि चमत्कार होइछि
ehi upahAraTi chatkAra hoichhi

► It is really pretty

ଏଇଟି ଗୁଲୁଗୁଲୁରେ ସୁନ୍ଦର ଅଟେ
एइटि प्रकृतरे सुन्दर अटे
eiTi prakHRitare sundara aTe

► Food is delicious

ଖାଦ୍ୟଟି ସ୍ୱାଦ ଯୁକ୍ତ ଅଟେ
खाद्यटि स्वाद युक्त अटे
khAdYaTi sbAda Jukta ate

► Congratulations

ଶୁଭେଚ୍ଛା
शुभेच्छा
shubhechchhA

► You look lovely

ତୁମେ ସୁନ୍ଦର ଦିଶୁଛ
तुमे सुन्दर दिशुछ
tume sundara dishuchha

► Wish you happy new year

ନବବର୍ଷର ଶୁଭେଚ୍ଛା
नववर्षर शुभेच्छा
subhakAmanA karuchhi

► I wish you all the happiness

ମୁଁ ଆପଣଙ୍କର ସୁଖକାମନା କରୁଛି
मुँ आपणङ्कर सुभकामना करुछि
nababarShara shubhechchhA mu.M
ApaNaNgkara

► Congratulations on your marriage

ବିବାହ ଉତ୍ସାହେ ଶୁଭେଚ୍ଛା
बिबाह उपलक्षे शुभेच्छा
bibAha upalakShe shubhechchhA

► Keep your eyes wide open before marriage and half- shut afterwards

ଦେଖିବାହିଁ ବିବାହ କର ଏବଂ ପରେ ସବୁକଥା ଚଳାଇ ନିଅ ।
देखिबाहिँ बिबाह कर एवं परे सबुकथा चळाइ
निअ ।
dekhichAhi.M bibAha kara ebM pare
sabukathA chaLai nia

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