

UC Berkeley

Proposals from the Script Encoding Initiative

Title

Proposal to Encode Indic Siyaq Numbers in Unicode

Permalink

<https://escholarship.org/uc/item/9dj82014>

Author

Pandey, Anshuman

Publication Date

2015-11-05

Peer reviewed

Proposal to Encode Indic Siyaq Numbers in Unicode

Anshuman Pandey
Department of Linguistics
University of California, Berkeley
Berkeley, California, U.S.A.
anshuman.pandey@berkeley.edu

November 5, 2015

1 Introduction

This is a proposal to encode Indic Siyaq Numbers in the Unicode standard. A description of the typology of the numbers and the encoding model have been presented in the following documents:

- L2/07-414 “Proposal to Encode Siyaq Numerals”
- L2/09-166 “Raqm Numerals: Towards a Model for Encoding Numerals of the Siyaq Systems”
- L2/11-270 “Preliminary Proposal to Encode Indic Siyaq Numbers in the UCS”

Apart from editorial changes and the inclusion of new figures, the major changes from earlier versions are:

- Renaming of forms of primary numbers used in compounds from ‘alternate’ to ‘prefixed’ (see § 4.3).
- Addition of true alternate forms of some numbers (see § 4.2, 4.8, 4.10).
- Expanded discussion of the orthography of ‘lakhs’ and ‘crores’.

Proposals to encode characters of three other Siyaq systems have been submitted:

- L2/15-066 “Proposal to Encode Diwani Siyaq Numbers in Unicode”
- L2/15-072 “Proposal to Encode Ottoman Siyaq Numbers in Unicode”
- L2/15-122 “Proposal to Encode Persian Siyaq Numbers in Unicode”

2 Background

The Siyaq (Arabic *سياق* *siyāq* ‘order’) numerical notation system is known in India and other parts of South Asia as *raqm* or *rakam* (Arabic *رقم* *raqm* ‘account’). Similar to other Siyaq traditions, the Indic Siyaq Numbers are a specialized subset of the Arabic script that was used for accounting and in general for recording numbers. The basic Indic Siyaq Numbers are stylized monograms of the Arabic names for numbers. The numbers for large decimal orders, however, are derived from words of Indic languages. The period during which Siyaq was introduced in India is difficult to determine, but the system was in common usage under the Mughals by the 17th century and it remained in usage into the middle of the 20th century.

While the majority of documents containing Siyaq are hand-written, there is a rare instance of Indic Siyaq Numbers in print. A work by Francis Gladwin titled *A Compendious System of Bengal Revenue Accounts* (Calcutta: Manuel Cantopher, 1790) is perhaps the first book in which Siyaq is printed using metal types. In the preface, Gladwin writes “that the following compendium of Siyak Accounts is the first specimen of the sort that has yet appeared in print, the types having been made purposely for it” (p. vii). A specimen of Indic Siyaq Numbers printed using Gladwin’s metal fonts is given in figure 2. Indic Siyaq Numbers also appear on currency notes and stamp papers. Charts of the numbers were included in various grammar books of Urdu as recently as 1999.

There are two major styles of Siyaq used in India, the northern and ‘Deccani’ or southern style. In general, the number forms and notation system of the two are identical. Minor points of difference lie in the orthography for the thousands, ten thousands, and lakhs.

3 Script Details

Block name The proposed characters belong to a block named ‘Indic Siyaq Numbers’. The name ‘Raqm’ is specified as an alias in the names list.

Character repertoire and representative glyphs The character repertoire and representative glyphs are based upon Siyaq forms used throughout India and greater South Asia, as attested in written and printed sources. The numbers are quite uniform. The digitized glyphs used here were developed by the proposal author, with some glyphic elements sourced from the Jameel Noori Nastaleeq font.

Structure Indic Siyaq Numbers represent units of a decimal positional system. The notation system is additive, that is, the numeric value of a Siyaq number sequence is the sum of all characters. There is no character for zero; it is inherently represented in the distinct numbers for the various decimal orders. There are distinctive numbers for the primary units, tens, hundreds, thousands, and ten thousands. The hundred thousands, millions, and higher orders are represented using unit marks and numbers of smaller orders.

Directionality Indic Siyaq Numbers are written right-to-left in the regular manner of the Arabic script. The orientation differs from the Arabic-Indic digits, which are written left-to-right.

Ordering The ordering of Indic Siyaq Numbers is visual, which reflects the method of expressing numbers in Arabic. In a Siyaq sequence the largest number occurs first and smaller units follow in order to the left. An exception occurs for compound numbers of the tens and primary units; these are written transposed, with a ‘prefixed’ form of the primary unit placed before the larger number.

Positioning and orientation In a numerical sequence the largest number occurs first and smaller units follow in order to the left. If a number has a horizontal stroke that extends leftward, then the following number is generally raised and positioned above its stroke. This stack is oriented in a south-east to north-west direction. Such positioning has the effect of setting Indic Siyaq Numbers slightly apart from surrounding content in running text, which is typically Urdu or Persian. The baseline for Siyaq numbers ascends right to left, while the baseline for Urdu in the *nastalīq* style descends from right to left.

Script environment Indic Siyaq Numbers are generally used within an Arabic script environment and within Urdu and Persian linguistic contexts. The numbers may also occur in multilingual environments alongside other scripts. Arabic-Indic digits may be used within Siyaq sequences, particularly for the representation of small currency units (see § 5.10).

Characters not proposed There are signs for agricultural units. However, materials containing these characters have not yet been made available to the proposal author. These signs may be proposed for encoding at a later date.

4 Characters Proposed

4.1 Primary numbers

The following 9 characters are used for representing the primary units:

١	INDIC SIYAQ NUMBER ONE
٢	INDIC SIYAQ NUMBER TWO
٣	INDIC SIYAQ NUMBER THREE
٤	INDIC SIYAQ NUMBER FOUR
٥	INDIC SIYAQ NUMBER FIVE
٦	INDIC SIYAQ NUMBER SIX
٧	INDIC SIYAQ NUMBER SEVEN
٨	INDIC SIYAQ NUMBER EIGHT
٩	INDIC SIYAQ NUMBER NINE

The number ٢ two has the glyphic variant ٢.

4.2 Alternate forms of the primary numbers

The following forms of the primary numbers are often used in place of or alongside the regular forms. They are proposed for encoding on account of their distinctive shapes and concurrent usage with the regular forms:

١	INDIC SIYAQ NUMBER ALTERNATE ONE
٢	INDIC SIYAQ NUMBER ALTERNATE TWO

The ALTERNATE TWO has the glyphic variant ٢.

4.3 Prefixed forms of the primary numbers

The following 9 characters are used for the primary numbers in compounds:

١	INDIC SIYAQ NUMBER PREFIXED ONE
٢	INDIC SIYAQ NUMBER PREFIXED TWO

د	INDIC SIYAQ NUMBER PREFIXED THREE
للو	INDIC SIYAQ NUMBER PREFIXED FOUR
ح	INDIC SIYAQ NUMBER PREFIXED FIVE
ـ	INDIC SIYAQ NUMBER PREFIXED SIX
مو	INDIC SIYAQ NUMBER PREFIXED SEVEN
م	INDIC SIYAQ NUMBER PREFIXED EIGHT
لو	INDIC SIYAQ NUMBER PREFIXED NINE

The ‘prefixed’ forms are not glyphic variants. They are used in place of the regular primary number in compound numbers with the tens, ten thousands, tens of lakhs (millions), and crores (tens of millions). They are named ‘prefixed’ because they are written before the larger number and they are not used independently. A comparison of the regular, alternate, and prefixed forms is shown below:

	ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	EIGHT	NINE
Regular	عدم	عدا	ے	للو	ح	ے	مو	مے	لو
Alternate	عہ	عا	—	—	—	—	—	—	—
Prefixed	لہ	ع	د	للو	ح	ـ	مو	م	لو

4.4 Tens

The following 9 characters are used for representing the tens:

عہ	INDIC SIYAQ NUMBER TEN
عہ	INDIC SIYAQ NUMBER TWENTY
سہ	INDIC SIYAQ NUMBER THIRTY
للوہ	INDIC SIYAQ NUMBER FORTY
حہ	INDIC SIYAQ NUMBER FIFTY
سہ	INDIC SIYAQ NUMBER SIXTY
موہ	INDIC SIYAQ NUMBER SEVENTY
لہ	INDIC SIYAQ NUMBER EIGHTY
لوہ	INDIC SIYAQ NUMBER NINETY

4.5 Hundreds

The following 9 characters are used for representing the hundreds:

١٠٠	INDIC SIYAQ NUMBER ONE HUNDRED
٢٠٠	INDIC SIYAQ NUMBER TWO HUNDRED
٣٠٠	INDIC SIYAQ NUMBER THREE HUNDRED
٤٠٠	INDIC SIYAQ NUMBER FOUR HUNDRED
٥٠٠	INDIC SIYAQ NUMBER FIVE HUNDRED
٦٠٠	INDIC SIYAQ NUMBER SIX HUNDRED
٧٠٠	INDIC SIYAQ NUMBER SEVEN HUNDRED
٨٠٠	INDIC SIYAQ NUMBER EIGHT HUNDRED
٩٠٠	INDIC SIYAQ NUMBER NINE HUNDRED

4.6 Thousands

The following 9 characters are used for representing the thousands:

١٠٠٠	INDIC SIYAQ NUMBER ONE THOUSAND
٢٠٠٠	INDIC SIYAQ NUMBER TWO THOUSAND
٣٠٠٠	INDIC SIYAQ NUMBER THREE THOUSAND
٤٠٠٠	INDIC SIYAQ NUMBER FOUR THOUSAND
٥٠٠٠	INDIC SIYAQ NUMBER FIVE THOUSAND
٦٠٠٠	INDIC SIYAQ NUMBER SIX THOUSAND
٧٠٠٠	INDIC SIYAQ NUMBER SEVEN THOUSAND
٨٠٠٠	INDIC SIYAQ NUMBER EIGHT THOUSAND
٩٠٠٠	INDIC SIYAQ NUMBER NINE THOUSAND

4.7 Ten Thousands

The following 9 characters are used for representing the ten thousands:

١٠٠٠٠	INDIC SIYAQ NUMBER TEN THOUSAND
٢٠٠٠٠	INDIC SIYAQ NUMBER TWENTY THOUSAND

—	INDIC SIYAQ NUMBER THIRTY THOUSAND
للو	INDIC SIYAQ NUMBER FORTY THOUSAND
ح	INDIC SIYAQ NUMBER FIFTY THOUSAND
—	INDIC SIYAQ NUMBER SIXTY THOUSAND
مو	INDIC SIYAQ NUMBER SEVENTY THOUSAND
ل	INDIC SIYAQ NUMBER EIGHTY THOUSAND
لو	INDIC SIYAQ NUMBER NINETY THOUSAND

The ten thousands are modified forms of the tens that possess horizontal terminals instead of loops. On account of this structure, six numbers of this order resemble prefixed forms of the primary numbers:

	1	2	3	4	5	6	7	8	9
Ten thousands	ع	ع	د	للو	ح	—	مو	ل	لو
Prefixed forms of primary numbers	له	ع	د	للو	ح	—	مو	د	لو

The shapes of TEN THOUSAND, TWENTY THOUSAND, and EIGHTY THOUSAND differ from the corresponding PREFIXED ONE, PREFIXED TWO, and PREFIXED EIGHT. The difference between similar characters of the two sets lies in the length of the horizontal stroke. Apart from this graphical difference, the respective sets can be identified through context.

4.8 Alternate form of ten thousand

The following character is also used for representing ten thousand:

ع	INDIC SIYAQ NUMBER ALTERNATE TEN THOUSAND
---	---

Its form is based upon the pattern for the 2–9 thousands, ie. —ع TWO THOUSAND, —م THREE THOUSAND ... —ل NINE THOUSAND, —ع ALTERNATE TEN THOUSAND. It is proposed for encoding as a separate character on account of its distinctive shape and concurrent usage with the regular form.

4.9 Lakh (hundred thousand)

The following 3 characters are used for representing the hundred thousands:

لکھہ	INDIC SIYAQ NUMBER LAKH
لکھان	INDIC SIYAQ NUMBER LAKHAN
لک	INDIC SIYAQ LAKH MARK

The لکھہ LAKH is derived from the Hindi word लाख *lākh* “one hundred thousand”. The لکھان LAKHAN “two hundred thousand” is formed by adding the Persian dual suffix *-an* to *lakh*: लाखन *lākhan*. The لک LAKH MARK is a contraction of لکھہ LAKH that is used for writing 3 lakh (300,000) to 90 lakh (9,000,000). While these characters may be represented using sequences of their constituent Arabic letters, they are proposed as atomic characters because they possess numerical values that cannot be obtained from sequences.

4.10 Alternate form of the lakh mark

للس	INDIC SIYAQ ALTERNATE LAKH MARK
-----	---------------------------------

The للس ALTERNATE LAKH MARK is used in the Deccani style in place of لک LAKH MARK for writing all multiples of lakh (see figures 9 and 10). The difference between للس and لک is the absence of the diagonal stroke above the letter ک *kaf* in the former, which is placed across the horizontal stroke instead. The form of the ALTERNATE LAKH MARK may be based upon the use of the Arabic style ك *kaf* in writing لك *lak(h)*, instead of the Urdu ک *kaf*. It is proposed for encoding as a separate character on account of its distinctive usage.

4.11 Crore (tens of million)

The following 2 characters are used for representing crores, or tens of millions:

کروڑ	INDIC SIYAQ NUMBER KAROR
کروڑان	INDIC SIYAQ NUMBER KARORAN

The کروڑ KAROR is derived from the Hindi करोड़ *karor* “ten million”. The کروڑان KARORAN “twenty million” is formed using the same principle as لکھان LAKHAN. The کروڑ KAROR is used as a unit mark for 30–90 crores. These characters are encoded atomically because their values cannot be obtained from sequences of their constituent Arabic letters.

4.12 Placeholder

The following character is used for indicating the end of a numeric sequence:

؁	INDIC SIYAQ PLACEHOLDER
---	-------------------------

It has the variant form ٴ. The sign is commonly used with numbers that have a horizontal stroke, such as the thousands and ten thousands, when they occur in isolation in order to prevent forgery as the empty space above the horizontal stroke provides an opportunity for the unscrupulous insertion of additional numbers.

4.13 Fractions

There are 3 fraction signs:

- ¼ INDIC SIYAQ FRACTION ONE QUARTER
- ½ INDIC SIYAQ FRACTION ONE HALF
- ¾ INDIC SIYAQ FRACTION THREE QUARTERS

These fraction signs are rudimentary shapes that resemble existing characters in the Arabic block, such as ۰ U+0660 ARABIC-INDIC DIGIT ZERO and ۰ U+06F0 EXTENDED ARABIC-INDIC DIGIT ZERO, and - U+06D4 ARABIC FULL STOP; as well as generic punctuation such as ۰ U+00B7 MIDDLE DOT and - U+002D HYPHEN-MINUS. However, the semantics of the Indic Siyaq fraction signs differs from those of characters that are visually similar.

4.14 Currency mark

There is 1 currency mark:

- ₹ INDIC SIYAQ RUPEE MARK

This RUPEE MARK resembles existing Arabic characters, such as ۰ U+060D ARABIC DATE SIGN, currency signs in other scripts, such as ۰ U+09F4 BENGALI CURRENCY NUMERATOR ONE, and various other characters, such as / U+002F SOLIDUS.

5 Orthography

The manner of representing numbers in Indic Siyaq is described below. The examples contain three columns: the left is the numeric value; the center is the Indic Siyaq representation from right-to-left; the right is the set of characters used for producing the numeric sequence in encoded text. The order of the characters in the right column is left-to-right, but this directionality is intended only to indicate the input sequence of the characters, eg. the left-most character is the first one to be input.

5	۵	<۵ FIVE>
50	۵۰	<۵۰ FIFTY>
55	۵۵	<۵۵ PREFIXED FIVE, ۵۰ FIFTY>
500	۵۰۰	<۵۰۰ FIVE HUNDRED>
505	۵۰۵	<۵۰۵ FIVE HUNDRED, ۵ FIVE>

510	حما ع	<حما FIVE HUNDRED, ع TEN>
515	حما ع ع	<حما FIVE HUNDRED, ح PREFIXED FIVE, ع TEN>
5,000	حم	<حم FIVE THOUSAND>
5,000	حم ء	<حم FIVE THOUSAND, ء PLACEHOLDER>
5,000	ح ال	<ح FIVE, ال ONE THOUSAND>
5,005	حم ح	<حم FIVE THOUSAND, ح FIVE>
5,100	حما	<حم FIVE THOUSAND, ما ONE HUNDRED>
50,000	ح	<ح FIFTY THOUSAND>
50,000	ح ال	<ح FIFTY THOUSAND, ال ONE THOUSAND>
50,000	ح ء	<ح FIFTY THOUSAND, ء PLACEHOLDER>
50,005	ح ح	<ح FIFTY THOUSAND, ح FIVE>
50,550	ح ح ح	<ح FIFTY THOUSAND, ح FIVE HUNDRED, ح FIFTY>
55,000	ح	<ح PREFIXED FIVE, ح FIFTY THOUSAND>
55,000	ح ال	<ح PREFIXED FIVE, ح FIFTY THOUSAND, ال ONE THOUSAND>
55,005	ح ح ح	<ح PREFIXED FIVE, ح FIFTY THOUSAND, ح FIVE>
5,00,000	ح لک	<ح FIVE, لک LAKH MARK>
5,00,000	ح لل	<ح FIVE, لل ALTERNATE LAKH MARK>

5,05,505	٥ لک ٥٥٥	< ٥ FIVE, لک LAKH MARK, ٥٥٥ FIVE THOUSAND, ٥٥٥ FIVE HUNDRED, ٥ FIVE >
5,55,555	٥ لک ٥٥٥٥	< ٥ FIVE, لک LAKH MARK, ٥ PREFIXED FIVE, ٥٥٥٥ FIFTY THOUSAND, ٥٥٥٥ FIVE HUNDRED, ٥ PREFIXED FIVE, ٥٥ FIFTY >
50,00,000	٥٥ لک	< ٥٥ FIFTY, لک LAKH MARK >
50,00,000	٥٥ لک	< ٥٥ FIFTY THOUSAND, لک LAKH MARK >
50,00,000	٥٥ لک	< ٥٥ FIFTY, لک ALTERNATE LAKH MARK >
50,00,000	٥٥ لک	< ٥٥ FIFTY THOUSAND, لک ALTERNATE LAKH MARK >
55,00,000	٥٥ لک	< ٥٥ PREFIXED FIVE, ٥٥ FIFTY, لک LAKH MARK >
55,00,000	٥٥ لک	< ٥٥ PREFIXED FIVE, ٥٥ FIFTY THOUSAND, لک LAKH MARK >
5,00,00,000	٥٥ کروڑ	< ٥٥ FIVE, کروڑ KAROR >
50,00,00,000	٥٥ کروڑ	< ٥٥ FIFTY, کروڑ KAROR >
50,00,00,000	٥٥ کروڑ	< ٥٥ FIFTY THOUSAND, کروڑ KAROR >

5.1 Primary numbers in compound with tens and ten thousands

For primary numbers in compounds containing the tens and ten thousands, the primary unit and the larger number are transposed, with the primary unit placed before the larger number. Below are representations for 11–19. The pattern is the same for 21–99.

10	١٠	< ١٠ TEN >
11	١١	< ١١ PREFIXED ONE, ١٠ TEN >

12	عع	<ع PREFIXED TWO, ع TEN>
13	ررر	<ر PREFIXED THREE, ع TEN>
14	لررر	<ل PREFIXED FOUR, ع TEN>
15	رررر	<ر PREFIXED FIVE, ع TEN>
16	ررررر	<ر PREFIXED SIX, ع TEN>
17	رررررر	<ر PREFIXED SEVEN, ع TEN>
18	ررررررر	<ر PREFIXED EIGHT, ع TEN>
19	رررررررر	<ر PREFIXED NINE, ع TEN>
20	عع	<ع TWENTY>

5.2 Thousands

The thousands are represented using the distinctive character for each number:

1,000	ال	<ال ONE THOUSAND>
2,000	اعم	<اعم TWO THOUSAND>
3,000	امم	<امم THREE THOUSAND>
9,000	لعم	<لعم NINE THOUSAND>

When the thousands occur in isolation, the ^و PLACEHOLDER is often written above the stroke:

1,000	ال ^و	<ال ONE THOUSAND, ^و PLACEHOLDER>
-------	-----------------	---

In the Deccani style, the thousands are represented using ال ONE THOUSAND as a unit mark, while the primary numbers indicate the appropriate multiple:

1,000	عمم ال	<عمم ONE, ال ONE THOUSAND>
2,000	عمم ال	<عمم TWO, ال ONE THOUSAND>
3,000	عمم ال	<عمم THREE, ال ONE THOUSAND>

9,000 لَو ال <لَو TWO, ال ONE THOUSAND>

5.3 Ten thousands

The thousands are represented using the respective character for each number. Multiples are written using prefixed forms of the primary numbers, similar to the pattern for 11–19 described above:

10,000 ع <ع TEN THOUSAND>
 11,000 لع <ل PREFIXED ONE, ع TEN THOUSAND>
 12,000 عع <ع PREFIXED TWO, ع TEN THOUSAND>
 13,000 ععع <ع PREFIXED THREE, ع TEN THOUSAND>
 19,000 لعع <ل PREFIXED NINE, ع TEN THOUSAND>
 20,000 عع <عع TWENTY THOUSAND>

Compounds with ع ALTERNATE TEN THOUSAND are written similarly:

10,000 عم <عم ALTERNATE TEN THOUSAND>
 11,000 لم <ل PREFIXED ONE, عم ALTERNATE TEN THOUSAND>
 12,000 عم <ع PREFIXED TWO, عم ALTERNATE TEN THOUSAND>
 13,000 عمع <ع PREFIXED THREE, عم ALTERNATE TEN THOUSAND>

When the ten thousands occur in isolation, the ^و PLACEHOLDER is often written above the stroke:

1,000 ^وع <ع TEN THOUSAND, ^و PLACEHOLDER>

In the Deccani style, the ten thousands may be represented alternatively using ال ONE THOUSAND as a unit mark, while the ten thousands indicate the appropriate multiple:

10,000 ع ال <ع TEN THOUSAND, ال ONE THOUSAND>
 11,000 لع ال <ل PREFIXED ONE, ع TEN THOUSAND, ال ONE THOUSAND>
 12,000 عع ال <ع PREFIXED TWO, ع TEN THOUSAND, ال ONE THOUSAND>

13,000	دع ال	< د PREFIXED THREE, ع TEN THOUSAND, ال ONE THOUSAND >
20,000	ع ال	< ع TWENTY THOUSAND, ال ONE THOUSAND >

The horizontal stroke of the ten thousands is often extended beneath all smaller numbers that follow it:

50,550	صمحم	< ح FIFTY THOUSAND, صم FIVE HUNDRED, ح FIFTY >
55,550	صمحم	< ح PREFIXED FIVE, ح FIFTY THOUSAND, صم FIVE HUNDRED, ح FIFTY >

5.4 Lakhs (hundred thousands)

The numbers 1 and 2 lakhs are represented using distinctive characters, while 3–9 lakhs are represented using the respective primary number followed by the لک LAKH MARK:

1,00,000 (100,000)	لکھ	< لکھ LAKH >
2,00,000 (200,000)	لکھان	< لکھان LAKHAN >
3,00,000 (300,000)	سے لک	< سے THREE, لک LAKH MARK >
9,00,000 (900,000)	نو لک	< نو NINE, لک LAKH MARK >

In the Deccani style, لکھ LAKH and لکھان LAKHAN are not used. Instead, the لکھ ALTERNATE LAKH MARK is used by itself for 1 lakh and in conjunction with the appropriate primary number for all other multiples:

1,00,000 (100,000)	لکھ	< لکھ ALTERNATE LAKH MARK >
2,00,000 (200,000)	دو لکھ	< دو TWO, لکھ ALTERNATE LAKH MARK >
3,00,000 (300,000)	سے لکھ	< سے THREE, لکھ ALTERNATE LAKH MARK >
9,00,000 (900,000)	نو لکھ	< نو NINE, لکھ ALTERNATE LAKH MARK >

5.5 Tens of lakhs (primary millions)

The tens of lakhs are expressed using the tens and the لک LAKH MARK.

10,00,000 (1,000,000)	ع لک	<ع TEN, لک LAKH MARK>
11,00,000 (1,100,000)	لٓ ع لک	<لٓ PREFIXED ONE, ع TEN, لک LAKH MARK>
12,00,000 (1,200,000)	ٓ ع لک	<ٓ PREFIXED TWO, ع TEN, لک LAKH MARK>
13,00,000 (1,300,000)	ٓٓ ع لک	<ٓٓ PREFIXED THREE, ع TEN, لک LAKH MARK>
20,00,000 (2,000,000)	عٓٓ لک	<عٓٓ TWENTY, لک LAKH MARK>

Several sources show a modified form of the tens when these numbers occur with لک LAKH MARK, in which the terminal loop is removed in order to accommodate the placement of the LAKH MARK above the stroke of the tens. In this style, 10 lakh is written as ع لک not as ع لک. This method of writing the tens of lakhs may be mimicked by using the numbers for the ten thousands, whose shapes resemble the modified tens. While this approach does not preserve the semantic value of the number, it does offer a visual solution. Although a number such as ع لک could be incorrectly read as ‘ten thousand lakh’ instead of as ‘ten lakh’, the correct meaning is evident from context.

10,00,000 (1,000,000)	<u>ع لک</u>	<ع TEN THOUSAND, لک LAKH MARK>
11,00,000 (1,100,000)	<u>لٓ ع لک</u>	<لٓ PREFIXED ONE, ع TEN THOUSAND, لک LAKH MARK>
12,00,000 (1,200,000)	<u>ٓ ع لک</u>	<ٓ PREFIXED TWO, ع TEN THOUSAND, لک LAKH MARK>
13,00,000 (1,300,000)	<u>ٓٓ ع لک</u>	<ٓٓ PREFIXED THREE, ع TEN THOUSAND, لک LAKH MARK>
20,00,000 (2,000,000)	<u>عٓٓ لک</u>	<عٓٓ TWENTY THOUSAND, لک LAKH MARK>

Another method might be to produce the alternate display using contextual substitutions in a font.

5.6 Crores (ten millions)

The numbers 1 and 2 crores are represented using distinctive characters, while 3–9 crores are represented using the respective primary number followed by the **کروڑ** KAROR:

1,00,00,000 (10,000,000)	کروڑ	< کروڑ KAROR >
2,00,00,000 (20,000,000)	کروڑاں	< کروڑاں KARORAN >
2,00,00,000 (20,000,000)	دو کروڑ	< دو TWO, کروڑ KAROR >
3,00,00,000 (30,000,000)	سے کروڑ	< سے THREE, کروڑ KAROR >
9,00,00,000 (90,000,000)	نو کروڑ	< نو NINE, کروڑ KAROR >

5.7 Tens of crores (hundred millions)

The tens of crores are expressed using the tens and **کروڑ** KAROR.

10,00,00,000 (100,000,000)	دہ کروڑ	< دہ TEN, کروڑ KAROR >
11,00,00,000 (110,000,000)	ایک کروڑ دہ کروڑ	< ایک PREFIXED ONE, دہ TEN, کروڑ KAROR >
12,00,00,000 (120,000,000)	دو کروڑ دہ کروڑ	< دو PREFIXED TWO, دہ TEN, کروڑ KAROR >
19,00,00,000 (190,000,000)	تین کروڑ دہ کروڑ	< تین PREFIXED THREE, دہ TEN, کروڑ KAROR >
20,00,00,000 (200,000,000)	دو دہ کروڑ	< دو TWENTY, کروڑ KAROR >

Similar to the alternate orthography for tens of lakhs (see § 5.5), the tens of crores may be written using modified forms of the tens: 10 crore is written as عکرو not as ع کرو. As suggested for the tens of lakhs, the numbers for the ten thousands may be used for the tens when writing tens of crores, even though this approach does not preserve the semantic value of the number:

10,00,00,000 (100,000,000)	<u>عکرو</u>	< <u>ع</u> TEN THOUSAND, <u>کرو</u> KAROR >
11,00,00,000 (110,000,000)	<u>لہکرو</u>	< <u>لہ</u> PREFIXED ONE, <u>ع</u> TEN THOUSAND, <u>کرو</u> KAROR >
12,00,00,000 (120,000,000)	<u>عکرو</u>	< <u>ع</u> PREFIXED TWO, <u>ع</u> TEN THOUSAND, <u>کرو</u> KAROR >
19,00,00,000 (190,000,000)	<u>دہکرو</u>	< <u>دہ</u> PREFIXED THREE, <u>ع</u> TEN THOUSAND, <u>کرو</u> KAROR >
20,00,00,000 (200,000,000)	<u>عکرو</u>	< <u>ع</u> TWENTY THOUSAND, <u>کرو</u> KAROR >

Another method might be to produce the alternate display using contextual substitutions in a font.

5.8 Alternate method of writing lakhs and crores

As shown in figures 10–14, an alternate method of writing lakhs and crores is used in the Deccani style. Instead of the logical left-to-right order, the individual units of a number are positioned in inverse vertical order, such that the smallest number is written first with larger units ascending upwards and leftwards.

	Logical	Inverted
1,50,568	<u>لکھ</u> <u>چھ</u> <u>ہزار</u>	<u>لکھ</u> <u>چھ</u> <u>ہزار</u>
56,19,10,401	<u>لکھ</u> <u>چھ</u> <u>ہزار</u> <u>نویس</u> <u>ہزار</u> <u>چھ</u> <u>ہزار</u> <u>چھ</u> <u>ہزار</u>	<u>لکھ</u> <u>چھ</u> <u>ہزار</u> <u>نویس</u> <u>ہزار</u> <u>چھ</u> <u>ہزار</u> <u>چھ</u> <u>ہزار</u>

The two orientations would need to be encoded using different character sequences. For example, the encoded sequences for the number 56,19,10,401 shown above are:

حے کرور لوب اعاعه	< — PREFIXED SIX, ه FIFTY, کرور KAROR
لو	PREFIXED NINE, ع TEN, لوب ALTERNATE LAKH MARK
— ع	TEN THOUSAND, اعا FOUR HUNDRED, ع ALTERNATE ONE>
حے کرور لوب اعاعه	< — TEN THOUSAND, اعا FOUR HUNDRED, ع ALTERNATE ONE>
لو	PREFIXED NINE, ع TEN, لوب ALTERNATE LAKH MARK
— ع	PREFIXED SIX, ه FIFTY, کرور KAROR>

Note the rendering of the tens with ALTERNATE LAKH MARK and KAROR using modified forms resembling the ten thousands.

5.9 Fractions

Fraction signs are placed after a number:

5¼	- ه	< ه FIVE, - FRACTION ONE QUARTER>
5½	* ه	< ه FIVE, * FRACTION ONE HALF>
5¾	ش ه	< ه FIVE, ش FRACTION THREE QUARTERS>

5.10 Currency

Currency in Indic Siyaq is counted in terms of the historical rupee, which was used before 1950 (see Pandey 2007 for a description of regional currency notation systems and the characters used for representing them in various Indic scripts).

The روپيه *rūpaya* (English sg. ‘rupee’, pl. ‘rupees’, abbreviated ‘Rs.’) and whole Rs. are represented using Siyaq numbers and are denoted using the INDIC SIYAQ RUPEE MARK:

Rs. 10	/ ع	< ع TEN, / RUPEE MARK>
Rs. 100	/ ما	< ما ONE HUNDRED, / RUPEE MARK>
Rs. 1,000	/ ال	< ال ONE THOUSAND, / RUPEE MARK>
Rs. 1,000	/ ال	< ال ONE THOUSAND, ° PLACEHOLDER, / RUPEE MARK>

The historical rupee is divided into 16 *آنہ* *ānā* (English ‘anna’, abbreviated ‘As.’). The As. are written using Arabic-Indic digits, followed by the / RUPEE MARK when the unit occurs in isolation. When Rs. and As. are written together, they are separated by the RUPEE MARK, with the As. positioned to the left of the mark:

As. 1	/١	<١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>
As. 2	/٢	<٢ U+06F2 EXTENDED ARABIC-INDIC DIGIT TWO, / RUPEE MARK>
As. 3	/٣	<٣ U+06F3 EXTENDED ARABIC-INDIC DIGIT THREE, / RUPEE MARK>
As. 14	/١٤	<١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ٤ U+06F4 EXTENDED ARABIC-INDIC DIGIT FOUR, / RUPEE MARK>
As. 15	/١٥	<١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ٥ U+06F5 EXTENDED ARABIC-INDIC DIGIT FIVE, / RUPEE MARK>
Rs. 1	/١٠٠٠	<١٠٠٠ ONE, / RUPEE MARK>
Rs. 1, As. 1	١ /١٠٠٠	<١٠٠٠ ONE, / RUPEE MARK, ١ U+0661 EXTENDED ARABIC-INDIC DIGIT ONE>
Rs. 1, As. 2	٢ /١٠٠٠	<١٠٠٠ ONE, / RUPEE MARK, ٢ U+0662 EXTENDED ARABIC-INDIC DIGIT TWO>

The As. is divided into 12 *پائی* *pāī* (‘pie’, plural ‘pies’ or ‘pice’, abbreviated ‘P’). The P. is written using Arabic-Indic digits, which are placed to the left of the RUPEE MARK when the unit is written in isolation. When As. and P. are written together, they are separated by the RUPEE MARK, with the P. written to the left of the currency sign:

P. 1	١ /	</ RUPEE MARK, ١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE>
P. 2	٢ /	</ RUPEE MARK, ٢ U+06F2 EXTENDED ARABIC-INDIC DIGIT TWO>
P. 3	٣ /	</ RUPEE MARK, ٣ U+06F3 EXTENDED ARABIC-INDIC DIGIT THREE>
P. 10	١٠ /	</ RUPEE MARK, ١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ٠ U+06F0 EXTENDED ARABIC-INDIC DIGIT ZERO>
P. 11	١١ /	</ RUPEE MARK, ١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE>
As. 1	/١	<١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>
As. 1, P. 1	١ /١	<١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK, ١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE>

As. 1, P. 2 ۲ / ۱ <| U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK,
۲ U+06F2 EXTENDED ARABIC-INDIC DIGIT TWO>

Additionally, as shown in figure 7, the word پائی itself may be written after the quantity:

السّماحيه ۱۱ / ۰۸ / پائی Rs. 1125, As. 11, Pai 8½

Additionally, the P. is grouped into units called پیسا *paisā* (sg. ‘paisa’, pl. ‘paise’, abbreviated ‘Ps’). Three P. constitute one Ps. Four Ps. make one As. The Ps. is represented using fraction signs:

Ps. 1 / - <- FRACTION ONE QUARTER, / RUPEE MARK>

Ps. 2 / ° <° FRACTION ONE HALF, / RUPEE MARK>

Ps. 3 / ¸ <¸ FRACTION THREE QUARTERS, / RUPEE MARK>

As. 1 / | <| U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>

As. 1, Ps. 1 / - | <| U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, - FRACTION ONE
QUARTER, / RUPEE MARK>

When currency values less than 1 rupee are written with larger values, then the sequence of characters denoting the former are positioned beneath the latter.

السّماحيه Rs. 1125, As. 11, Pai 8½
۱۱ / ۰۸

The below-base positioning of the smaller currency units is to be handled through layout. The default representation is linear:

السّماحيه ۱۱ / ۰۸

6 Character Data

Character Properties In the format of UnicodeData.txt:

```
1EC71;INDIC SIYAQ NUMBER ONE;No;0;AL;;;1;N;;;;;
1EC72;INDIC SIYAQ NUMBER TWO;No;0;AL;;;2;N;;;;;
1EC73;INDIC SIYAQ NUMBER THREE;No;0;AL;;;3;N;;;;;
1EC74;INDIC SIYAQ NUMBER FOUR;No;0;AL;;;4;N;;;;;
1EC75;INDIC SIYAQ NUMBER FIVE;No;0;AL;;;5;N;;;;;
1EC76;INDIC SIYAQ NUMBER SIX;No;0;AL;;;6;N;;;;;
1EC77;INDIC SIYAQ NUMBER SEVEN;No;0;AL;;;7;N;;;;;
1EC78;INDIC SIYAQ NUMBER EIGHT;No;0;AL;;;8;N;;;;;
1EC79;INDIC SIYAQ NUMBER NINE;No;0;AL;;;9;N;;;;;
```

1EC7A;INDIC SIYAQ NUMBER TEN;No;0;AL;;;10;N;;;;;
 1EC7B;INDIC SIYAQ NUMBER TWENTY;No;0;AL;;;20;N;;;;;
 1EC7C;INDIC SIYAQ NUMBER THIRTY;No;0;AL;;;30;N;;;;;
 1EC7D;INDIC SIYAQ NUMBER FORTY;No;0;AL;;;40;N;;;;;
 1EC7E;INDIC SIYAQ NUMBER FIFTY;No;0;AL;;;50;N;;;;;
 1EC7F;INDIC SIYAQ NUMBER SIXTY;No;0;AL;;;60;N;;;;;
 1EC80;INDIC SIYAQ NUMBER SEVENTY;No;0;AL;;;70;N;;;;;
 1EC81;INDIC SIYAQ NUMBER EIGHTY;No;0;AL;;;80;N;;;;;
 1EC82;INDIC SIYAQ NUMBER NINETY;No;0;AL;;;90;N;;;;;
 1EC83;INDIC SIYAQ NUMBER ONE HUNDRED;No;0;AL;;;100;N;;;;;
 1EC84;INDIC SIYAQ NUMBER TWO HUNDRED;No;0;AL;;;200;N;;;;;
 1EC85;INDIC SIYAQ NUMBER THREE HUNDRED;No;0;AL;;;300;N;;;;;
 1EC86;INDIC SIYAQ NUMBER FOUR HUNDRED;No;0;AL;;;400;N;;;;;
 1EC87;INDIC SIYAQ NUMBER FIVE HUNDRED;No;0;AL;;;500;N;;;;;
 1EC88;INDIC SIYAQ NUMBER SIX HUNDRED;No;0;AL;;;600;N;;;;;
 1EC89;INDIC SIYAQ NUMBER SEVEN HUNDRED;No;0;AL;;;700;N;;;;;
 1EC8A;INDIC SIYAQ NUMBER EIGHT HUNDRED;No;0;AL;;;800;N;;;;;
 1EC8B;INDIC SIYAQ NUMBER NINE HUNDRED;No;0;AL;;;900;N;;;;;
 1EC8C;INDIC SIYAQ NUMBER ONE THOUSAND;No;0;AL;;;1000;N;;;;;
 1EC8D;INDIC SIYAQ NUMBER TWO THOUSAND;No;0;AL;;;2000;N;;;;;
 1EC8E;INDIC SIYAQ NUMBER THREE THOUSAND;No;0;AL;;;3000;N;;;;;
 1EC8F;INDIC SIYAQ NUMBER FOUR THOUSAND;No;0;AL;;;4000;N;;;;;
 1EC90;INDIC SIYAQ NUMBER FIVE THOUSAND;No;0;AL;;;5000;N;;;;;
 1EC91;INDIC SIYAQ NUMBER SIX THOUSAND;No;0;AL;;;6000;N;;;;;
 1EC92;INDIC SIYAQ NUMBER SEVEN THOUSAND;No;0;AL;;;7000;N;;;;;
 1EC93;INDIC SIYAQ NUMBER EIGHT THOUSAND;No;0;AL;;;8000;N;;;;;
 1EC94;INDIC SIYAQ NUMBER NINE THOUSAND;No;0;AL;;;9000;N;;;;;
 1EC95;INDIC SIYAQ NUMBER TEN THOUSAND;No;0;AL;;;10000;N;;;;;
 1EC96;INDIC SIYAQ NUMBER TWENTY THOUSAND;No;0;AL;;;20000;N;;;;;
 1EC97;INDIC SIYAQ NUMBER THIRTY THOUSAND;No;0;AL;;;30000;N;;;;;
 1EC98;INDIC SIYAQ NUMBER FORTY THOUSAND;No;0;AL;;;40000;N;;;;;
 1EC99;INDIC SIYAQ NUMBER FIFTY THOUSAND;No;0;AL;;;50000;N;;;;;
 1EC9A;INDIC SIYAQ NUMBER SIXTY THOUSAND;No;0;AL;;;60000;N;;;;;
 1EC9B;INDIC SIYAQ NUMBER SEVENTY THOUSAND;No;0;AL;;;70000;N;;;;;
 1EC9C;INDIC SIYAQ NUMBER EIGHTY THOUSAND;No;0;AL;;;80000;N;;;;;
 1EC9D;INDIC SIYAQ NUMBER NINETY THOUSAND;No;0;AL;;;90000;N;;;;;
 1EC9E;INDIC SIYAQ NUMBER LAKH;No;0;AL;;;100000;N;;;;;
 1EC9F;INDIC SIYAQ NUMBER LAKHAN;No;0;AL;;;200000;N;;;;;
 1ECA0;INDIC SIYAQ LAKH MARK;No;0;AL;;;100000;N;;;;;
 1ECA1;INDIC SIYAQ NUMBER KAROR;No;0;AL;;;1000000;N;;;;;
 1ECA2;INDIC SIYAQ NUMBER KARORAN;No;0;AL;;;2000000;N;;;;;
 1ECA3;INDIC SIYAQ NUMBER PREFIXED ONE;No;0;AL;;;1;N;;;;;
 1ECA4;INDIC SIYAQ NUMBER PREFIXED TWO;No;0;AL;;;2;N;;;;;
 1ECA5;INDIC SIYAQ NUMBER PREFIXED THREE;No;0;AL;;;3;N;;;;;
 1ECA6;INDIC SIYAQ NUMBER PREFIXED FOUR;No;0;AL;;;4;N;;;;;
 1ECA7;INDIC SIYAQ NUMBER PREFIXED FIVE;No;0;AL;;;5;N;;;;;
 1ECA8;INDIC SIYAQ NUMBER PREFIXED SIX;No;0;AL;;;6;N;;;;;
 1ECA9;INDIC SIYAQ NUMBER PREFIXED SEVEN;No;0;AL;;;7;N;;;;;
 1ECAA;INDIC SIYAQ NUMBER PREFIXED EIGHT;No;0;AL;;;8;N;;;;;
 1ECAB;INDIC SIYAQ NUMBER PREFIXED NINE;No;0;AL;;;9;N;;;;;
 1ECAC;INDIC SIYAQ PLACEHOLDER;So;0;AL;;;N;;;;;
 1ECAD;INDIC SIYAQ FRACTION ONE QUARTER;No;0;AL;;;1/4;N;;;;;
 1ECAE;INDIC SIYAQ FRACTION ONE HALF;No;0;AL;;;1/2;N;;;;;
 1ECAF;INDIC SIYAQ FRACTION THREE QUARTERS;No;0;AL;;;3/4;N;;;;;
 1ECB0;INDIC SIYAQ RUPEE MARK;Sc;0;AL;;;N;;;;;
 1ECB1;INDIC SIYAQ NUMBER ALTERNATE ONE;No;0;AL;;;1;N;;;;;
 1ECB2;INDIC SIYAQ NUMBER ALTERNATE TWO;No;0;AL;;;2;N;;;;;
 1ECB3;INDIC SIYAQ NUMBER ALTERNATE TEN THOUSAND;No;0;AL;;;10000;N;;;;;
 1ECB4;INDIC SIYAQ NUMBER ALTERNATE LAKH MARK;No;0;AL;;;100000;N;;;;;

Linebreaking In the format of LineBreak.txt:

```

1CE71..1ECAB;AL # No [60] INDIC SIYAQ NUMBER ONE .. NUMBER PREFIXED NINE
1ECAC;PO # Po INDIC SIYAQ PLACEHOLDER
1ECAD..1ECAF;AL # No [3] INDIC SIYAQ FRACTION ONE QUARTER .. FRACTION THREE QUARTERS
1ECB0;PO # Sc INDIC SIYAQ RUPEE MARK
1ECB1..1ECB4;AL # No [4] INDIC SIYAQ NUMBER ALTERNATE ONE .. ALTERNATE LAKH MARK

```

Confusion Data Arabic sequences that may mimic Indic Siyaq Numbers are given below:

Indic Siyaq Numbers	Arabic
NUMBER ONE	; AIN, DOTLESS BEH, SAD
NUMBER TWO	; AIN, DOTLESS BEH, SAD, ALEF
NUMBER THREE	; DOTLESS BEH, DOTLESS BEH, YEH BARREE
NUMBER FOUR	; LAM, LAM, AIN
NUMBER FIVE	; SAD, HEH GOAL
NUMBER SIX	; LAM, YEH BARREE
NUMBER SEVEN	; HEH GOAL, AIN
NUMBER EIGHT	; HEH GOAL, YEH BARREE
NUMBER NINE	; LAM, AIN
NUMBER TEN	; AIN, NOON GHUNNA
NUMBER TWENTY	; AIN, DOTLESS BEH, NOON GHUNNA
NUMBER THIRTY	; DOTLESS BEH, DOTLESS BEH, NOON GHUNNA
NUMBER FORTY	; LAM, LAM, AIN, NOON GHUNNA
NUMBER FIFTY	; SAD, NOON GHUNNA
NUMBER SIXTY	; TATWEEL, NOON GHUNNA
NUMBER SEVENTY	; HEH GOAL, AIN, NOON GHUNNA
NUMBER EIGHTY	; LAM, NOON GHUNNA
NUMBER NINETY	; LAM, AIN, NOON GHUNNA
NUMBER ONE HUNDRED	; MEEM, ALEF
NUMBER TWO HUNDRED	; MEEM, ALEF, LAM, HEH GOAL
NUMBER THREE HUNDRED	; SEEN, MEEM, ALEF
NUMBER FOUR HUNDRED	; ALEF, AIN, MEEM, ALEF
NUMBER FIVE HUNDRED	; SAD, MEEM, ALEF
NUMBER SIX HUNDRED	; SEEN, TATWEEL, MEEM, ALEF
NUMBER SEVEN HUNDRED	; LAM, MEEM, ALEF
NUMBER EIGHT HUNDRED	; LAM, MEEM, ALEF
NUMBER NINE HUNDRED	; LAAM, AIN, MEEM, ALEF
NUMBER ONE THOUSAND	; ALEF, LAM, TATWEEL
NUMBER TWO THOUSAND	; AIN, DOTLESS BEH, TATWEEL
NUMBER THREE THOUSAND	; DOTLESS BEH, DOTLESS BEH, TATWEEL
NUMBER FOUR THOUSAND	; LAM, LAM, AIN, TATWEEL
NUMBER FIVE THOUSAND	; SAD, TATWEEL
NUMBER SIX THOUSAND	; SEEN, TATWEEL
NUMBER SEVEN THOUSAND	; HEH GOAL, AIN, TATWEEL
NUMBER EIGHT THOUSAND	; HEH GOAL, TATWEEL
NUMBER NINE THOUSAND	; LAM, AIN, TATWEEL
NUMBER TEN THOUSAND	; AIN, TATWEEL
NUMBER TWENTY THOUSAND	; AIN, DOTLESS BEH, TATWEEL
NUMBER THIRTY THOUSAND	; DOTLESS BEH, DOTLESS BEH, TATWEEL
NUMBER FORTY THOUSAND	; LAM, LAM, AIN, TATWEEL
NUMBER FIFTY THOUSAND	; SAD, TATWEEL
NUMBER SIXTY THOUSAND	; SEEN, TATWEEL
NUMBER SEVENTY THOUSAND	; HEH GOAL, AIN, TATWEEL
NUMBER EIGHTY THOUSAND	; HEH GOAL, TATWEEL
NUMBER NINETY THOUSAND	; LAM, AIN, TATWEEL
NUMBER ONE HUNDRED THOUSAND	; LAM, LAM, TATWEEL
NUMBER LAKH	; LAM, KEHEH, HEH GOAL
NUMBER LAKHAN	; LAM, KEHEH, HEH GOAL, ALEF, NOON

LAKH MARK	; LAM, KEHEH
NUMBER KAROR	; KEHEH, REH, WAW, REH
NUMBER KARORAN	; KEHEH, REH, WAW, REH, ALEF, NOON
NUMBER PREFIXED ONE	; LAM, HEH GOAL
NUMBER PREFIXED TWO	; AIN, TATWEEL
NUMBER PREFIXED THREE	; DOTLESS BEH, DOTLESS BEH, TATWEEL
NUMBER PREFIXED FOUR	; LAM, LAM, AIN, TATWEEL
NUMBER PREFIXED FIVE	; SAD, TATWEEL
NUMBER PREFIXED SIX	; SEEN, TATWEEL
NUMBER PREFIXED SEVEN	; HEH GOAL, AIN, TATWEEL
NUMBER PREFIXED EIGHT	; HEH GOAL, TATWEEL
NUMBER PREFIXED NINE	; LAM, AIN, TATWEEL
PLACEHOLDER	; SHADDA
FRACTION ONE QUARTER	; FULL STOP
FRACTION ONE HALF	; EXTENDED ARABIC-INDIC DIGIT ZERO
FRACTION THREE QUARTERS	; FULL STOP, EXTENDED ARABIC-INDIC DIGIT ZERO
RUPEE MARK	; DATE SEPARATOR
NUMBER ALTERNATE ONE	; AIN, HEH GOAL
NUMBER ALTERNATE TWO	; AIN, ALEF
NUMBER ALTERNATE TEN THOUSAND	; AIN, MEEM, TATWEEL
NUMBER ALTERNATE LAKH MARK	; LAM, KAF

7 References

- Ahmad Dihlavī, Sayyid. 1974. *فرہنگ آصفیہ* [*Farhang-i Āsafiyah*]. vol. 2. Delhi: Taraqqī-e-Urdū Board, National Academy.
- ‘Azīz Jang Bahādur Vilā, Navvāb. c. 1894 [1312 AH]. *سیاق دکن* [=Siyāq-i Dakkan]. Hyderabad.
- Barker, Muhammad Abd-al-Rahman. 1967. *A Course in Urdu*. Vol. 1. Montreal: Institute of Islamic Studies, McGill University.
- Gladwin, Francis. 1790. *A Compendious System of Bengal Revenue Accounts*. In three parts. Part I. Calcutta: Manuel Cantopher.
- Naim, Chaudhry M. 1999. *Introductory Urdu*. 3rd ed. rev. Chicago: South Asia Language & Area Center, University of Chicago.
- Muhazzab, Muhammad Mirza. 195-?. *مخزب اللغت* [*Muhazzab al-Lughat*]. Lakhnau: Muhafiz Urdu Book Depot.
- Muqtadirah Qaumī Zabān. 2001. *درسی اردو لغت* [*Darsī Urdū Lughat*]. Tabā‘ 1. Silsilah-yi matbu‘at-yi Muqtadirah-yi Qaumi Zaban; 391. Islamabad.
- Pandey, Anshuman. 2007. “Proposal to Encode North Indic Number Forms in ISO/IEC 10646” (L2/07-354). <http://www.unicode.org/L2/L2007/07354-north-indic.pdf>
- . 2007b. “Proposal to Encode Siyaq Numerals” (L2/07-414). <http://www.unicode.org/L2/L2007/07414-siyaq.pdf>
- . 2009. “Raqm Numerals: A Model for Encoding the Siyaq System of South Asia” (L2/09-148). <http://www.unicode.org/L2/L2009/09148-raqm.pdf>
- . 2011. “Preliminary Proposal to Encode Indic Siyaq Numbers in the UCS” (L2/11-270). <http://www.unicode.org/L2/L2011/11270-indic-siyaq.pdf>

———. 2015a. “Proposal to Encode Diwani Siyaq Numbers in Unicode” (L2/15-066).

<http://www.unicode.org/L2/L2015/15066-diwani-siyaq.pdf>

———. 2015b. “Proposal to Encode Ottoman Siyaq Numbers in Unicode” (L2/15-072).

<http://www.unicode.org/L2/L2015/15072-ottoman-siyaq.pdf>

———. 2015c. “Proposal to Encode Persian Siyaq Numbers in Unicode” (L2/15-122).

<http://www.unicode.org/L2/L2015/15122-persian-siyaq.pdf>

Palmer, Edward H. 1886. *Oriental Penmanship: Specimens of Persian Handwriting*. Edited by Frederic Pincott. London: W. H. Allen & Co.













Platts, John T. 1909. *A Grammar of the Hindūstānī or Urdū Language*. 5th imp. London: C. Lockwood.

Stewart, Charles. 1825. *Original Persian Letters and Other Documents with Fac-Similes*. London: printed for the author by W. Nicol.

8 Acknowledgments

I am extremely grateful to Roozbeh Pournader (Google) for his detailed comments over the years regarding the encoding of the four Siyaq blocks. This proposal certainly would not be possible without his input. I also thank Brian Spooner (University of Pennsylvania) for providing me with a copy of *Siyāq-i Dakkan* and for reviewing this proposal. Rizwan Ahmad (Qatar University), who read through Siyaq charts with me in Ann Arbor in 2007 in my effort to learn the notation system. Rezwan Rezack (Bangalore) provided specimens of bank notes from Hyderabad State. Chander Shekhar (Department of Persian, Delhi University) also reviewed the proposal and provided comments regarding the shapes of glyphs. I am also thankful to the various shopkeepers in Alambagh, Aminabad, Chowk, and Hazratganj in Lucknow, as well as Daryaganj in Delhi, who indulged me when I approached them over the years with drafts of this proposal in hand, asking if they were familiar with these numbers.

This project was made possible in part through a Google Research Award, granted to Deborah Anderson for the Script Encoding Initiative, and a grant from the United States National Endowment for the Humanities (PR-50205-15), which funds the Universal Scripts Project (part of the Script Encoding Initiative at the University of California, Berkeley). Any views, findings, conclusions or recommendations expressed in this publication do not necessarily reflect those of Google or the National Endowment for the Humanities.

	1EC7	1EC8	1EC9	1ECA	1ECB
0		موه 1EC80	حمه 1EC90	لك 1ECA0	ر 1ECB0
1	عمم 1EC71	له 1EC81	سم 1EC91	كرو 1ECA1	ع 1ECB1
2	عما 1EC72	لوه 1EC82	مع 1EC92	كروا 1ECA2	عا 1ECB2
3	سے 1EC73	ما 1EC83	سم 1EC93	له 1ECA3	عم 1ECB3
4	للو 1EC74	ماله 1EC84	لع 1EC94	ع 1ECA4	لل 1ECB4
5	حه 1EC75	سما 1EC85	ع 1EC95	د 1ECA5	
6	لے 1EC76	اعا 1EC86	عد 1EC96	للو 1ECA6	
7	موه 1EC77	حما 1EC87	س 1EC97	ح 1ECA7	
8	مے 1EC78	سما 1EC88	للو 1EC98	د 1ECA8	
9	لوه 1EC79	لما 1EC89	ح 1EC99	مو 1ECA9	
A	ع 1EC7A	لا 1EC8A	د 1EC9A	د 1ECAA	
B	عم 1EC7B	لما 1EC8B	مو 1EC9B	لو 1ECAB	
C	س 1EC7C	ال 1EC8C	ل 1EC9C	س 1ECAC	
D	للو 1EC7D	اعم 1EC8D	لو 1EC9D	د 1ECAD	
E	حه 1EC7E	سم 1EC8E	لكه 1EC9E	د 1ECAE	
F	س 1EC7F	للع 1EC8F	لكهان 1EC9F	د 1ECAF	

The Indic Siyaq Numbers are also known as 'Raqm' or 'Rakam' numbers.

Primary numbers

1EC71	۱	INDIC SIYAQ NUMBER ONE
1EC72	۲	INDIC SIYAQ NUMBER TWO
1EC73	۳	INDIC SIYAQ NUMBER THREE
1EC74	۴	INDIC SIYAQ NUMBER FOUR
1EC75	۵	INDIC SIYAQ NUMBER FIVE
1EC76	۶	INDIC SIYAQ NUMBER SIX
1EC77	۷	INDIC SIYAQ NUMBER SEVEN
1EC78	۸	INDIC SIYAQ NUMBER EIGHT
1EC79	۹	INDIC SIYAQ NUMBER NINE

Tens

1EC7A	۱۰	INDIC SIYAQ NUMBER TEN
1EC7B	۲۰	INDIC SIYAQ NUMBER TWENTY
1EC7C	۳۰	INDIC SIYAQ NUMBER THIRTY
1EC7D	۴۰	INDIC SIYAQ NUMBER FORTY
1EC7E	۵۰	INDIC SIYAQ NUMBER FIFTY
1EC7F	۶۰	INDIC SIYAQ NUMBER SIXTY
1EC80	۷۰	INDIC SIYAQ NUMBER SEVENTY
1EC81	۸۰	INDIC SIYAQ NUMBER EIGHTY
1EC82	۹۰	INDIC SIYAQ NUMBER NINETY

Hundreds

1EC83	۱۰۰	INDIC SIYAQ NUMBER ONE HUNDRED
1EC84	۲۰۰	INDIC SIYAQ NUMBER TWO HUNDRED
1EC85	۳۰۰	INDIC SIYAQ NUMBER THREE HUNDRED
1EC86	۴۰۰	INDIC SIYAQ NUMBER FOUR HUNDRED
1EC87	۵۰۰	INDIC SIYAQ NUMBER FIVE HUNDRED
1EC88	۶۰۰	INDIC SIYAQ NUMBER SIX HUNDRED
1EC89	۷۰۰	INDIC SIYAQ NUMBER SEVEN HUNDRED
1EC8A	۸۰۰	INDIC SIYAQ NUMBER EIGHT HUNDRED
1EC8B	۹۰۰	INDIC SIYAQ NUMBER NINE HUNDRED

Thousands

1EC8C	۱۰۰۰	INDIC SIYAQ NUMBER ONE THOUSAND
1EC8D	۲۰۰۰	INDIC SIYAQ NUMBER TWO THOUSAND
1EC8E	۳۰۰۰	INDIC SIYAQ NUMBER THREE THOUSAND
1EC8F	۴۰۰۰	INDIC SIYAQ NUMBER FOUR THOUSAND
1EC90	۵۰۰۰	INDIC SIYAQ NUMBER FIVE THOUSAND
1EC91	۶۰۰۰	INDIC SIYAQ NUMBER SIX THOUSAND
1EC92	۷۰۰۰	INDIC SIYAQ NUMBER SEVEN THOUSAND
1EC93	۸۰۰۰	INDIC SIYAQ NUMBER EIGHT THOUSAND
1EC94	۹۰۰۰	INDIC SIYAQ NUMBER NINE THOUSAND

Ten thousands

Also used for representing the tens when writing tens of lakhs and tens of crores

1EC95	۱۰,۰۰۰	INDIC SIYAQ NUMBER TEN THOUSAND
1EC96	۲۰,۰۰۰	INDIC SIYAQ NUMBER TWENTY THOUSAND
1EC97	۳۰,۰۰۰	INDIC SIYAQ NUMBER THIRTY THOUSAND
1EC98	۴۰,۰۰۰	INDIC SIYAQ NUMBER FORTY THOUSAND
1EC99	۵۰,۰۰۰	INDIC SIYAQ NUMBER FIFTY THOUSAND
1EC9A	۶۰,۰۰۰	INDIC SIYAQ NUMBER SIXTY THOUSAND
1EC9B	۷۰,۰۰۰	INDIC SIYAQ NUMBER SEVENTY THOUSAND
1EC9C	۸۰,۰۰۰	INDIC SIYAQ NUMBER EIGHTY THOUSAND
1EC9D	۹۰,۰۰۰	INDIC SIYAQ NUMBER NINETY THOUSAND

Lakhs

Used for the hundred thousands and primary millions

1EC9E	۱,۰۰,۰۰۰	INDIC SIYAQ NUMBER LAKH
	= 1 lakh	
	= 100,000	

1EC9F	۱,۰۰,۰۰,۰۰۰	INDIC SIYAQ NUMBER LAKHAN
	= 2 lakh	
	= 200,000	

1ECA0	۱,۰۰,۰۰,۰۰۰	INDIC SIYAQ LAKH MARK
	• used as a mark for denoting other lakh values	

Crores

Used for the ten millions and higher orders

1ECA1	۱,۰۰,۰۰,۰۰۰	INDIC SIYAQ NUMBER KAROR
	= 1 crore	
	= 10 million	
	= 100 lakh	
	• used as a mark for denoting crores	
1ECA2	۲,۰۰,۰۰,۰۰۰	INDIC SIYAQ NUMBER KARORAN
	= 2 crore	
	= 20 million	
	= 200 lakh	

Prefixed forms of primary numbers

Used for representing primary units in compounds

1ECA3	۱۰۰	INDIC SIYAQ NUMBER PREFIXED ONE
1ECA4	۲۰۰	INDIC SIYAQ NUMBER PREFIXED TWO
1ECA5	۳۰۰	INDIC SIYAQ NUMBER PREFIXED THREE
1ECA6	۴۰۰	INDIC SIYAQ NUMBER PREFIXED FOUR
1ECA7	۵۰۰	INDIC SIYAQ NUMBER PREFIXED FIVE
1ECA8	۶۰۰	INDIC SIYAQ NUMBER PREFIXED SIX
1ECA9	۷۰۰	INDIC SIYAQ NUMBER PREFIXED SEVEN
1ECAA	۸۰۰	INDIC SIYAQ NUMBER PREFIXED EIGHT
1ECAB	۹۰۰	INDIC SIYAQ NUMBER PREFIXED NINE

Placeholder

1ECAC	۰	INDIC SIYAQ PLACEHOLDER
-------	---	-------------------------

Fractions

1ECAD	¼	INDIC SIYAQ FRACTION ONE QUARTER
1ECAE	½	INDIC SIYAQ FRACTION ONE HALF
1ECAF	¾	INDIC SIYAQ FRACTION THREE QUARTERS

Currency sign

1ECB0	₹	INDIC SIYAQ RUPEE MARK
-------	---	------------------------

Alternate forms

1ECB1	۱۰۰	INDIC SIYAQ NUMBER ALTERNATE ONE
1ECB2	۲۰۰	INDIC SIYAQ NUMBER ALTERNATE TWO
1ECB3	۳۰۰	INDIC SIYAQ NUMBER ALTERNATE TEN THOUSAND
1ECB4	۱,۰۰,۰۰۰	INDIC SIYAQ ALTERNATE LAKH MARK

	x1	x10	x100	x1,000	x10,000	x100,000	x1,000,000	x10,000,000
1	عصم	ع	ما	ال	ع	لکھہ	لک	کرور
2	عصفا	ع	مالہ	اعم	ع	لکھان	لک	کروراں
3	سے	س	سما	سم	س	سے لک	س لک	سے کرور
4	للوہ	للوہ	اعا	للعج	للوہ	للوہ لک	للوہ لک	للوہ کرور
5	حہ	حہ	حما	حم	ح	حہ لک	ح لک	حہ کرور
6	لے	لے	سما	سم	لے	لے لک	لے لک	لے کرور
7	موہ	موہ	لما	مع	موہ	موہ لک	موہ لک	موہ کرور
8	مے	مے	لا	سم	لے	مے لک	مے لک	مے کرور
9	لوہ	لوہ	لما	لعج	لوہ	لوہ لک	لوہ لک	لوہ کرور

Table 1: Indic forms of the Siyaq numbers for eight decimal orders.

RAQAM.

This is the method universally employed by nations using the Arabic character for recording pecuniary transactions, and for noting all computations of weight and measure. The word *raqam* denotes “marking,” “noting,” “writing,” and is used for the “price-mark” placed on an article to express its value. The symbols themselves are merely abbreviations of the Arabic words denoting numbers; and, notwithstanding their apparent complexity, are exceedingly simple when their characteristic features are recognized. The *raqam* symbols from 1 to 10 are abbreviations of the Arabic words. Thus 1 is expressed by عدد “number,” with a final stroke implying “unity”; 2 is represented by the dual form عددان; 3 is لثلاث; 4 is ربيع; 5 is خمس; 6 is سبعمائة; 7 is سبع; 8 is ثمانين; 9 is تسع; 10 is عشرة. As the symbols are Shikasta forms of these words they are written from right to left; and the initial of each is its characteristic feature. In forming the symbols from 11 to 19, the representative of 10 is written with the characteristic feature of each unit running out into a streak underneath. These symbols, therefore, may be read as 10+1, 10+2, 10+3, &c. The figure 20 is represented by the characteristic feature of 2 prefixed to the final of the symbol for 10, and thus simply enough indicates “double ten.” The units are placed under this, as before, to express “double 10+1,” up to “double 10+9.” The characteristic features of 3, 4, 5, 6, 7, 8, and 9, are prefixed to the final of 10, to render the numbers 30, 40, 50, &c.; and the units are run under each, as before explained, to express the intermediate numbers, up to 99. The figure 100 is an abbreviation of the Arabic word مائة; and the same process of prefixing the characteristic features of the units, carries us up to 900. These symbols are placed at the right-hand side of the lesser numbers; thus 123 would be written $\overset{20}{3}.100$. The symbol for 1000 is the Arabic word الف; and the usual modifications of its initial part carry the numeration up to 90,000. The representatives of thousands are placed to the right of those representing hundreds; thus, 1125 would appear as $\overset{20}{5}.100.1000$. To express numbers beyond 90,000 the Indian words لکھ or لاکھ 100,000, and کڑور 10,000,000 have been availed of. The word لکھ is not used alone, but has the figure 1 prefixed, indicating “one lakh”; for 2 lakhs a dual form is improvised, and لکھان is made to express “double lakh.” To render 3 lakhs up to 90 lakhs, first the units, and, in this case, the tens also are run under the primary symbol, until we reach 1 *karor*, and its dual *karorán*, “2 karors,” after which the former process is repeated, if such high numbers are ever required.

It is hoped that the foregoing explanation will simplify what appears to many Europeans to be a puzzling system of notation. A complete table of *raqam* figures is here added.

Figure 1: Description of Siyaq notation (from Palmer 1886: 39, 40). The table of *raqam* referred to in the last paragraph is the same as that given by Stewart (1825), shown here in figure 6.

2 TABLE OF FIGURES.

Rekem.	Hind.	Rekem.	Hind.
۱	21	۱	1
۲	22	۲	2
۳	23	۳	3
۴	24	۴	4
۵	25	۵	5
۶	26	۶	6
۷	27	۷	7
۸	28	۸	8
۹	29	۹	9
۱۰	30	۱۰	10
۱۱	31	۱۱	11
۱۲	32	۱۲	12
۱۳	33	۱۳	13
۱۴	34	۱۴	14
۱۵	35	۱۵	15
۱۶	36	۱۶	16
۱۷	37	۱۷	17
۱۸	38	۱۸	18
۱۹	39	۱۹	19
۲۰	40	۲۰	20

TABLE OF FIGURES. 3

Rekem.	Hind.	Rekem.	Hind.
۶۱	61	۶۱	41
۶۲	62	۶۲	42
۶۳	63	۶۳	43
۶۴	64	۶۴	44
۶۵	65	۶۵	45
۶۶	66	۶۶	46
۶۷	67	۶۷	47
۶۸	68	۶۸	48
۶۹	69	۶۹	49
۷۰	70	۷۰	50
۷۱	71	۷۱	51
۷۲	72	۷۲	52
۷۳	73	۷۳	53
۷۴	74	۷۴	54
۷۵	75	۷۵	55
۷۶	76	۷۶	56
۷۷	77	۷۷	57
۷۸	78	۷۸	58
۷۹	79	۷۹	59
۸۰	80	۸۰	60

Figure 2: Printed forms of Indic Siyaq Numbers (from Gladwin 1790: 2, 3).

4 TABLE OF FIGURES.

Rekem.	Hind.		Rekem.	Hind.	
٥٠٠	500	٥٠٠	٨١	81	
٦٠٠	600	٦٠٠	٨٢	82	
٧٠٠	700	٧٠٠	٨٣	83	
٨٠٠	800	٨٠٠	٨٤	84	
٩٠٠	900	٩٠٠	٨٥	85	
١٠٠٠	1000	١٠٠٠	٨٦	86	
٢٠٠٠	2000	٢٠٠٠	٨٧	87	
٣٠٠٠	3000	٣٠٠٠	٨٨	88	
٤٠٠٠	4000	٤٠٠٠	٨٩	89	
٥٠٠٠	5000	٥٠٠٠	٩٠	90	
٦٠٠٠	6000	٦٠٠٠	٩١	91	
٧٠٠٠	7000	٧٠٠٠	٩٢	92	
٨٠٠٠	8000	٨٠٠٠	٩٣	93	
٩٠٠٠	9000	٩٠٠٠	٩٤	94	
١٠٠٠٠	10,000	١٠٠٠٠	٩٥	95	
٢٠٠٠٠	20,000	٢٠٠٠٠	٩٦	96	
٣٠٠٠٠	30,000	٣٠٠٠٠	٩٧	97	
٤٠٠٠٠	40,000	٤٠٠٠٠	٩٨	98	
٥٠٠٠٠	50,000	٥٠٠٠٠	٩٩	99	
٦٠٠٠٠	60,000	٦٠٠٠٠	١٠٠	100	
٧٠٠٠٠	70,000	٧٠٠٠٠	٢٠٠	200	
٨٠٠٠٠	80,000	٨٠٠٠٠	٣٠٠	300	
٩٠٠٠٠	90,000	٩٠٠٠٠	٤٠٠	400	

Figure 3: Metal types showing forms of the ten thousands that are elongations of the alternate forms for the primary numbers (from Gladwin 1790: 4).

TABLE OF FIGURES. 5

Cowrit.	Gundabs.	Gundabs.	Annas.
$\frac{1}{4}$ — 1	17/ 16	✓ 1	/ 1 1
$\frac{1}{2}$ • 2	17/ 17	✓ 2	/ 2 2
$\frac{3}{4}$ — 3	17/ 18	✓ 3	/ 3 3
	19/ 19	✓ 4	/ 4 4
		✓ 5	/ 5 5
		✓ 6	/ 6 6
		✓ 7	/ 7 7
		✓ 8	/ 8 8
		✓ 9	/ 9 9
		✓ 10	/ 10 10
		✓ 11	/ 11 11
		✓ 12	/ 12 12
		✓ 13	/ 13 13
		✓ 14	/ 14 14
		✓ 15	/ 15 15

Observe, that Annas are distinguished from Gundabs by the stroke being placed to the left of the former, and on the right side of the latter.

Figure 4: Printed forms of Indic Siyaq Numbers (from Gladwin 1790: 5)

The *Rekem*, or *Siyak* characters, being only contractions of *Arabic* words, the following Table may serve to impress them on the memory.

Arabic Words.	Rekem.		Arabic Words.	Rekem.		Arabic Words.	Rekem.		
							joined.	separate.	
عشر	ع	10	احد عشر	له	11	ع د	له	عده	1
عشرين	عم	20	اثنا عشر	لعم	12	ع د و ان	ك	عدها	2
ثلاثين	مم	30	ثالثه عشر	لمم	13	ثالثه	م	لعم	3
اربعين	لعم	40	اربعه عشر	للعيم	14	اربعه	للع	لعمه	4
خمسين	صم	50	خمسه عشر	لمصم	15	خمسه	ص	لعم	5
ستين	سم	60	سته عشر	لمسم	16	سته	س	لعم	6
سبعين	هم	70	سبعه عشر	لمهم	17	سبعه	ه	لعم	7
ثمانين	لم	80	ثمانيه عشر	لملم	18	ثمانيه	م	لعم	8
تسعين	لمه	90	تسعه عشر	للمه	19	تسعه	ه	لعم	9

NOTE.		Arabic Words.	Rekem.		Arabic Words.	Rekem.	
It is necessary to remark regarding the two first digits, that when combined with tens, ل is a contraction of واحد, and ك of اثنا		الف	لست	1000	مايه	م	100
		الفان	لكس	2000	مايه تان	لم	200
		ثالثه آلاف	لمس	3000	ثالثه مايه	لعم	300
		اربعه آلاف	للمس	4000	اربعه مايه	لعم	400
		خمسه آلاف	لمص	5000	خمسه مايه	لعم	500
		سته آلاف	لمسم	6000	سته مايه	لعم	600
		سبعه آلاف	لمهم	7000	سبعه مايه	لعم	700
		ثمانيه آلاف	لملم	8000	ثمانيه مايه	لعم	800
		تسعه آلاف	للمه	9000	تسعه مايه	لعم	900

Figure 5: Table showing the Arabic sources of Siyaq forms (from Gladwin 1790: 6–7).

मोलाद

¹⁶ ॐ	¹⁵ ॐ	¹⁴ ॐ	¹³ ॐ	¹² ॐ	¹¹ ॐ	¹⁰ ॐ	⁹ ॐ	⁸ ॐ	⁷ ॐ	⁶ ॐ	⁵ ॐ	⁴ ॐ	³ ॐ	² ॐ	¹ ॐ
²⁸ ॐ	²⁷ ॐ	²⁶ ॐ	²⁵ ॐ	²⁴ ॐ	²³ ॐ	²² ॐ	²¹ ॐ	²⁰ ॐ	¹⁹ ॐ	¹⁸ ॐ	¹⁷ ॐ	¹⁶ ॐ	¹⁵ ॐ	¹⁴ ॐ	¹³ ॐ
³⁹ ॐ	³⁸ ॐ	³⁷ ॐ	³⁶ ॐ	³⁵ ॐ	³⁴ ॐ	³³ ॐ	³² ॐ	³¹ ॐ	³⁰ ॐ	²⁹ ॐ	²⁸ ॐ	²⁷ ॐ	²⁶ ॐ	²⁵ ॐ	²⁴ ॐ
⁴⁹ ॐ	⁴⁸ ॐ	⁴⁷ ॐ	⁴⁶ ॐ	⁴⁵ ॐ	⁴⁴ ॐ	⁴³ ॐ	⁴² ॐ	⁴¹ ॐ	⁴⁰ ॐ	³⁹ ॐ	³⁸ ॐ	³⁷ ॐ	³⁶ ॐ	³⁵ ॐ	³⁴ ॐ
⁵⁹ ॐ	⁵⁸ ॐ	⁵⁷ ॐ	⁵⁶ ॐ	⁵⁵ ॐ	⁵⁴ ॐ	⁵³ ॐ	⁵² ॐ	⁵¹ ॐ	⁵⁰ ॐ	⁴⁹ ॐ	⁴⁸ ॐ	⁴⁷ ॐ	⁴⁶ ॐ	⁴⁵ ॐ	⁴⁴ ॐ
⁶⁹ ॐ	⁶⁸ ॐ	⁶⁷ ॐ	⁶⁶ ॐ	⁶⁵ ॐ	⁶⁴ ॐ	⁶³ ॐ	⁶² ॐ	⁶¹ ॐ	⁶⁰ ॐ	⁵⁹ ॐ	⁵⁸ ॐ	⁵⁷ ॐ	⁵⁶ ॐ	⁵⁵ ॐ	⁵⁴ ॐ
⁷⁹ ॐ	⁷⁸ ॐ	⁷⁷ ॐ	⁷⁶ ॐ	⁷⁵ ॐ	⁷⁴ ॐ	⁷³ ॐ	⁷² ॐ	⁷¹ ॐ	⁷⁰ ॐ	⁶⁹ ॐ	⁶⁸ ॐ	⁶⁷ ॐ	⁶⁶ ॐ	⁶⁵ ॐ	⁶⁴ ॐ
⁸⁹ ॐ	⁸⁸ ॐ	⁸⁷ ॐ	⁸⁶ ॐ	⁸⁵ ॐ	⁸⁴ ॐ	⁸³ ॐ	⁸² ॐ	⁸¹ ॐ	⁸⁰ ॐ	⁷⁹ ॐ	⁷⁸ ॐ	⁷⁷ ॐ	⁷⁶ ॐ	⁷⁵ ॐ	⁷⁴ ॐ
⁹⁹ ॐ	⁹⁸ ॐ	⁹⁷ ॐ	⁹⁶ ॐ	⁹⁵ ॐ	⁹⁴ ॐ	⁹³ ॐ	⁹² ॐ	⁹¹ ॐ	⁹⁰ ॐ	⁸⁹ ॐ	⁸⁸ ॐ	⁸⁷ ॐ	⁸⁶ ॐ	⁸⁵ ॐ	⁸⁴ ॐ
३,०००	२,०००	१,०००	९००	८००	७००	६००	५००	४००	३००	२००	१००	०	०	०	०
४०,०००	३०,०००	२०,०००	१०,०००	९,०००	८,०००	७,०००	६,०००	५,०००	४,०००	३,०००	२,०००	१,०००	०	०	०
५०,०००	४०,०००	३०,०००	२०,०००	१०,०००	९,०००	८,०००	७,०००	६,०००	५,०००	४,०००	३,०००	२,०००	१,०००	०	०
५,०००,०००	४,०००,०००	३,०००,०००	२,०००,०००	१,०००,०००	९००,०००	८००,०००	७००,०००	६००,०००	५००,०००	४००,०००	३००,०००	२००,०००	१००,०००	०	०
२०,०००,०००	१०,०००,०००	९,०००,०००	८,०००,०००	७,०००,०००	६,०००,०००	५,०००,०००	४,०००,०००	३,०००,०००	२,०००,०००	१,०००,०००	०	०	०	०	०

Figure 6: Table showing Siyaq forms as used in South Asia (from Stewart 1825: Plate 7).

Table of Rakm.											
رقم	تعداد	رقم	تعداد	رقم	تعداد	رقم	تعداد	رقم	تعداد	رقم	تعداد
۱	۱	۱	۱	۱	۱	۱	۱	۱	۱	۱	۱
۲	۲	۲	۲	۲	۲	۲	۲	۲	۲	۲	۲
۳	۳	۳	۳	۳	۳	۳	۳	۳	۳	۳	۳
۴	۴	۴	۴	۴	۴	۴	۴	۴	۴	۴	۴
۵	۵	۵	۵	۵	۵	۵	۵	۵	۵	۵	۵
۶	۶	۶	۶	۶	۶	۶	۶	۶	۶	۶	۶
۷	۷	۷	۷	۷	۷	۷	۷	۷	۷	۷	۷
۸	۸	۸	۸	۸	۸	۸	۸	۸	۸	۸	۸
۹	۹	۹	۹	۹	۹	۹	۹	۹	۹	۹	۹
۱۰	۱۰	۱۰	۱۰	۱۰	۱۰	۱۰	۱۰	۱۰	۱۰	۱۰	۱۰
۱۱	۱۱	۱۱	۱۱	۱۱	۱۱	۱۱	۱۱	۱۱	۱۱	۱۱	۱۱
۱۲	۱۲	۱۲	۱۲	۱۲	۱۲	۱۲	۱۲	۱۲	۱۲	۱۲	۱۲
۱۳	۱۳	۱۳	۱۳	۱۳	۱۳	۱۳	۱۳	۱۳	۱۳	۱۳	۱۳
۱۴	۱۴	۱۴	۱۴	۱۴	۱۴	۱۴	۱۴	۱۴	۱۴	۱۴	۱۴
۱۵	۱۵	۱۵	۱۵	۱۵	۱۵	۱۵	۱۵	۱۵	۱۵	۱۵	۱۵
۱۶	۱۶	۱۶	۱۶	۱۶	۱۶	۱۶	۱۶	۱۶	۱۶	۱۶	۱۶
۱۷	۱۷	۱۷	۱۷	۱۷	۱۷	۱۷	۱۷	۱۷	۱۷	۱۷	۱۷
۱۸	۱۸	۱۸	۱۸	۱۸	۱۸	۱۸	۱۸	۱۸	۱۸	۱۸	۱۸
۱۹	۱۹	۱۹	۱۹	۱۹	۱۹	۱۹	۱۹	۱۹	۱۹	۱۹	۱۹
۲۰	۲۰	۲۰	۲۰	۲۰	۲۰	۲۰	۲۰	۲۰	۲۰	۲۰	۲۰

$\frac{1}{4}$ of an ānā; $\frac{1}{2}$ an ānā; $\frac{3}{4}$ of an ānā; one ānā
 Rs. As. $\frac{3}{4}$ = 1125, 11, 8 $\frac{3}{4}$ Rs. As. $\frac{3}{4}$ = 795, 11 $\frac{3}{4}$
 "مار چیس ۱۰۰۰" "مار چیس ۱۰۰۰"

Figure 7: Table showing Indic Siyaq Numbers (from Platts 1909: 60). It should be noted that the values of the examples shown at the bottom of the table may be incorrect. The example to the right, “مار چیس ۱۰۰۰” is given the value “Rs. 795, As. 11 $\frac{3}{4}$ ”; the actual value is “Rs. 297, As. 10”. There is a slight error in the example on the left, “مار چیس ۱۰۰۰ پائی”, which is given the value “Rs. 1125, As. 11, Pai 8 $\frac{3}{4}$ ”; the actual value is “Rs. 1125, As. 11, Pai 8 $\frac{1}{2}$ ”.

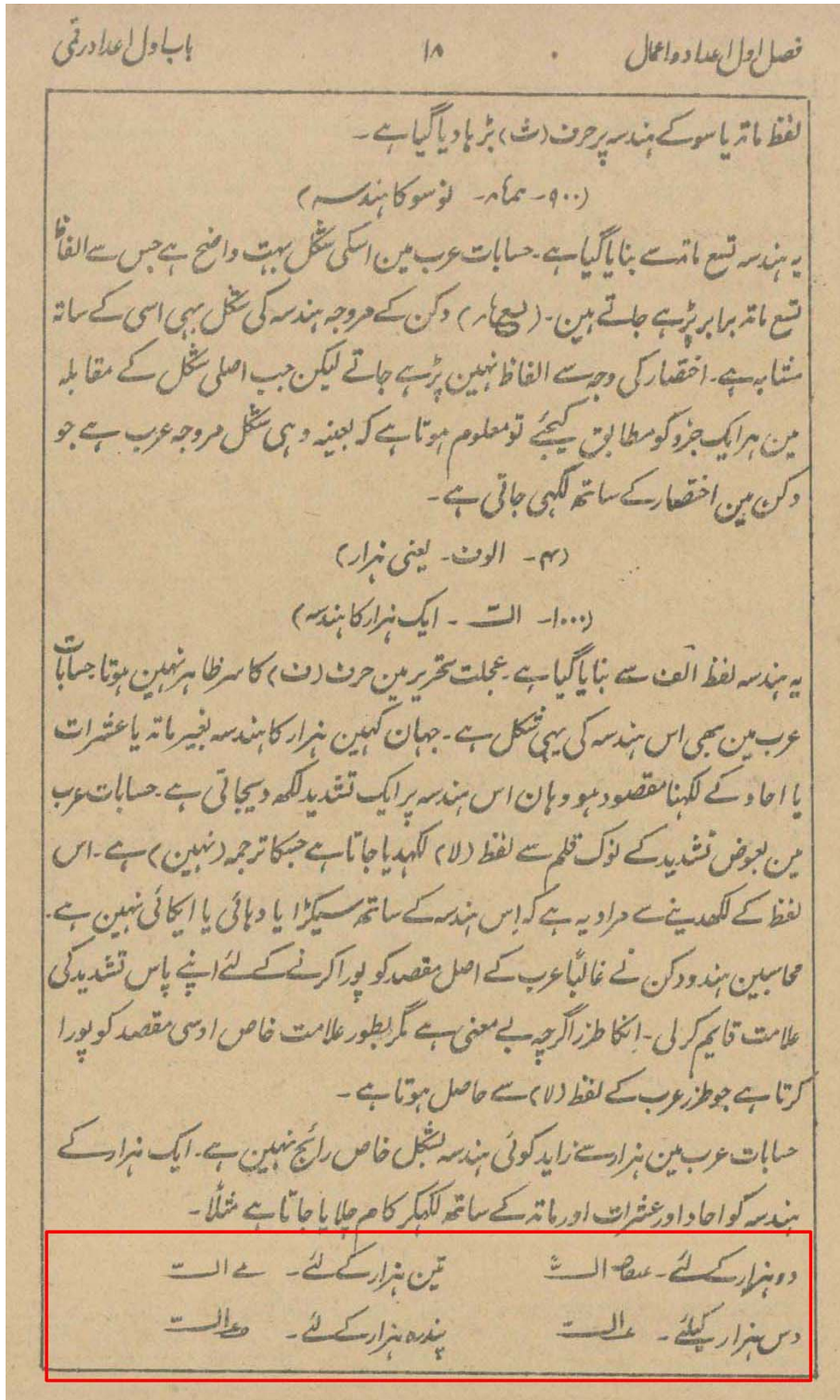


Figure 8: Deccani style for writing the thousands (from Aziz 1894: 18).

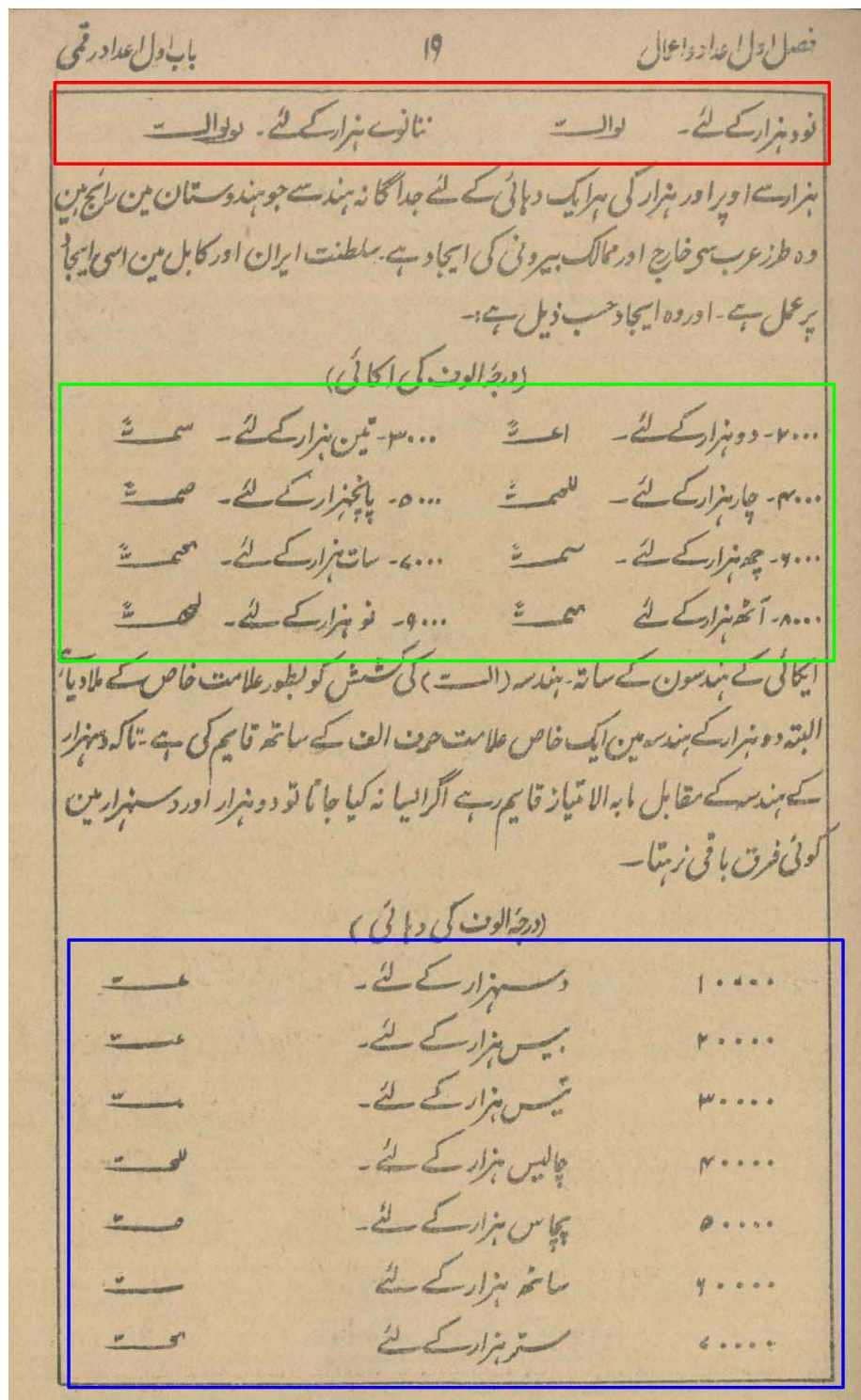


Figure 9: Forms of the thousands (red) in the Deccani style and the regular forms of the thousands (green). The ten thousands is boxed in blue (from Aziz 1894: 19).

فصل اول اعداد و اعمال	۲۰	باب اول اعداد رقمی
۸۰۰۰۰	اسی ہزار کے لئے۔	ت
۹۰۰۰۰	نوسے ہزار کے لئے۔	ت
درجہ الوف کے احاد کو عشرات کے ساتھ اسی طریق سے لایا جاتا ہے جس طریق سے عنوان نمبر (۲۰) میں دہائی کے ساتھ لایا ہے ملاحظہ ہو تمثیل ذیل :-		
۱۱۰۰۰۰	گیارہ ہزار کے لئے۔	ت
۱۲۰۰۰۰	بارہ ہزار کے لئے۔	ت
۱۳۰۰۰۰	تیرہ ہزار کے لئے۔	ت
۱۴۰۰۰۰	چودہ ہزار کے لئے۔	ت
۱۵۰۰۰۰	پندرہ ہزار کے لئے۔	ت
۱۶۰۰۰۰	سولہ ہزار کے لئے۔	ت
۱۷۰۰۰۰	سترہ ہزار کے لئے۔	ت
۱۸۰۰۰۰	اٹھارہ ہزار کے لئے۔	ت
۱۹۰۰۰۰	اویس ہزار کے لئے۔	ت
(۵) مائت الف - لاکھ		
زبان عرب میں لاکھ کے لئے کوئی خاص لفظ نہیں ہے اور نہ واضح نے اسکے لئے کوئی ہند وضع کیا ہے محاسبین دکن اور ہند بھی لفظی طریقہ پر لفظ (لاکھ) کے ساتھ احاد و عشرات کے ہندسے لکھتے ہیں۔		
ہندسہ ابجدی	طرز عرب	طرز ہند و دکن
۱۰۰۰۰۰	مائت الف	ل
۲۰۰۰۰۰	مائت الف	مال
۳۰۰۰۰۰	مائت الف	مے ل

Figure 10: Method of writing the ten thousands (blue; continued from figure 9), the primary multiples of the ten thousands (green) and lakhs (red) in the Deccani style (from Aziz 1894: 20).

بَاب اول اعداد رقی	۲۱	فصل اول اعداد و اعمال
للو لیس	للیع ارات	۳۰۰۰۰۰
صو لیس	صمار ارات	۵۰۰۰۰۰
ع لیس	ار ارات	۱۰۰۰۰۰۰
ع لیس	ا ارات	۲۰۰۰۰۰۰
للو لیس	ا ارات	۳۰۰۰۰۰۰
ص لیس	صمار ارات	۵۰۰۰۰۰۰
تمثیل ثانی کسرات کے ساتھ		
ص لیس	ار ارات	۱۵۰۵۸۶
ص لیس	صمار ارات	۵۹۶۲۶۸
ار ارات	ا ارات	۲۰۸۰۸۶۲
(۶- کرور)		
<p>کرور کے لئے بھی زبان عرب میں کوئی مخصوص لفظ اور رقی ہندسوں میں کوئی خاص نمبر نہیں ہے۔ اہل ہند ملفوظی طریقہ پر لفظ کرور کے ساتھ رقی اعداد و عشرات کا استعمال کرتے ہیں اور عرب میں اسی طرز پر عمل ہوتا ہے جس طرز پر لاکھ کے متعلق دیکھتے ہیں۔</p>		
طز ہند و دوکن	طز عرب	ہندسہ ابجدی
کرور	مار مار ارات	۱۰۰۰۰۰۰
عاکرور یا صفا کرور	مار مار ارات	۲۰۰۰۰۰۰
صہ کرور	صمار مار ارات	۵۰۰۰۰۰۰
ع کرور	صمار مار ارات	۱۰۰۰۰۰۰
بَاب دوم مراتب اعداد کے متعلق		
<p>رقمی اعداد کی تحریر میں ایجابی - دہائی - سیکڑے - ہزار - لاکھ اور کرور کے مراتب مخصوص ہیں</p>		

Figure 11: Method of writing lakhs (red; continued from figure 10) in the Deccani style and karors (blue) (from Aziz 1894: 21).

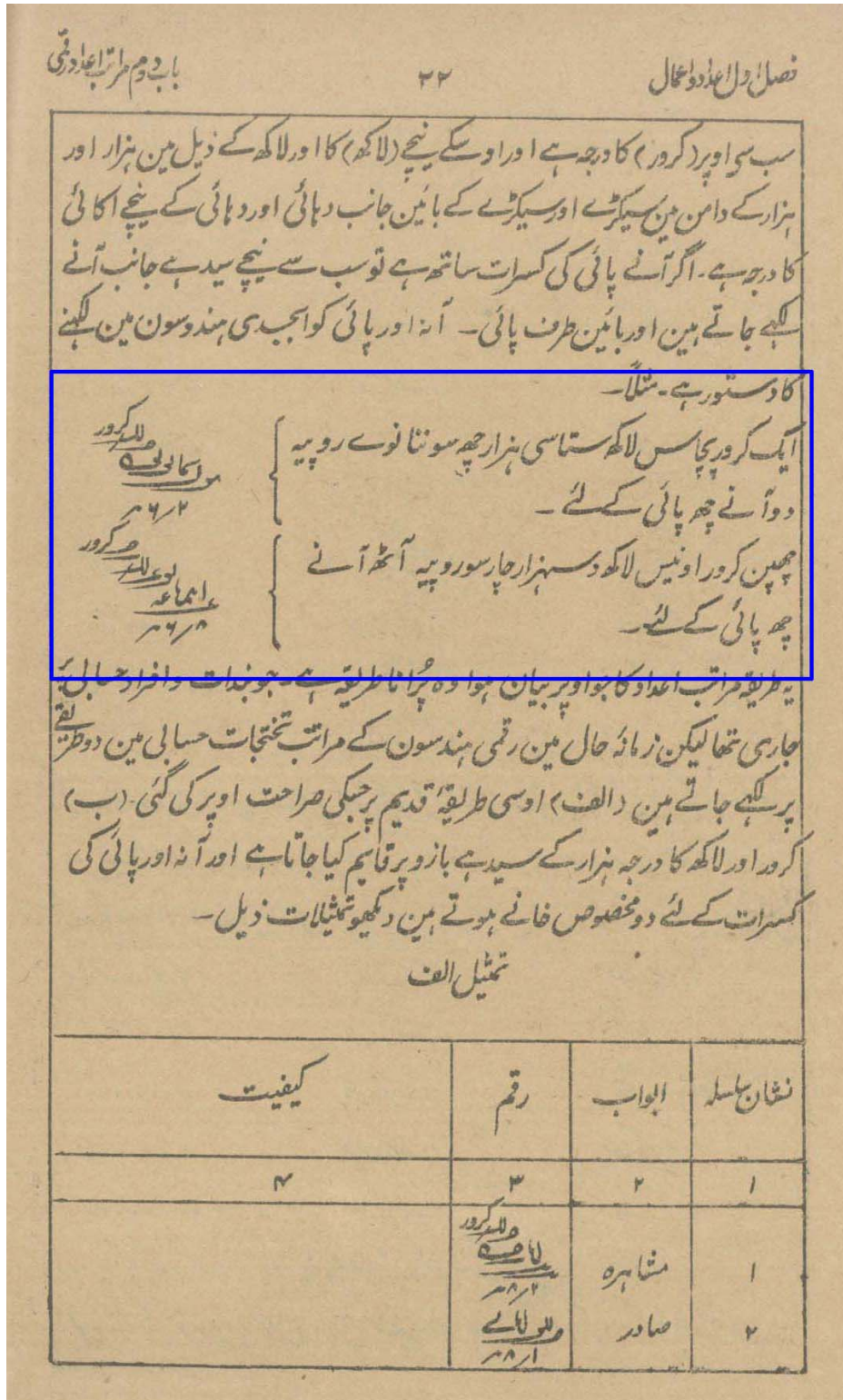


Figure 12: Examples of lakhs and crores written vertically in inverse order (from Aziz 1894: 22).

فصل اول اعداد و اعمال

۳۳

باب دوم مراتب اعداد رقی

تمثیل ب					
نشان عدد	ابواب	رسم			کیفیت
		روپیہ	آنہ	پائی	
۱	مشاہرہ	گردہ	۲	۸	
۲	صادر	مد	۱	۱۱	
۳	بھتہ	مد	۸	۹	

مراتب اعداد میں غلطی ہونے سے شمار اعداد میں فرق واقع ہوتا ہے مثلاً اگر کسی نے ماصلے کو بنا لحاظ مراتب اس طرح پر لکھا تو ترتیب کے اعتبار سے یہ ہندسہ پچاسی ہزار کا سمجھا جاوے گا۔ بنا علیہ مراتب اعداد کا لحاظ نہایت ضروری چیز ہے۔

جن اعداد کے مراتب صفر پر مبنی ہوتے ہیں وہ اس وقت تک صحت کے ساتھ نہیں معلوم ہو سکتے جب تک صفر اور مراتب صفر شمار نہ کئے جاویں بر خلاف رقی ہندون کے جنکو بغیر کسی شمار مراتب کے معلوم کیا جاسکتا ہے کہ یہ ہندسہ فلان رقم کا ہے۔ اور یہ صفت خاص مکتوبی طریقہ کی ہے۔

آنہ اور پائی کی کسرات کا مرتبہ اوپر بیان ہو چکا ہے لیکن جدید طریقہ کی رو سے آنہ کا اشارہ ایک سادہ مرکز کے ذریعہ سے کیا جاتا ہے اور پائی کا اشارہ بعلامت خاص جیسے ۔ آنہ کی علامت پر جو اشارہ خاص پائی کے لئے بڑھایا گیا ہے وہ حقیقت لفظ پائی کا سر حرف ہے۔

بعض محاسبین انگریزی طریقہ پر آنہ اور پائی کو ایک سادہ مرکز کے دونوں جانب لکھتے ہیں یعنی سپد ہے جانب آنہ کا ہندسہ لکھا جاتا ہے۔ بائیں جانب پائی کا ہندسہ۔ جیسے

Figure 13: More examples of complex numbers (from Aziz 1894: 23).

فصل اول اعداد و اعمال ۲۵ باب سوم عمل میزان

کے ذیل میں لکھی جاتی ہے ملاحظہ ہو تمثیل ذیل۔

کیفیت	نظم				البواب	تعداد
	جملہ	متفرقات	صادر	تختواہ		
۷	۶	۵	۴	۳	۲	۱
	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	علاقہ مالگنداری علاقہ بندوبست علاقہ جنگلات علاقہ انعام	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$
	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$	میزان	$\frac{۱۰۰}{۱۰۰}$ $\frac{۱۰۰}{۱۰۰}$

صحت میزان کی جانچ کا طریقہ | میزان کی صحت کو جانچنے کا عام طریقہ یہ ہے کہ عمل میزانی کو مکرر دیکھ لیا جاوے۔ لیکن بعض نمونوں کی ترتیب خود ایسی ہوتی ہے جس میں صحت عمل کا اطمینان مستوفی کے ذریعہ سے حاصل ہو سکتا ہے۔

مستوفی عربی زبان کا لفظ ہے۔ جسکے لغوی معنی زبان فارسی میں فراگرفتن اور زبان اردو میں پورا لینے کے ہیں۔ مستوفی مجازاً اوس شخص یا اوس آلہ یا طریقہ عمل کو کہہ سکتے ہیں جس سے حساب کی جانچ ہو سکتی ہو۔ اصطلاح سیاق میں مستوفی سے وہ عمل جمع یا تفریق مراد ہے جو میزانی اعداد میں واقع ہو جسکے ذریعہ سے اعداد میزان کی صحت یا غلطی پر اطمینان حاصل کیا جاسکے۔ دیکھو تختہ تذکرہ صدر کی میزان کو جسکے خانہ ہائے ۳ و ۴ و ۵ کا جملہ مساوی ہے۔ رقم خانہ ۶ کے اسی عمل کا نام مستوفی ہے اور بدین وجہ کہ رقم خانہ ہائے

Figure 14: Examples of complex numbers showing currency notation (from Aziz 1894: 25). Note the positioning of small currency units beneath the sequence of Siyaq numbers.

SYMBOL	VALUE	SYMBOL	VALUE	SYMBOL	VALUE
۱	-/-/3	۱	-/-/9	۱	-/1/3
۱۰	-/-/6	۱۰	-/1/-	۱۰	-/1/6
SYMBOL	VALUE	SYMBOL	VALUE	SYMBOL	VALUE
۱۱	-/1/9	۱۲	12/-/-	۱۳	70/-/-
۱۲	-/2/-	۱۳	13/-/-	۱۴	80/-/-
۱۳	1/-/-	۱۴	14/-/-	۱۵	90/-/-
۱۴	2/-/-	۱۵	15/-/-	۱۶	100/-
۱۵	3/-/-	۱۶	16/-/-	۱۷	200/-
۱۶	4/-/-	۱۷	17/-/-	۱۸	300/-
۱۷	5/-/-	۱۸	18/-/-	۱۹	400/-
۱۸	6/-/-	۱۹	19/-/-	۲۰	500/-
۱۹	7/-/-	۲۰	20/-/-	۳۰	600/-
۲۰	8/-/-	۳۰	30/-/-	۴۰	700/-
۲۱	9/-/-	۴۰	40/-/-	۵۰	800/-
۲۲	10/-/-	۵۰	50/-/-	۶۰	900/-
۲۳	11/-/-	۶۰	60/-/-	۱۰۰۰	1,000/-
				لاکھ	lakh/-

Figure 15: Table showing Indic Siyaq forms (from Barker 1967: 356, 357). Note the methods of writing currency and fractions.

8.6. Sums: Both India and Pakistan now have a decimal coinage system, a rupee being divided into one hundred paises. In Urdu, the decimal point is written as: ؄ . Examples:

$$۱۵۰ = \text{Re. 1.00} \quad ۵۰ = 50 \text{ p.} \quad ۵۰۵ = 5 \text{ p.} \quad ۱۵۱۴ = \text{Rs. 1.14}$$

8.7. Before the currency was reformed in the two countries, a rupee was divided into sixteen annas or sixty-four pice (paisa). There was then also a different system, besides the numerals, for writing sums.

؁ = R. 1/-	؂ = Rs. 2/-	؃ = Rs. 3/-
؄ = Rs. 4/-	؅ = Rs. 5/-	؆ = Rs. 6/-
؇ = Rs. 7/-	؈ = Rs. 8/-	؉ = Rs. 9/-
؊ = Rs. 10/-	؋ = Rs. 11/-	، = Rs. 12/-
؍ = Rs. 13/-	؎ = Rs. 14/-	؏ = Rs. 15/-
ؐ = Rs. 16/-	ؑ = Rs. 17/-	ؒ = Rs. 18/-
ؓ = Rs. 19/-	ؔ = Rs. 20/-	ؕ = Rs. 30/-
ؖ = Rs. 40/-	ؗ = Rs. 50/-	ؘ = Rs. 60/-
ؙ = Rs. 70/-	ؚ = Rs. 80/-	؛ = Rs. 90/-
؜ = Rs. 100/-	؝ = 1/4 anna or 1 pice	
؞ = 1/2 anna or 2 pice	؟ = 3/4 anna or 3 pice	ؠ = 1 anna
ء = 1 1/4 annas	آ = 1 1/2 annas	أ = 2 annas
ؤ = Rs. 3 and 2 annas & 3 pice		
إ		

Figure 16: Table showing Indic Siyaq forms (from Naim 1999: 49, 50).

لفظ جمع اختصار کیا گیا	جو صورت قرار دی گئی
عہد	عہد، عہد
عہد ان	عہد ان
ثلاثہ	ے
اربعہ	للعہ
خمسہ	صہ صہ
ستہ	ے
سبعہ	مہ
ثانیہ	تہ
تسہ	لہ
عشر	عہ

Figure 17: The Arabic sources of the Indic Siyaq numbers (from Muhazzab 195-?: 51).

رقوم (ر + قو + م)	[اسم - مونث - جمع]
-	رقمیں - ہند سے اور اعداد کی شکلیں 'مثلاً' -
-	(اردو) ۱، ۲، ۳، ۴، ۵، ۶، ۷، ۸، ۹، ۱۰ -
-	(انگریزی) 1-2-3-4-5-6-7-8-9-10 -
-	عہ - عہ - ے - للعہ - صہ - ے - مہ - مہ - لعہ - عہ -
-	عہ -
-	(رومن) i - ii - iii - iv - v - vi - vii - viii - ix - x -
-	واحد: رقم -

Figure 18: Table showing Indic Siyaq forms (from Muqtadirah Qaumi Zaban 2001: 718).

رقم - ع . اسم مؤنث (۱) حظ - نوشتہ - تحریر (۲) نقش - مہر نشان - چھاپ -
 چھاپا (۳) - ۱) ہندسہ - عدد - روپوں کے وہ نشان یا ہندسے جو ایک
 خاص صورت میں الفاظ کا اختصار کر کے بنائے گئے ہیں جیسے عدد
 کی صورت عظم عددوں کا لکھا جاتا ہے - ۱) رجبہ لکھو - چھہ - چھہ - چھہ -
 سب سے بڑا نمائندہ نمبر - ۱) ستہ - ۱) چھہ - ۱) چھہ - ۱) چھہ - ۱) چھہ -
 کے ہندسے جو قریب قریب روپوں کے ہندسوں کے مطابق ہیں
 (۴) - ۱) ٹوم - زیور - گھنا پاتا (۵) - ۱) سونے کی چڑیا - مالدار آدمی
 دو لقمہ (۶) - ۱) اعجاز - عجیب آدمی چلتا ہوا پیرزہ - چالاک - ہوشیار
 (۷) - ۱) نوچی - کم سن کسی (۸) - ۱) جنس - بھانت - رقم + ڈھنگ - طو
 طریق (۹) - ۱) بچی - تشخیص کی شرح - شرح لگان (۱۰) - ۱) جو اہرات
 جو اہر (۱۱) - ۱) مال و دولت - جو کھوں - قیمتی چیز +
 لیکے دل آپ جگر چھوڑ گئے سینے میں + ایک رقم یا درسی ایک رقم بھول گئے (دلغہ)
 تمہیں ناز ہو نہ کہو نہ کہو کہ لیا ہے غ کا دل + یہ رقم نہ ہاتھ لگتی نہ یہ افتخار ہوتا

Figure 19: Table showing Siyaq forms as used in South Asia (from Dhillavi 1974: 363).

پرکنہ کا کماری

عس

منقضي لغایت اساتذہ قسط سانوں

عس للہ

وجوہ

آسامی روپیہ افزون

۱۳ سانوں ۶ و عس

۲۵ منہ ۱۰ لکھ

۱۰ لکھ

۶

تیر

۱۰ لکھ

۶

Figure 20: Revenue record from Bengal containing Indic Siyaq Numbers (from Gladwin 1790: 46). Note the ascending vertical manner of writing the Siyaq numbers and the placement of small currency values beneath the numbers.

ميا
 آمدنی خزانہ محالات ضلع ساہرس وغیرہ سنہ ۱۹۰۱
 ۱۸ سوال
 یوم الجمعہ
 ۲۹ ماہ بہارون ۱۲ سبتمبر
 تھو
 جاکموان سا کہہ حراچی
 ۱۰
 ۲
 منہا صرف وغیرہ
 ۱۰
 صرف
 کموزن
 عفا
 ۱۰/۹
 ۱۰/۱۳
 لاکھ
 لاکھ
 منہا صرف
 لاکھ
 ۱۰
 سنوات
 لاکھ
 منہا صرف وغیرہ
 ۱۰/۳
 عفا
 ۱۰/۱۳

Figure 21: Another revenue record from Bengal containing Indic Siyaq Numbers (from Gladwin 1790: 63). Note the ascending vertical manner of writing the Siyaq numbers and the placement of small currency values beneath the numbers.



Figure 22: A one-rupee note from Hyderabad State from the 1940s showing numbers written in Indic Siyaq, as well as in the Telugu, Kannada, Devanagari, Arabic, and Latin scripts. The **ع** INDIC SIYAQ NUMBER ONE is shown in the upper right-hand corner of the reverse. Image courtesy of Rezwan Rezack.



Figure 23: A five-rupee note from Hyderabad State from the 1940s showing numbers written in Indic Siyaq, as well as in the Telugu, Kannada, Devanagari, Arabic, and Latin scripts. The value / 𑂔 <INDIC SIYAQ NUMBER FIVE, INDIC SIYAQ RUPEE MARK> is shown on the obverse.



Figure 24: A ten-rupee note from Hyderabad State from the 1940s showing numbers written in Indic Siyaq, as well as in the Telugu, Kannada, Devanagari, Arabic, and Latin scripts. The 10 INDIC SIYAQ NUMBER TEN is shown in the center of the reverse. Image courtesy of Rezwan Rezack.

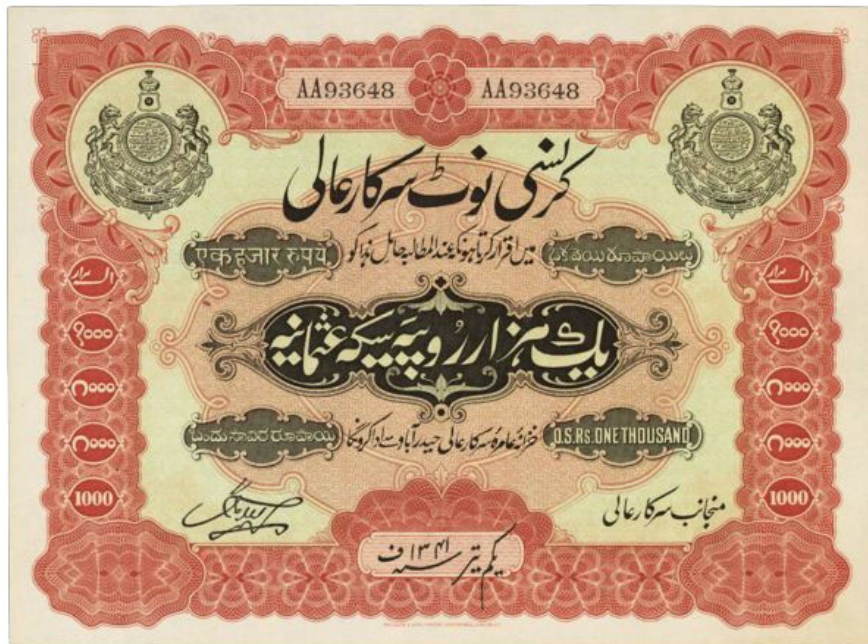



Figure 25: A thousand-rupee note from Hyderabad State from the 1940s showing numbers written in Indic Siyaq, as well as in the Telugu, Kannada, Devanagari, Arabic, and Latin scripts. The value 1000 INDIC SIYAQ NUMBER ONE THOUSAND followed by the Urdu هزار (= ہزار) *hazār*, is shown on the front and in the top right corner of the reverse.



Figure 26: A sixty rupee stamp paper from 1807. The value  INDIC SIYAQ NUMBER SIXTY is shown in the stamp.

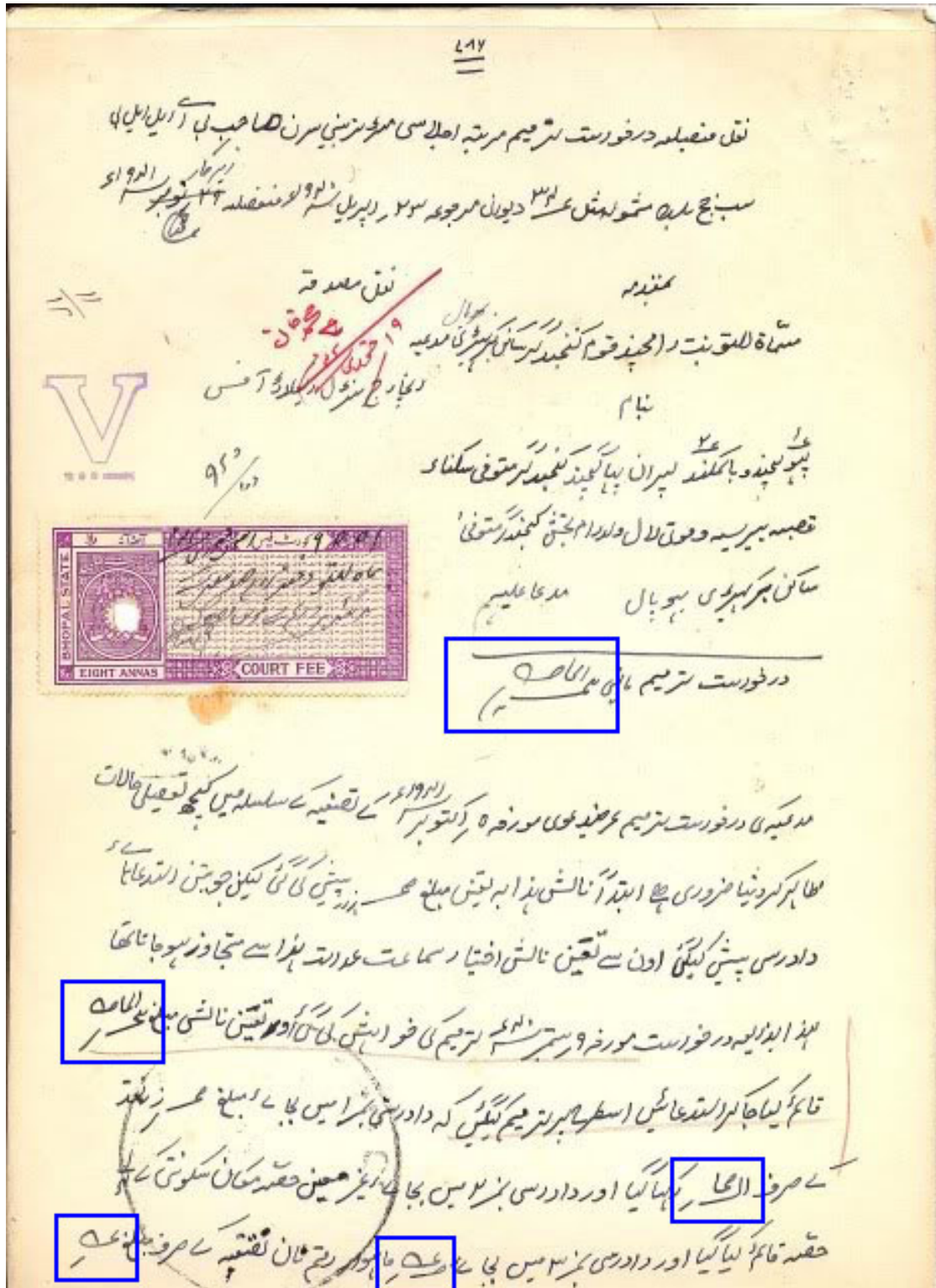


Figure 27: A sixty rupee stamp paper from 1807.

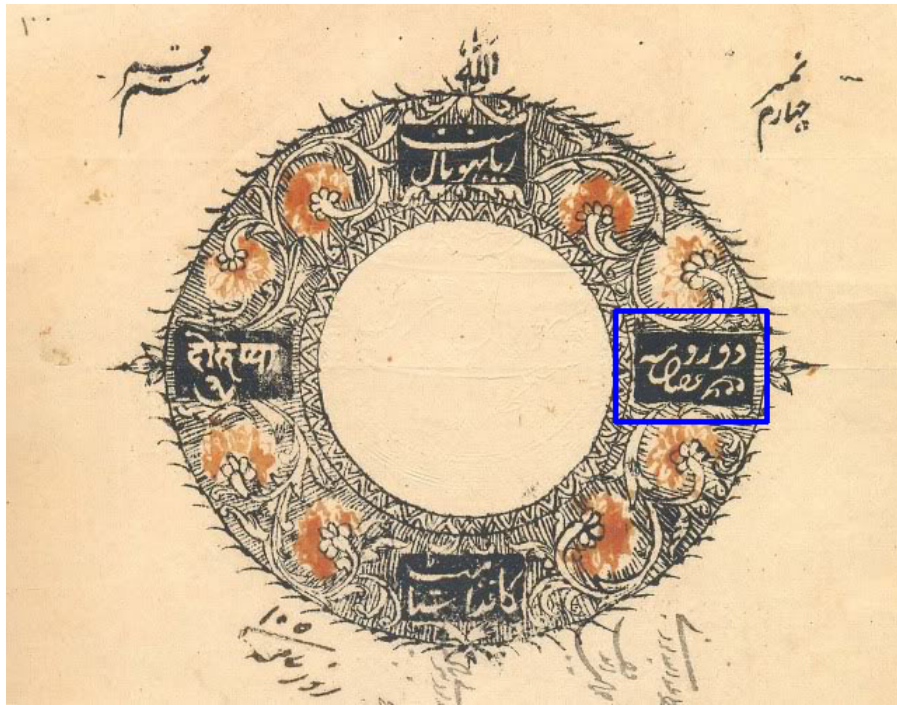


Figure 28: A two anna stamp paper from Bhopal State. The number two is written using the stylistic alternate عع of عع INDIC SIYAQ NUMBER TWO is shown in the stamp.

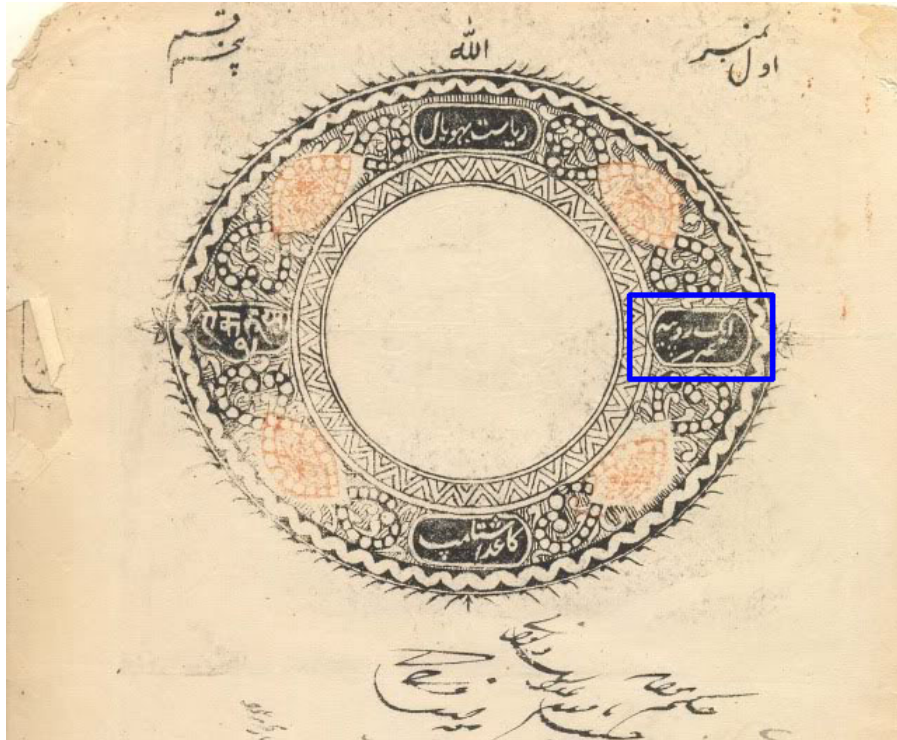


Figure 29: A one rupee stamp paper from Bhopal State. The number one is written using the stylistic alternate ع of عع INDIC SIYAQ NUMBER ONE is shown in the stamp.

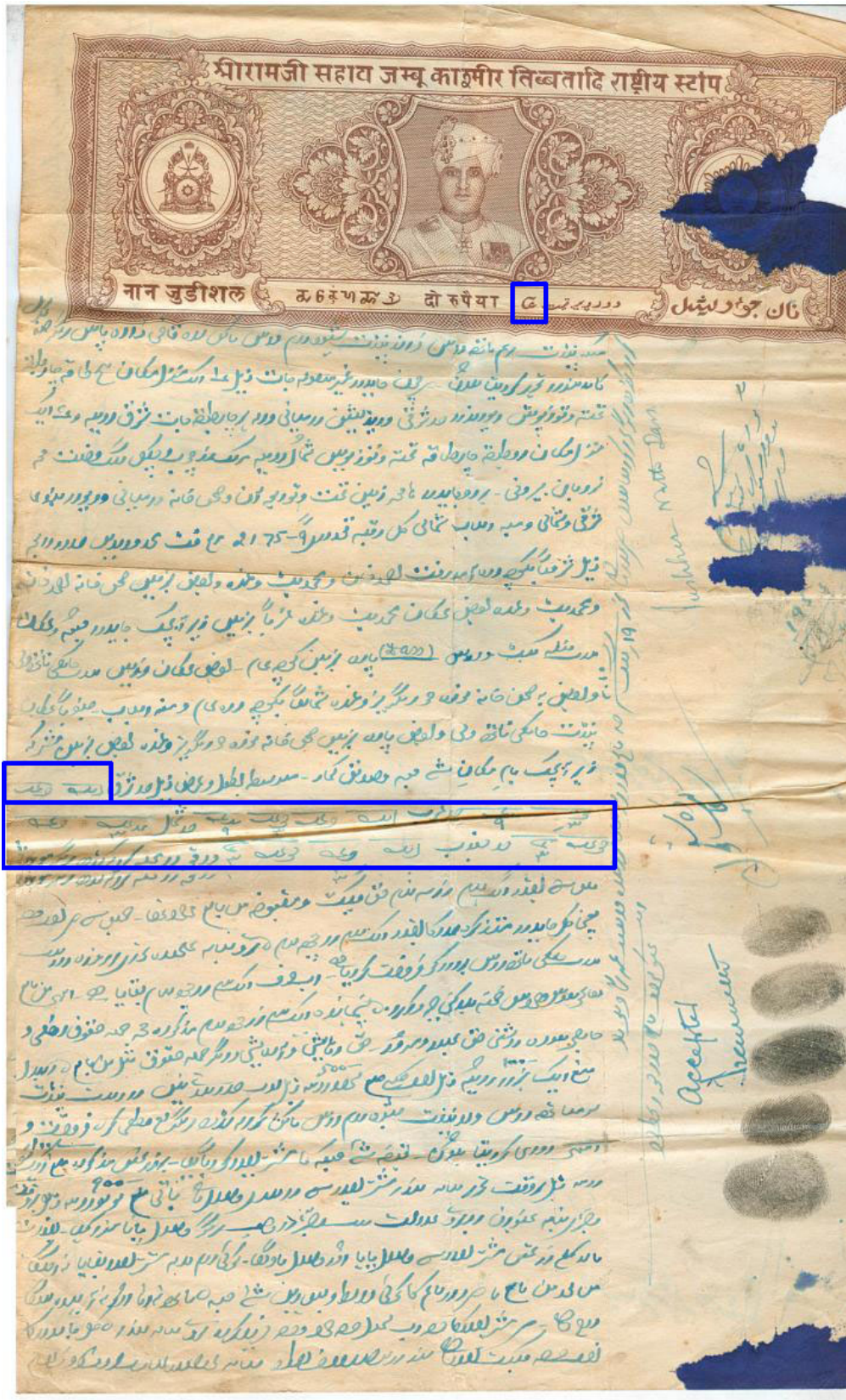


Figure 30: Non-judicial stamp paper from Kashmir State, 1953.

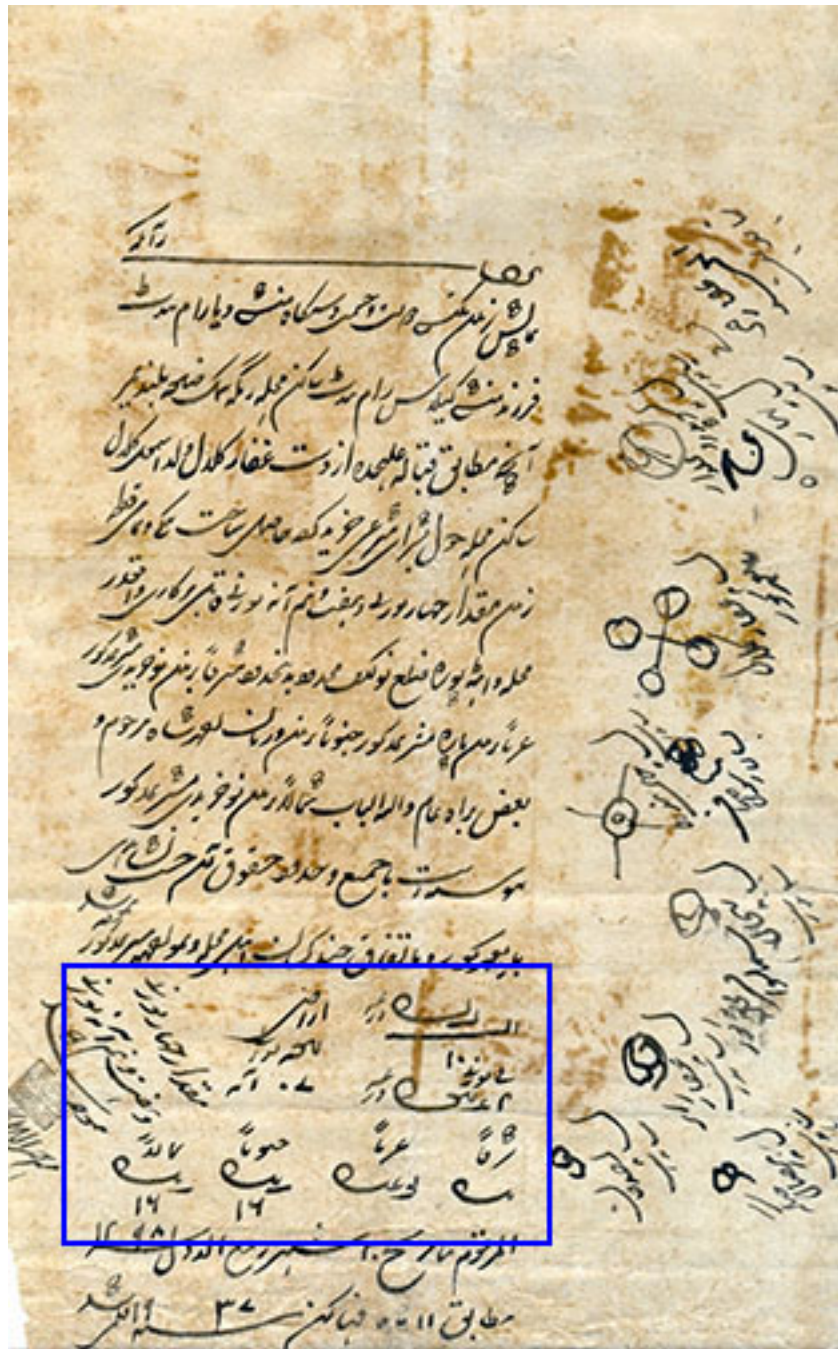


Figure 31: Non-judicial stamp paper from Kashmir State (1880) containing Indic Siyaq numbers.



Figure 32: Revenue stamp paper from Pataudi State containing Indic Siyaq numbers.



Figure 33: Stamp paper from Nabha State 19th century showing usage of Indic Siyaq.

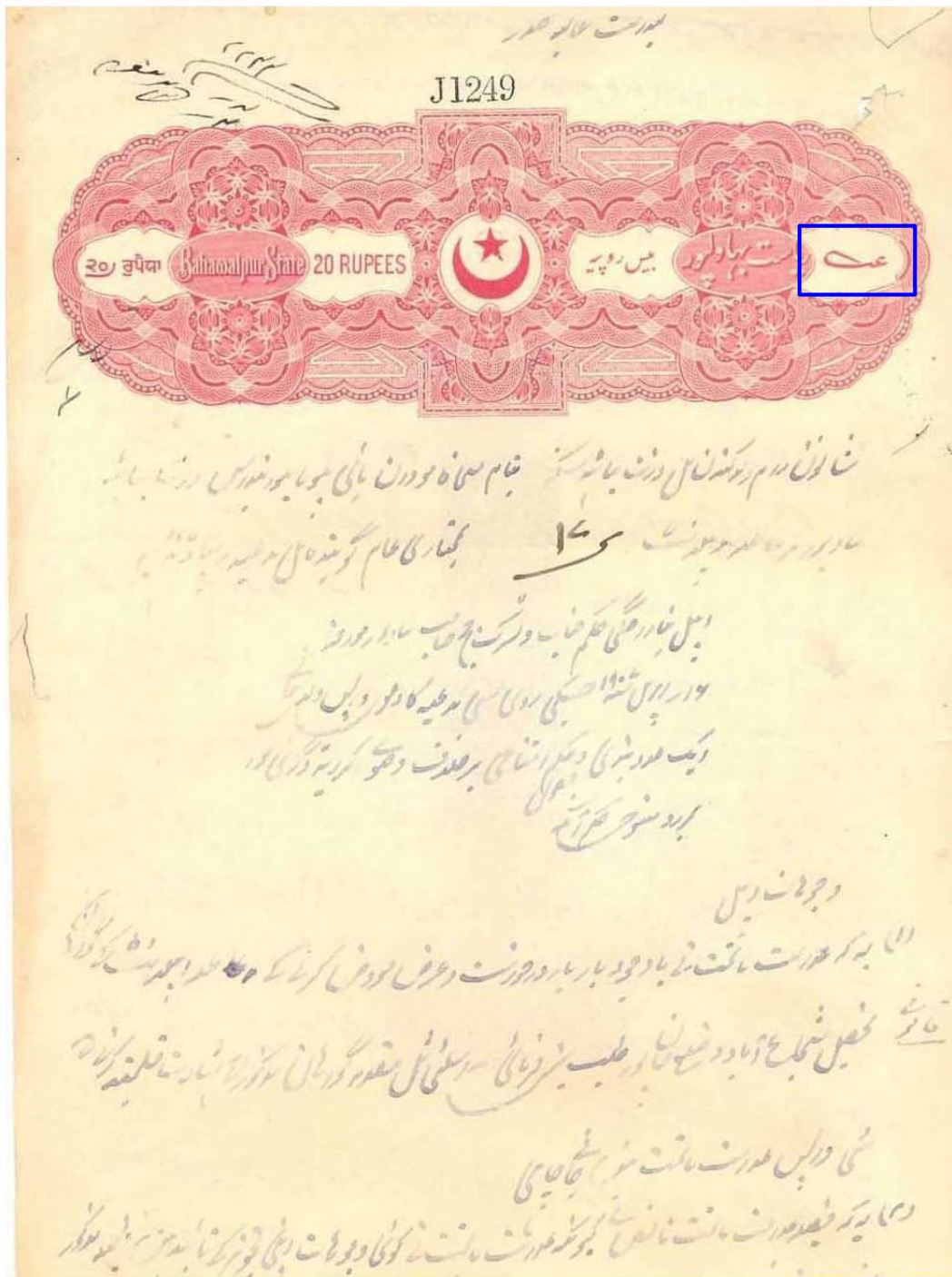


Figure 34: Stamp paper from Bhawalpur State showing usage of Indic Siyaq.

**ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹**

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

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

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

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

A. Administrative

1. Title:	Proposal to encode Indic Siyaq Numbers in Unicode
2. Requester's name:	<i>Anshuman Pandey / Script Encoding Initiative</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>Liaison contribution</i>
4. Submission date:	<i>5 November 2015</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	Yes
(or) More information will be provided later:	

B. Technical – General

1. Choose one of the following:	
a. This proposal is for a new script (set of characters):	Yes
Proposed name of script:	<i>Indic Siyaq Numbers</i>
b. The proposal is for addition of character(s) to an existing block:	
Name of the existing block:	
2. Number of characters in proposal:	68
3. Proposed category (select one from below - see section 2.2 of P&P document):	
A-Contemporary <input type="checkbox"/> B.1-Specialized (small collection) <input type="checkbox"/> B.2-Specialized (large collection) <input checked="" type="checkbox"/>	
C-Major extinct <input type="checkbox"/> D-Attested extinct <input type="checkbox"/> E-Minor extinct <input type="checkbox"/>	
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/> G-Obscure or questionable usage symbols <input type="checkbox"/>	
4. Is a repertoire including character names provided?	Yes
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	
b. Are the character shapes attached in a legible form suitable for review?	
5. Fonts related:	
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>Anshuman Pandey</i>
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	<i>Anshuman Pandey</i>
6. References:	
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	Yes
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	Yes
7. Special encoding issues:	
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?	Yes

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see Unicode Character Database (<http://www.unicode.org/reports/tr44/>) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

¹ Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? If YES explain	No
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)? If YES, with whom? If YES, available relevant documents:	Yes <i>Brian Spooner (University of Pennsylvania), Chander Shekhar (Delhi University)</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	Yes <i>see text of proposal</i>
4. The context of use for the proposed characters (type of use; common or rare) Reference:	Common
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	Yes <i>See text of proposal</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:	N/A
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	Yes
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:	No
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:	No
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:	No
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided? If YES, reference: Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? If YES, reference:	Yes Yes <i>See text of proposal</i>
12. Does the proposal contain characters with any special properties such as control function or similar semantics? If YES, describe in detail (include attachment if necessary)	No
13. Does the proposal contain any Ideographic compatibility characters? If YES, are the equivalent corresponding unified ideographic characters identified? If YES, reference:	No