

KNOWING OUR NUMBERS

Introduction

Knowing our numbers help us in counting objects in large numbers and representing them through numerals. Numbers help in communicating through suitable number names and to count concrete objects. We use numbers and know many things about them. We can also add, subtract, multiply and divide them. Looking for patterns in numbers, finding the greatest and smallest numbers or the place value and face value of a digit and many other interesting things regarding numbers were also studied.

Numbers

(a) Natural Numbers:

Counting numbers are called **natural numbers**. It is denoted by 'N'.

$N = 1, 2, 3, 4, 5, 6 \dots, \text{etc.}$, are all-natural numbers.

(b) Whole Numbers:

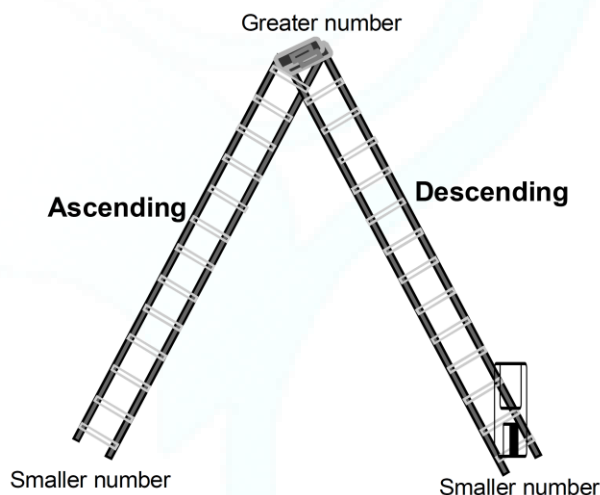
All-natural numbers together with 0 (zero) are called whole numbers. It is denoted by 'W'.

$W = 0, 1, 2, 3, 4 \dots, \text{etc.}$, are whole numbers.

NOTE : Every natural number is a whole number but every whole number is not a natural number as 0 is a whole number which is not a natural number.

Comparison of Numbers

- Greater number has a greater number of digits.
- To compare two numbers having same number of digits, start comparing from the left most position. If the left most digits are equal, move to the next digits.



Ascending order – Arrangement of numbers from smallest to largest.

Descending order – Arrangement of numbers from largest to smallest.

Example 1:

Which is greater of 270346 and 48356?

Solution: 270346 has 6 digits

48356 has 5 digits

6 digits are more than 5 digits

$\therefore 270346$ is greater than 48356 or $270346 > 48356$
Greater number has more number of digits

Example 2:

Find the greatest and the smallest numbers from the following group of numbers :

23787, 6895, 24569, 24659

Solution: Greatest number : 24659

Smallest number : 6895



Example 3:

Arrange the following numbers in ascending order : 257536, 38952, 385081, 365062

Solution: The smallest number is 38952. Other numbers greater than 38952, in order are 257536, 365062 and 385081.

∴ The numbers in ascending order are:
38952, 257536, 365062, 385081

Example 4:

Arrange the following numbers in descending order : 19710, 887151, 453212, 925473

Solution : The greatest number is 925473. Other numbers smaller than 925473 in order are 887151, 453212 and 19710.

∴ The numbers in descending order are :
925473, 887151, 453212, 19710

Predecessor-Successor of A Number

Predecessor :

Predecessor is 1 less than the given number.

Ex. : Predecessor of 59028 is 59027.

Successor :

Successor is 1 more than the given number.

Ex. Successor of 9999 is 10000.

FUNDAMENTAL UNLOCKED- (FU#1)

- Q.1** Write the predecessor of
(a) -85 (b) 0 (c) 232
- Q.2** Write the successor of
(a) -1 (b) -100
- Q.3** Subtract the successor of 99 from the predecessor of 201.
- Q.4** Arrange the following in ascending order :
1345, 87654, 98845, 10034, 2453
- Q.5** Arrange the following in descending order :
25286, 25245, 25270, 25210

Making Number Without repetition of digits:

(i) Making number without repetition of digits :

In case of non-repetition of digits, it is better if we start making the number from left.

Example 5: Write the greatest and the smallest 5-digit numbers by using each of the digits 8, 4, 7, 0, 2 only once.

Solution: For the greatest number, we write the greatest digit 8 in the T-thousands column. Next smaller digit in the thousand's column and so on.

∴ The greatest number = 87420.

T-Th	Th	H	T	O
8	7	4	2	0

For the smallest number, we write the smallest digit in the T-thousands column. But here 0 is the smallest digit. 0 is not written on the extreme left of a number. So, we write 2 in the thousand's column and 0 in the hundred's column. Next digit greater than 2 is written in the hundred's column and so on.

∴ The smallest number = 20478

T-Th	Th	H	T	O
2	0	4	7	8

Example 6:

Make the greatest and the smallest 5-digit numbers using any five different digits with 4 in the tens place.

Solution: First of all, write 4 in the ten's column. For the greatest number, we write the greatest digit 9 in the thousand's column, next smaller digit in the thousand's column so on.

T-Th	Th	H	T	O
9	8	7	4	6

∴ The greatest number = 98746

For the smallest number also, write 4 in the ten's column first of all. Then write 0 in the thousand's column. Write 1 in the T-thousands column. Next greater digit in the hundred's column and so on.

∴ The smallest number = 10243

T-Th	Th	H	T	O
1	0	2	4	3




(ii) Making number with repetition of digits :

In case of repetition of digit, it is better if we start making number from right.

Example 7:

Write the greatest and smallest numbers of 4 digits using all the digits 8, 0, 5.

Solution: For greatest number, select the smallest digit 0 and write in the one's column. Next greater digit is written in the ten's column. Next greater digit 8 is written in the hundred's column.

Since no digit greater than 8 given, so we repeat 8 in the thousand's column.

Th	H	T	O
8	8	5	0

∴ The greatest number = 8850

For smallest number, select the greatest digit 8 and write in the one's column. Next smaller digit in tens column and so on. Repeat the smallest digit in the end. But here 5 is smaller than 8 and then comes 0 which cannot be repeated in the end. So, we write 5 in the end and repeat 0 in the tens place.

Th	H	T	O
5	0	0	8

∴ The smallest number = 5008

NOTE :

- For greatest number, greatest digit is repeated.
- For smallest number, smallest digit is repeated.

Face Value and Place Value

The basis of the number system is place value. It is the place value which gives value to the number.

→ Definition :

Face value of a digit in a numeral is the value of the digit itself at whatever place it may be.

Place value of a digit in a given number is the value of the digit because of the place or the position of the digit in the number.

Place-value of a digit = Face-value of a digit × value of the place

Place value and Face Value :

Every digit has two values – the place value and the face value. The face value of a digit does not change while its place value changes according to its position and number.

Example 8: Write the place value and face value of 53,694

Number	Digit	Face Value	Place Value
53,694	5	5	50,000
	3	3	3,000
	6	6	600
	9	9	90
	4	4	4

Expanded Form

If we express a given number as the sum of its place value, it is called its expanded form.

Example 9:

Express

(i) 3,64,029

(ii) 2,75,00,386 in expanded form.

Solution : (i) Place value of 3 = 3×100000

Place value of 6 = 6×10000

Place value of 4 = 4×1000

Place value of 0 = 0×100

Place value of 2 = 2×10

Place value of 9 = 9×1

∴ The expanded form of 3,64,029 is

$3 \times 100000 + 6 \times 10000 + 4 \times 1000 + 0 \times 100 + 2 \times 10 + 9 \times 1$

(ii) The expanded form of 2,75,00,386 is

$2 \times 10000000 + 7 \times 1000000 + 5 \times 100000 + 0 \times 10000 + 0 \times 1000 + 3 \times 100 + 8 \times 10 + 6 \times 1$

Example 10:

Write the following in expanded form and write the place value of 24513768.

Solution :

C	TL	L	T-Th	T	H	T	O
2	4	5	1	3	7	6	8





Here the place value of 2 is 2,00,00,000 (two crore).

The place value of 4 is 40,00,000 (forty lakh).

The place value of 5 is 5,00,000 (five lakh).

The place value of 1 is 10,000 (ten thousand).

The place value of 3 is 3000 (three thousand).

The place value of 7 is 700 (seven hundred).

The place value of 6 is 60 (sixty).

The place value of 8 is 8 (eight).

In words : Two crore forty-five lakh thirteen thousand seven hundred sixty-eight.

In figures : 2, 45, 13, 768

In expanded notation : $2,00,00,000 + 40,00,000 + 5,00,000 + 10,000 + 3,000 + 700 + 60 + 8$
 $= 2 \times 1,00,00,000 + 4 \times 10,00,000 + 5 \times 1,00,000 + 1 \times 10,000 + 3 \times 1000 + 7 \times 100 + 6 \times 10 + 8 \times 1$

Example 11:

Write the following in expanded form and write the place value of the digit 3 in each case.

(a) 6307825

(b) 80930090

Solution :

(a) $6307825 = 6000000 + 300000 + 7000 + 800 + 20 + 5$

Place value of 3 is 300000

(b) $80930090 = 80000000 + 900000 + 30000 + 90$

Place value of 3 is 30000

Example 12: Write the short form of $8000000 + 60000 + 500 + 30 + 9$

Solution :

T-L	L	T-Th	Th	H	T	O
8	0	0	0	0	0	0
		6	0	0	0	0
				5	0	0
					3	0
						9

Number = 8 0 6 0 5 3 9

Indian and International System of Numeration

Suppose a newspaper report states that Rs.2500 crore has been allotted by the government for National Highway construction. The same amount of Rs.2500 crore is sometimes expressed as Rs. 25 billion. In the Indian system, we express it as Rs. 2500 crore and in the International system, the same number is expressed as 25 billion. Hence, we need to understand both the systems and their relationship.

INDIAN SYSTEM OF NUMBERS

Crores		Lakhs		Thousands		Ones		
Ten Crore	One Crore	Ten Lakh	One Lakh	Ten Thousand	One Thousand	One Hundred	Ten	One
10,00,00,000 9 Digits	1,00,00,000 8 Digits	10,00,000 7 Digits	1,00,000 6 Digits	10,000 5 Digit	1,000 4 Digits	100 3 Digits	10 2 Digits	1 1 Digit

INTERNATIONAL SYSTEM OF NUMBERS

Billions			Millions			Thousands			Ones		
Hundred Billion	Ten Billion	One Billion	Hundred Million	Ten Million	One Million	Hundred Thousand	Ten Thousand	One Thousand	One Hundred	Ten	One
100,000,000,000 12 Digits	10,000,000,000 11 Digits	1,000,000,000 10 Digits	100,000,000 9 Digits	10,000,000 8 Digits	1,000,000 7 Digit	100,000 6 Digits	10,000 5 Digits	1,000 4 Digits	100 3 Digit	10 2 Digit	1 1 Digit


Reading and Writing of Numbers :

- In Indian System of numbers, we divide the given number into periods starting from the right.
- The first, period called units period consists of 3 digits while each of the next periods called thousands period, lakhs period, crores period respectively consists of 2 digits. Each period is separated by a comma (,).
- In International System of Numbers, we make groups of 3 digits starting from right and separate each group by using a comma (,).

Example : The six-digit number 764325.

In the Indian system, the number 7 is in the place of lakh and therefore the number is named as **seven lakh sixty-four thousand three hundred twenty-five**. It is written as **7,64,325**.

In the International system, this number is named as **seven hundred sixty-four thousand three hundred twenty-five** and is written as **764,325**.

The first three digits form the right-hand side are considered as ones, i.e., 325 ones and the next three digits to the left of the digit 3 are considered as thousands, i.e. 764 thousand.

Example 13: Write the name of the numbers according to Indian system of numeration.

- (a) 1275834 (b) 30870209

Solution : (a) 12,75,834 = Twelve lakh seventy-five thousand eight hundred thirty-four

- (b) 3,08,70,209 = Three crore eight lakh seventy thousand two hundred nine

Example 14: Write the name of the number according to International system of numeration.

- (a) 7452283
(b) 48049831
(c) 699985102

Solution :

- (a) 7452283 = 7,452,283 = Seven million four hundred fifty-two thousand two hundred eighty-three.
(b) 48049831 = 48,049,831 = Forty-eight million forty-nine thousand eight hundred thirty-one.

- (c) 699985102 = 699,985,102 = Six hundred ninety-nine million nine hundred eighty-five thousand one hundred two.

FUNDAMENTAL UNLOCKED- (FU#2)

- Q.1** Write the expanded form of the following :
(a) 87609 (b) 900376
- Q.2** How many millions make 3 crores?
- Q.3** Write the number 999999998 in words.
- Q.4** Form the largest and smallest 4-digit number using digits 9,3,0,1.
- Q.5** What is the smallest 3-digit number which does not change if digits are written in reverse order.

Estimation of Numbers

Estimation is the process of finding an approximation or **estimate**. Estimation is a calculated guess. We are not taking exact answers, without actual calculation or counting.

Rounding off

Rounding off gives us numbers that are easier to work with in our heads. Rounded off numbers are not exact but only an approximate. We use rounding off to get the answer that is close to exact, but not exact. Rounding off numbers is done on the basis of digits and place value.

Example :

Suppose Rs.3847 and Rs.8348 are the costs of a DVD player and a T.V., respectively. If a friend asked you how much you paid for these two items, you need not to add the correct value of each. You can say that it costs you around Rs. 12,000.

Example :

When we are cooking for a party, the approximate number of people expected for the party, and the approximate quantity of each item required per person are considered. Similarly, the quantity of things to be purchased for a party, the amount of cement to be purchased to construct a wall, the amount of paint to be bought to paint a house are all approximations.





(a) Estimating (Rounding) to the Nearest Ten :

When the digit at the ones place ends in 1 to 4, the number goes to the lowest tens.

For example, 24 (comes between 20 and 30)

$\underline{2}4$ (digit at one's place is 4)

20 (rounded off number)

When the digit at the ones place ends in 5 to 9, the number goes to the highest tens.

For example, 88 (comes between 80 and 90)

$8\underline{8}$ (digit at one's place is 8)

90 (rounded-off number)

(b) Rounding off to the nearest hundreds (100s)

When the digit at the tens place ends in 1 to 4, the number goes to the lowest hundreds.

For example, $3\underline{2}4$ rounded off to the nearest hundreds is 300.

When the digit at the tens place ends in 5 to 9, the number goes to the highest hundreds.

For example, $7\underline{8}8$ rounded off to the nearest hundreds is 800.

(c) Rounding off to the nearest thousands (1,000s)

When the digit at the hundreds place ends in 1 to 4, the number goes to the lowest 1,000s.

For example, $6,\underline{4}24$ rounded off to the nearest hundreds is 6,000.

When the digit at the hundreds place ends in 5 to 9, the number goes to the highest 1,000s.

For example, $8,\underline{7}88$ rounded off to the nearest thousands is 9,000.

Example 15: Estimate and compare with the actual sum (a) $730 + 998$ (b) $12904 + 2888$

Solution : (a) We round off to the nearest hundred

730 is rounded off to 700

998 is rounded off to 1000

Estimated sum = 1700

Actual sum = $730 + 998 = 1728$

Estimation is quite reasonable.

(b) We round off to the nearest thousand

12904 is rounded off to 13000

2888 is rounded off to 3000

Estimated sum = 16000

Actual sum = $12904 + 2888 = 15792$

Estimation is quite reasonable

Example 16: Give a rough estimate and also a close estimate of $439 + 334 + 4317$

Solution : For closer estimate, we round off to the nearest hundred

439 is rounded off to 400

334 is rounded off to 300

4317 is rounded off to 4300

Rough estimate : $400 + 300 + 4000 = 4700$

Closer estimated sum = 5000

Example 17: Estimate $8325 - 491$

Solution : If we round off to thousand, we get

8325 rounds off to 8000

491 rounded off to 0

Estimated difference = $8000 - 0 = 8000$

This does not give a reasonable difference, so we round off to the nearest hundred.

8325 rounds to 8300

491 rounds to 500

Estimated difference = 7800

This is reasonable estimation.

To estimate products

How do we estimate a product?

What is the estimate of 19×78 ?

It is obvious that the product is less than 2000. Why?

If we approximate 19 to the nearest tens, we get 20 and then approximate 78 to nearest tens, we get 80 and $20 \times 80 = 1600$

Look at 63×182

If we approximate both to the nearest hundreds, we get $100 \times 200 = 20,000$. This is much larger than the actual product. So, what do we do? To get a more reasonable estimate, we try rounding off 63 to the nearest 10, i.e. 60, and also 182 to the nearest ten, i.e. 180. We get 60×180 or 10,800. This is a good estimate, but is not quick enough.

If we now try approximating 63 to 60 and 182 to the nearest hundred, i.e. 200, we get 60×200 , and this number 12,000 is a quick as well as good estimate of the product.

The general rule that we can make is, therefore, round off each factor to its greatest place, then multiply the rounded off factors.



Thus, in the above example, we rounded off 63 to tens and 182 to hundreds.

Now, estimate 81×479 using this rule :

479 is rounded off to 500 (rounding off to hundreds), and 81 is rounded off to 80 (rounding off to tens).

The estimated product = $500 \times 80 = 40,000$

An important use of estimates for you will be to check your answers.

Suppose, you have done the multiplication 37×1889 , but are not sure about your answer. A quick and reasonable estimate of the product will be 40×2000 i.e. 80,000. If your answer is close to 80,000, it is probably right. On the other hand, if it is close to 8000 or 8,00,000, something is surely wrong in your multiplication.

Example 18: Estimate the following products :

(a) 87×313

(b) 9×795

(c) 898×785

Solution : (a) 87 is rounded off to 90

313 is rounded off to 300

\therefore Estimated product = $90 \times 300 = 27000$

(b) 9 is not rounded off [\therefore it is a one-digit no.]

795 is rounded off to 800

\therefore Estimated product = $9 \times 800 = 7200$

(c) 898 is rounded off to 900

785 is rounded off to 800

\therefore Estimated product = $900 \times 800 = 720000$

Estimation in Quotients :

In the process of estimation in quotients, we round off the dividend and the divisor before the process of division.

Example 19:

Estimate the following quotients :

(a) $81 \div 17$ (b) $7525 \div 365$

Solution : (a) 81 is rounded to 80

17 is rounded to 20

To get the estimated quotient think of dividing 80 by 20 or 8 by 2.

\therefore Estimated quotient = $\frac{8}{2} = 4$

(b) 7525 is rounded to 8000

365 is rounded to 400

To get the estimated quotient think of dividing 80 by 4.

\therefore Estimated quotient = 20

FUNDAMENTAL UNLOCKED- (FU#3)

Q.1 Estimate the following by rounding off each factor to nearest hundreds:

(a) $730 + 998$ (b) $673 - 458$

Q.2 Estimate the following by rounding off each factor to nearest thousands:

(a) $21397 + 27807 + 42505$

(b) $28292 - 21496$

Q.3 Estimate the following by rounding off each number to its greatest place :

(a) $439 + 334 + 4317$ (b) $108734 - 47599$

(c) 87×317 (d) $4489 \div 394$

Q.4 Estimate the product of 183×143 by rounding off the first number upwards and the second number downwards.

Q.5 Estimate the following products :

(a) 67×312 (b) 9×795

Use of Numbers in Everyday Life

Numbers are used immensely in our everyday life, such as measuring the length of a small object as pencil, the distance between two given places ; the weight of an orange, the weight of a ship, the amount of juice in a glass and the amount of water in a lake. Small lengths are measured in millimetre (mm) and centimetre (cm) while bigger lengths are measured in metre (m) and kilometre (km).

Metre (m) is the standard unit of length and we define it as

$1 \text{ m} = 100 \text{ cm} = 1000 \text{ mm}$

$\therefore 1 \text{ cm} = 10 \text{ mm}$

$\therefore 100 \text{ cm} = 100 \times 10 = 1000 \text{ mm}$

$1 \text{ km} = 1000 \text{ m}$

Also, $1 \text{ km} = (1000 \text{ m} \times 1000 \text{ mm}) = 1000000 \text{ mm}$

Similarly, the units of weight are as under

$1 \text{ gm} = 1000 \text{ mg}$

$1 \text{ kg} = 1000 \text{ gm}$

$\therefore 1 \text{ kg} = (1000 \text{ gms} \times 1000) \text{ mg} = 1000000 \text{ mg}$

For capacity or volume,

$1 \text{ L} = 1000 \text{ mL}$ and $1 \text{ kL} = 1000 \text{ L}$

$1 \text{ kL} = 1000 \text{ L} \times 1000 \text{ mL} = 1000000 \text{ mL}$





Example 20:

A tin of biscuits has 14 kg of biscuits. Express the weight in milligrams.

Solution : Since 1 kg = 1000 gm and

$$1 \text{ gm} = 1000 \text{ mg}$$

$$\therefore 1 \text{ kg} = (1000 \times 1000) \text{ mg} = 1000000 \text{ mg}$$

$$\Rightarrow 14 \text{ kg} = 14 \times 1000000 \text{ mg} = 14000000 \text{ mg}$$

Example 21:

The population of Rajasthan is 5,64,73,122, of Goa is 13,43,998 and of Karnataka is 5,27,33,958.

What is the combined population of the three states?

Solution : Population of Rajasthan = 5,64,73,122

Population of Karnataka = 5,27,33,958.

Population Goa = 13,43,998

$$\therefore \text{Total population of three states} = 5,64,73,122$$

$$+ 13,43,998 + 5,27,33,958 = 11,05,51,078$$

i.e. Eleven crore five lakh fifty-one thousand seventy-eight.

Example 22:

What must be added to 34,52,629 to make it equal to 6 crores.

Solution : 6 crores = 6,00,00,000

$$\therefore \text{required number} = 6,00,00,000 -$$

$$34,52,629 = 5,65,47,371$$

Example 23:

There are 785 students on roll in a residential public school. If the annual fee per student is Rs. 62, 606. What is the total fee collected annually by the school?

Solution : Annual fee of one student = Rs. 62,606

Number of students = 785

$$\therefore \text{Total annual collection of fees} = \text{Rs. } 62,606 \times 785 = \text{Rs. } 4,91,45,710$$

Example 24: Find the number of pages in a book which has on an average 207 words on a page, and contains 201411 words altogether.

Solution : Number of pages = $201411 \div 207 = 973$

Thus, the number of pages in the book = 973

FUNDAMENTAL UNLOCKED- (FU#4)

- Q.1** India's population has been steadily increasing from 439 million in 1961 to 1028 millions in 2001. Find the total increase in population from 1961 to 2001. Write the increase in population in Indian System of Numeration, using commas suitably.
- Q.2** In 2001, the populations of Tripura and Meghalaya were 3,199,203 and 2,318,822, respectively. Write the populations of these two states in words.
- Q.3** Out of 180000 tablets of Vitamin A, 18734 are distributed among the students in a district. Find the number of the remaining vitamin tablets.
- Q.4** Chinmay had Rs 610000. He gave Rs 87500 to Jyoti, Rs 126380 to Javed and Rs 350000 to John. How much money was left with him?
- Q.5** A factory has a container filled with 35874 litres of cold drink. In how many bottles of 200 ml capacity each can it be filled ?

Roman Numerals

One of the earliest systems of writing numerals is the Roman Numeral system. This system is still in use in many places. For example, some faces of clocks show hours in Roman numerals; we use Roman numerals to write numbered list; etc.

Unlike the Hindu-Arabic numeral system, Roman numeral system uses seven basic symbols to represent different numbers. The symbols are as follows :

$$I = 1, V = 5, X = 10, L = 50, C = 100$$

$$D = 500, M = 1000$$

Rules to Form Roman Numerals :

We can form different Roman numerals using the symbols and the following rules.

Rule-1 If a symbol is repeated one after the other, its value is added as many times as it occurs. For example

$$III = 1 + 1 + 1 = 3$$

$$XX = 10 + 10 = 20$$



Rule-2 The symbols I, X, C and M can be repeated up to a maximum of three times. For example

I = 1,
II = 2,
III = 3
X = 10,
XX = 20,
XXX = 30
C = 100,
CC = 200,
CCC = 300
M = 1000,
MM = 2000,
MMM = 3000

Rule-3 The symbols V, L and D (i.e., 5, 50, and 500 respectively) can never be repeated in a Roman numeral.

Rule-4 If a symbol with a smaller value is written on the right of a symbol with a greater value, then its value is added to the value of the greater symbol. For example

XII = 10 + 2 = 12,
LX = 50 + 10 = 60,
DCCCX = 500 + 300 + 10 = 810

Rule-5 If a symbol with a smaller value is written on the left of a symbol with a larger value, then its value is subtracted from the value of the greater symbol. For example,

IV = 5 - 1 = 4, IX = 10 - 1 = 9, CD = 500 - 100 = 400,
VI = 5 + 1 = 6, XI = 10 + 1 = 11, DC = 500 + 100 = 600

Rule-6 The symbols V, L and D are never written to the left of a symbol of greater value i.e. V, L and D are never subtracted

The symbol I can be subtracted from V and X only.

The symbol X can be subtracted from L, M and C only.

The symbol C can be subtracted from D and M only.

Rule-7 If a bar is placed over a numeral, it is multiplied by 1000.

$$\overline{V} = 5000, \overline{L} = 50000$$

Example 25:

Write the Roman Numerals

(a) 105 (b) 213 (c) 4592 (d) 5839

Solution : (a) 105 = 100 + 5 = CV

(b) 213 = 200 + 10 + 3 = CCXIII

(c) 4592 = \overline{IV} DXCII

(d) 5839 = \overline{V} DCCCXXXIX

Example 26:

Write in Hindu Arabic numerals:

(a) CXXXV (b) CXLI

(c) \overline{VI} CMXXI (d) \overline{XL} CCVI

Solution :

(a) CXXXV = C + XXX + V = 100 + 30 + 5 = 135

(b) CXLI = C + XL + I = 100 + 40 + 1 = 141

(c) \overline{VI} CMXXI = \overline{VI} + CM + XX + I = 6000 + 900 + 20 + 1 = 6921

(d) \overline{XL} CCVI = \overline{XL} + CC + VI = 41000 + 200 + 6 = 41,206

FUNDAMENTAL UNLOCKED- (FU#5)

Q.1 Express each of the following numbers as a Roman numeral :

(a) 26 (b) 63 (c) 72 (d) 99
(e) 556 (f) 769 (g) 26495

Q.2 Write each of the following in Hindu-Arabic numeral :

(a) CLXVI (b) CDXLVI
(c) DCCLXVI (d) \overline{LIX} CLXIX
(e) \overline{XXVI} CDXCV

Q.3 Which of the following are meaningless?

(a) XD (b) LVV
(c) MMMCCXI (d) I II CCS

Q.4 Find the greatest among IV, V, VI and VII

Q.5 Write the sum of XX and XXIX in Roman numerals.



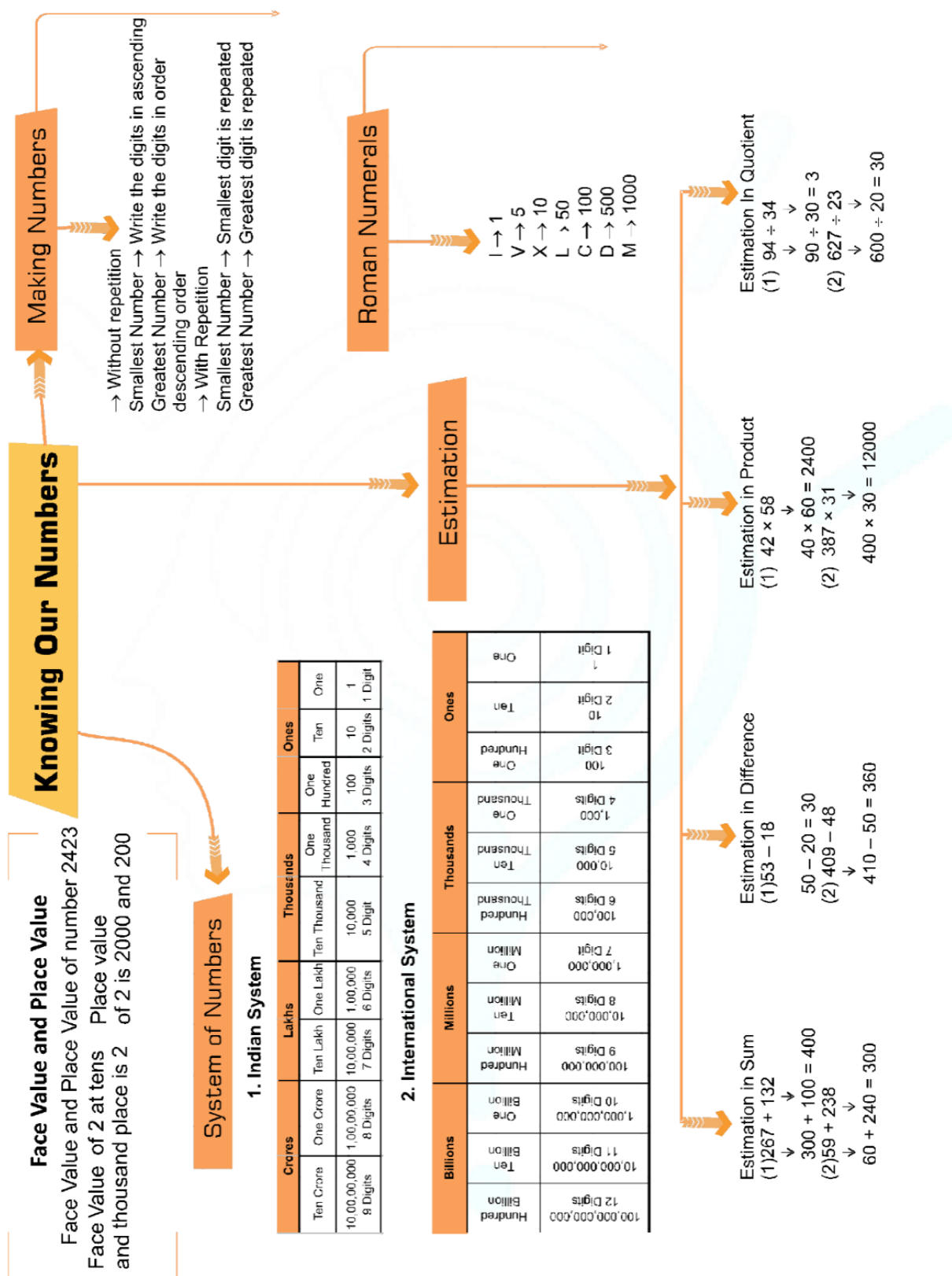


Summary

1. The set of natural numbers is $N = \{1, 2, 3, \dots\}$
2. The set of whole numbers is $W = \{0, 1, 2, 3, \dots\}$
Both the above sets are infinite sets i.e. there is no greatest number.
3. The set of whole numbers and negative of natural numbers is I/Z is
 $= \{\dots, -2, -1, 0, 1, 2, \dots\}$
4. The smallest natural number is 1 and the smallest whole number is 0.
5. The Successor of a given whole number is 1 more than the given number, e.g. the Successor of 25 is 26.
6. The Predecessor of a given whole number is 1 less than the given number, e.g. the Predecessor of 100 is 99.
7. Every digit in a numeral has two values – the Place value and the Face value.
 - (a) The face value of a digit does not change
 - (b) The place value changes according to its position in the number. Each place represents ten times the one which is immediately to its right, e.g. in the number 5555 starting from the right place values of 5's is 5, 50, 500, 5000 respectively, while the face value remains same i.e., 5
8. There are two system of numeration – the Indian and the International.
 - (a) In Indian system of numeration, the periods are crores, lakhs, thousands and units
 - (b) In International system of numeration, these are billions, millions, thousands and units.
9. For rounding off a number to the nearest 10, 100, 1000. etc. we look at the digits at a lower place, i.e. ones, tens, hundreds, ... etc. If the digits at ones, tens or hundreds is less than 5, the number is rounded off downwards otherwise upwards.
10. Roman numeration system has seven basic symbols as
I for 1, V for 5, X for 10, L for 50, C for 100, D for 500, M for 1000.



Chapter Map





ANSWER KEY

FUNDAMENTAL UNLOCKED- (FU#1)

- Q.1 (a) -84 (b) -1 (c) 231
 Q.2 (a) 0 (b) -99
 Q.3 100
 Q.4 98845, 87654, 10034, 2453, 1345
 Q.5 25210, 25245, 25270, 25286

FUNDAMENTAL UNLOCKED- (FU#2)

- Q.1 (a) $80000 + 7000 + 600 + 9$
 (b) $900000 + 300 + 70 + 6$
 Q.2 30 million
 Q.3 Ninety-nine crore ninety-nine lakh ninety-nine thousand nine hundred and ninety-eight.
 Q.4 Largest = 9310
 Smallest = 1039
 Q.5 101

FUNDAMENTAL UNLOCKED- (FU#3)

- Q.1 (a) 1,700 (b) 200
 Q.2 (a) 92,000 (b) 7,000
 Q.3 (a) 4,700 (b) 50,000 (c) 27,000 (d) 10
 Q.4 20,000
 Q.5 (a) 30,000 (b) 8,000

FUNDAMENTAL UNLOCKED- (FU#4)

- Q.1 58,90,00,000
 Q.2 5,518,025 (Five million five hundred eighteen thousand and twenty-five)
 Q.3 161,266
 Q.4 46,120
 Q.5 179,370

FUNDAMENTAL UNLOCKED- (FU#5)

- Q.1 (a) XXVI (b) LXIII (c) LXXII (d) IC
 (e) DLVI (f) DCCLXIX (g) $\overline{\text{XXVI}}$ CDXCV
 Q.2 (a) 166 (b) 446 (c) 766 (d) 59,169
 (e) 26,495
 Q.3 (b) LVV
 Q.4 VII
 Q.5 $49 = \text{XLIX}$




EXERCISE - I
SINGLE CORRECT TYPE QUESTIONS

1. The successor of 49,999 is :
(A) 49,998 (B) 50,000
(C) 49,990 (D) 49,000
2. Which one of the following is the smallest numeral?
(A) 15673 (B) 15700 (C) 15198 (D) 15623
3. 789500 comes just after :
(A) 789400 (B) 789501
(C) 789499 (D) 789498
4. The place value of 9 in 7690453 is:
(A) 900 (B) 9000 (C) 90000 (D) 90
5. Which digit is at thousands place in 57, 168 :
(A) 6 (B) 7 (C) 1 (D) 8
6. The product of the place values of two 2's in 428721 is
(A) 4 (B) 40000
(C) 400000 (D) 40000000
7. $3 \times 10000 + 7 \times 1000 + 9 \times 100 + 0 \times 10 + 4$ is the same as
(A) 3794 (B) 37940 (C) 37904 (D) 379409
8. In Indian system of Numeration, the number 58695376 is written as
(A) 58,69,53,76 (B) 58695,376
(C) 5,86,95,376 (D) 586,95,376
9. Express seventy-four thousand five hundred seventy in figures:
(A) 74560 (B) 74580 (C) 74570 (D) 74571
10. 9745679 is smaller than one crore by
(A) 254000. (B) 254321.
(C) 254799. (D) 254856.
11. The successor of the greatest 4– digit number is
(A) 9999 (B) 9998 (C) 9909 (D) 10000
12. The largest number using each of digits 5, 7, 8, 9 is:
(A) 9875 (B) 5879 (C) 8759 (D) 7589
13. The smallest 4–digit number using 2, 0, 9, 5 is:
(A) 9520 (B) 0295 (C) 2059 (D) 5209
14. The largest 4 – digit number, using any one digit twice, from digits 5,9,2 and 6 is
(A) 9652 (B) 9562 (C) 9659 (D) 9965
15. Find the difference in the place value of the digit 5 in the number 57568.
(A) 49500 (B) 45900 (C) 49000 (D) 49050
16. In the product of 37 and 23, what is the place value of the digit which is prime?
(A) 500 (B) 700 (C) 800 (D) 50
17. What is the difference of 1 million and 900 tens?
(A) 100900 (B) 991000
(C) 91000 (D) 919000
18. How much is 50 less than by 1 million?
(A) 9950 (B) 99950
(C) 999950 (D) 9999950
19. How many numbers of 3–digit is formed by using the digits 0, 1, and 2?
(A) 5 (B) 6 (C) 10 (D) 4
20. Using the digits 1, 4, 6 and 8 each only once, how many four-digit odd numbers can be formed?
(A) 4 (B) 5 (C) 3 (D) 6
21. When rounded off to nearest thousands, the number 85642 is
(A) 85600 (B) 85700 (C) 85000 (D) 86000
22. The greatest number which on rounding off to nearest thousands gives 5000, is
(A) 5001 (B) 5559 (C) 5999 (D) 5499
23. Rough estimate (by rounding off to nearest tens) of $439 + 334 + 4317$ will be
(A) 4055 (B) 5550 (C) 5090 (D) 5975



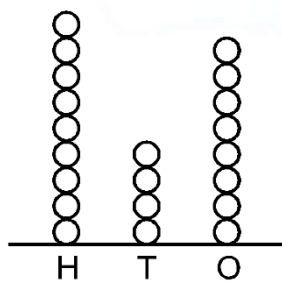


24. Which of the following numbers when rounded off to the nearest ten thousand gives 500000 ?
 (A) 492811 (B) 495213
 (C) 589200 (D) 513076
25. 1 quintal = kg
 (A) 10 (B) 100 (C) 1000 (D) 100000
26. $2\text{km} + 1\text{m} + 3\text{cm} = \dots\dots\dots$
 (A) 200101 cm (B) 200102 cm
 (C) 200103 cm (D) 200104 cm
27. What is the cost of a banana, if one dozen banana costs Rs. 24
 (A) 3 (B) 2 (C) 4 (D) 1
28. A train moves at a uniform speed of 45km/hr. How much distance will it cover in 36 hours?
 (A) 1630 (B) 1640 (C) 1620 (D) 1615
29. Weight of one bag is 14Kg 35g. The weight of 18 bags is
 (A) 250Kg 300g (B) 252Kg 130g
 (C) 252Kg 630g (D) 253Kg 630g
30. LXV can be written in Hindu Arabic numeral as :
 (A) 55 (B) 60 (C) 65 (D) 70
31. I as a Roman numeral, am CMXCIX. Break me up and then can you recognize me ?
 (A) 9910 (B) 999 (C) 1109 (D) 1119
32. The greatest among IV, V, VI or VII would be
 (A) IV (B) V (C) VI (D) VII
33. Which of the number shown below is meaningless?
 (A) VIII (B) XX (C) XVI (D) VXXX
34. Which of the following numbers in Roman numerals Is Incorrect?
 (A) LXXX (B) LXX
 (C) LX (D) LLX
35. If 1 is added to the greatest 7 – digit number, it will be equal to
 (A) 100 thousand (B) 1 lakh
 (C) 10 lakh (D) 1 crore
36. Keeping the place of 6 in the number 6350947 same, the smallest number obtained by rearranging other digits is
 (A) 6975430 (B) 6043579
 (C) 6034579 (D) 6034759
37. Re–arrange the digits of 1,02,35,007 to get the largest and the smallest number, the difference between the place value of 2 in these two numbers is
 (A) 0 (B) 8,000
 (C) 20,000 (D) 18,000
38. The largest 4–digit number, using any one digit twice from digits 7,8,3 and 6 is
 (A) 8673 (B) 8763 (C) 8678 (D) 8876
39. The largest 5–digit number having three different digits is
 (A) 99987 (B) 98978 (C) 99897 (D) 98799
40. Total number of numbers which when rounded off to nearest ten give us 200 is
 (A) 9 (B) 10 (C) 8 (D) 7
41. The greatest number which when rounded off to the nearest thousand as 7000 is
 (A) 6500 (B) 6549 (C) 7499 (D) 6499
42. The smallest number which when rounded off to the nearest hundred as 600 is
 (A) 550 (B) 595 (C) 604 (D) 599
43. How many times does the digit “1” appear in numbers from 1 to 100 ?
 (A) 18 (B) 19 (C) 20 (D) 21
44. a, b, c and d are four 4-digit numbers, each having the digit 9 only once and, in the place, shown. None of the other digits are known
- | | |
|---|---|
| (a) <div style="display: inline-block; border: 1px solid black; padding: 2px 10px;">9 </div> | (b) <div style="display: inline-block; border: 1px solid black; padding: 2px 10px;"> 9 </div> |
| (c) <div style="display: inline-block; border: 1px solid black; padding: 2px 10px;"> 9 </div> | (d) <div style="display: inline-block; border: 1px solid black; padding: 2px 10px;"> 9</div> |
- What can be said about A, B, C and D ?
 (A) d is the smallest of the four numbers
 (B) b is larger than c
 (C) a is the largest of the 4 numbers
 (D) d is the largest of the 4 numbers





45. A 7-digit number starts with place in the Indian system.
 (A) lakhs (B) ten thousand
 (C) ten lakhs (D) crores
46. Place value of a digit increases by _____ times as it moves place by place from right to left.
 (A) 100 (B) $\frac{1}{10}$ (C) 10 (D) 1000
47. The number of match sticks that can be used to write 39 in roman system are
 (A) 8 (B) 9 (C) 3 (D) 6
48. How many five digits numbers are there ?
 (A) 99999 (B) 99000 (C) 90000 (D) 98999
49. The difference between the largest 5-digit number and the largest 5-digit number with three distinct digits is
 (A) 10 (B) 10012 (C) 12 (D) 123
50. The difference between the greatest and smallest numbers which when rounded off a number to the nearest tens as 540, is
 (A) 12 (B) 9 (C) 8 (D) 10
51. How many beads should be removed from the hundred's place in the abacus shown here if it has to represent a number between 550 and 650?



- (A) 4 (B) 3 (C) 2 (D) 1
52. 256002117116223 written according to international system in words as
 (A) Two hundred fifty-six trillion two billion one hundred seventeen million one hundred sixteen thousand two hundred twenty-three

- (B) Two hundred fifty-six trillion one hundred seventeen million one hundred sixteen thousand two hundred twenty-three
 (C) Two hundred fifty-six trillion two billion one hundred seventeen million one hundred sixteen thousand two hundred twenty-three
 (D) None of these
53. 100000000000567 written according to international system in words as
 (A) One hundred million five hundred sixty-seven
 (B) One hundred trillion five hundred sixty-seven
 (C) One hundred five thousand sixty-seven
 (D) None of these
54. There are four prime numbers written in ascending order. The product of the first three is 385 and that of the last three is 1001, the last number is
 (A) 5 (B) 7 (C) 11 (D) 13
55. How many two-digit numbers are there which have different digits in the unit and tens place?
 (A) 72 (B) 80 (C) 81 (D) 89
56. The sum of three prime numbers is 100. If one of them exceeds another by 36, then one of the numbers is
 (A) 67 (B) 70
 (C) 64 (D) None of these
57. On dividing 4150 by certain number, the quotient is 55 and the remainder is 25, the divisor is
 (A) 40 (B) 50 (C) 75 (D) 55

FILL IN THE BLANKS

- Smallest natural number is _____
- 1 crore = _____ lakh
- The smallest 4-digit number with four different digits is _____.
- The total number of 4-digit number is _____





5. 564 when estimated to the nearest hundred is _____.
6. 1678 when estimated to the nearest thousand is _____.
7. 100 m = _____ cm
8. 650 km = _____ m
9. Which symbols are never repeated _____.
10. The predecessor of XI is the whole number _____.

TRUE / FALSE

1. 99999 just comes before 1000000.
2. The successor of the greatest 5-digit number is 100000.

3. The difference in the face value and the place value of 5 in 85419 is 85414.
4. 100 lakhs make a million.
5. The estimated value of 46,530 to the nearest hundred is 46500.
6. The estimated value of 450 to the nearest hundred is 400.
7. 1km = 100 m
8. 100m = 1cm
9. In Roman numeration, a symbol is not repeated more than three times.
10. XXIX = 31
11. LXXIV = 74
12. The number LIV Is greater than LVI.




EXERCISE - II
VERY SHORT ANSWER TYPE QUESTIONS

1. Write the Predecessor of 7000 ?
2. Which is greater 72389 and 72391 ?
3. Arrange the following in ascending order:
2345, 2543, 3452, 4325, 2435
4. Write the greatest and the smallest 5 digits numbers by using each of the digits 3, 5, 7, 0, 9 only once?
5. Write the greatest and smallest numbers of 4 digits using all the digits 7, 0, 6 ?
6. Estimate the 278×361 products (by general rule)
7. Estimate the following (by rounding off to nearest thousands):
(a) 3,456 (b) 7,850
8. Alok and Anuj worked as salesperson at a bookstore. They sold 6283 story books in all. Anuj sold 3324 story books. How many story books were sold by Alok?
9. In an election, the successful candidate registered 4,67,350 votes and his nearest rival secured 2,18,800 votes. By what margin did the successful candidate win the election?
10. Write in numbers:
(a) IX (b) LXV
11. Write in Roman numerals:
(a) 12 (b) 34

SHORT ANSWER TYPE QUESTIONS

12. As per the census of 2001, the population of four states are given below. Arrange the states in ascending and descending order of their population.
(A) Maharashtra 96878627
(B) Andhra Pradesh 76210007
(C) Bihar 82998509
(D) Uttar Pradesh 166197921

13. Write the place value of each digit of number 560271
14. Find the difference between place value and face value of digit 6 in 298654
15. Find the product of place value of 8 and face value of 2 in 92486
16. Write the following numbers in expanded notation.
(a) 2,84,231 (b) 52,11,568
(c) 6,04,18,517 (d) 8,91,81,213
17. Write the following numbers as numerals.
(a) Sixty-two lakh forty-five thousand six hundred thirty-five
(b) Nine crores fifty-eight lakh sixty-one thousand eighty-nine
18. In 2001, the population of Tripura and Meghalaya were 3,199,203 and 2,318,822, respectively. Write the populations of these two states in words.
19. How many lakhs make five billion?
20. Estimate the product of 287×231 by rounding off the first number upwards and the second number downwards.
21. Give a rough estimate and a closer estimate of $4,89,342 - 48,365$.
22. 12 drums of milk have 84 litres of milk in them. Find the capacity of one drum in millilitres.
23. Radius of the Earth is 6400km and that of Mars is 4300000m. Whose radius is bigger and by how much?
24. Write the equivalent Roman numeral of each of the following Hindu-Arabic numeral.
(a) 46 (b) 90 (c) 120 (d) 150
25. Write the equivalent Hindu Arabic numerals of the following Roman numerals.
(a) XXII (b) CCX (c) DCC (d) LXIII





LONG ANSWER TYPE QUESTIONS

- 26.** According to the 1991 census, the number of people who spoke the following languages were:

Assamese : 13079696

Hindi : 337272114

Konkani : 1760607

- (a) Write the above numbers according to the Indian and International system of numeration.
- (b) Write the above numbers in words according to the Indian system of numeration.
- (c) Write the above numbers in words according to the International system.
- 27.** Write all possible three-digit numbers (without repeating the digits), by using the digits.
(i) 6, 7, 5 (ii) 9, 0, 2
- 28.** Use the given digits without repetition and make the smallest and the greatest four-digit numbers.
(i) 2, 1, 5, 6 (ii) 7, 8, 0, 9
(iii) 4, 6, 3, 5 (iv) 8, 3, 2, 4
(v) 2, 5, 9, 0 (vi) 1, 9, 6, 3
- 29.** Make the greatest and the smallest four-digit numbers by using any one digit twice :
(i) 6, 3, 2 (ii) 1, 0, 6 (iii) 7, 9, 4 (iv) 2, 5, 0
- 30.** Make the greatest and the smallest 4-digit numbers using any four different digits, with the condition given below :
(i) Digit 6 is always in thousands place
(ii) Digit 4 is always in hundreds place
(iii) Digit 7 is always in tens place

- (iv) Digit 1 is always in one's place
(v) Digit 9 is always in thousands place
(vi) Digit 0 is always in hundreds place
(vii) Digit 5 is always in tens place
(viii) Digit 3 is always in one's place

- 31.** A mobile number consists of ten digits. First four digits are 9, 9, 7 and 9. Make the smallest mobile number by using only one digit twice from 8, 3, 5, 6, 0.
- 32.** In a five-digit number, digit at ten's place is 4, digit at unit's place is one fourth of ten's place digit, digit at hundred's place is 0, digit at thousand's place is 5 times of the digit at unit's place and ten thousand's place digit is double the digit at ten's place. Write the number.
- 33.** Estimate each of the following by rounding off each number to nearest hundreds:
(a) $874 + 478$ (b) $793 + 397$
(c) $11244 + 3507$ (d) $17677 + 13589$
- 34.** Give the approximate value by estimating.
(a) $3228 + 572$ (b) $8010 - 2507$
(c) 32×58 (d) 108×47
- 35.** The number of candidates appearing for class 10 board examination conducted by CBSE was 14, 58, 937 in year 2002; 16, 93, 487 in year 2003; 24, 13, 468 in year 2004 and 40, 05, 093 in year 2005. Find the total number of candidates who appeared for the examination in these four years.
- 36.** The number of scooters produced in a year was 25, 43, 163. Out of these 16, 43, 078 were sold. How many were still left ?




EXERCISE - III
PREVIOUS YEAR QUESTIONS

1. The diagram shows two numbers

467,285

30,792

Find the product of the place value of digit 6 and place value of digit 9.

(A) 5,400,000 (B) 54,000
(C) 5,400 (D) 54
2. 1 million = _____ lakhs
 (A) 1 (B) 10 (C) 16 (D) 18
3. Which of the following has the greatest value?
 (A) $(2 \times 100,000) + (6 \times 100)$
 (B) $(2 \times 100,000) + (5 \times 1,000)$
 (C) $(3 \times 10,000) + (6 \times 100) + (7 \times 10)$
 (D) $(3 \times 10,000) + (5 \times 1,000) + (7 \times 10)$
4. The difference between the largest 8-digit number and the smallest 6-digit number is
 (A) 100099999 (B) 99899999
 (C) 99989999 (D) 99998999
5. Rohan rolled 3 fair number cubes, and the numbers shown below came out on top. If each number is used only once, which group shows all the 3-digit numbers that can be made with these digits?

4

5

6

(A) 456, 565, 654, 544, 655, 645
 (B) 456, 546, 654, 645, 556, 664, 555
 (C) 456, 465, 564, 654, 546, 444
 (D) 456, 465, 564, 546, 645, 654
6. Ms. Neha needs to replace the batteries in 20 calculators. Each calculator uses 4 batteries. The batteries are sold in packages of 16. How many packages of batteries does Ms. Neha need to buy ?
 (A) 64 (B) 4 (C) 80 (D) 5
7. Sneha earns Rs.110 each week taking care of pets. Which of the following is the best estimate of how much money she will earn in 28 weeks while taking care of the pets?
 (A) Rs. 1000 (B) Rs. 500
 (C) Rs. 9000 (D) Rs. 3080
8. Fill in the blank
 1 million = _____ hundred thousand.
 (A) One (B) Ten
 (C) Hundred (D) Twenty
9. Estimate the sum of $(21397 + 42505)$ to nearest thousand.
 (A) 64000 (B) 65490 (C) 70000 (D) 92000
10. Smriti bought 19 boxes of sweets. Each box contains 228 sweets. How many sweets would be left with her after giving 519 sweets to friends?
 (A) 766 (B) 3,813 (C) 4,332 (D) 4,851
11. Which of the given is the largest, when the digits in ten's and one's are interchanged with hundreds and thousands place respectively ?
 (A) 8865 (B) 8765 (C) 7865 (D) 7875
12. What is the estimated sum of 21396, 27808 and 42504 to the nearest ten?
 (A) 91710 (B) 91700 (C) 91720 (D) 91730
13. Which of the following rule is not satisfied for Roman numerals?
 (A) V, L, D are never subtracted.
 (B) C can be subtracted from X, M, D and L.
 (C) Only I, X, C, M can be repeated.
 (D) No symbol can be repeated more than 3 times.





14. Neha is getting ready for the state assessment, and is planning mini-lessons for students focused on particular difficulties that they are having with adding columns of numbers. To target her instruction more effectively, she wants to work with groups of students who are making the same kind of error, so she looks at a recent quiz to see what they tend to do. She sees the following three student mistakes. Which have the same kind of error?

$$\begin{array}{r} 1 \\ 38 \\ 49 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ 45 \\ 37 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ 32 \\ 14 \\ \hline \end{array}$$

(i) $\begin{array}{r} +65 \\ 142 \\ \hline \end{array}$ (ii) $\begin{array}{r} +29 \\ 101 \\ \hline \end{array}$ (iii) $\begin{array}{r} +19 \\ 64 \\ \hline \end{array}$

- (A) I and II (B) I and III
(C) II and III (D) I, II and III

15. Solve the following Roman numerals.
LIX + XXXVI + IX + XC – LX
(A) CXXXVI (B) CXXXLIV
(C) CXXVII (D) CXXXIV
16. A book of 1,456 pages has 9,95,904 words in it. The number of words in each page is _____.
(A) 584 (B) 684 (C) 675 (D) 595
17. Match the Roman numerals given in Column–I with their correct Hindu–Arabic numerals given in Column–II.
- | Column–I | Column–II |
|-------------|-----------|
| (a) MDCLXX | (p) 1222 |
| (b) MMDCCII | (q) 1670 |
| (c) MCCLXVI | (r) 1266 |
| (d) MCCXXII | (s) 2702 |
- (A) (a) – (q), (b) – (r), (c) – (s), (d) – (p)
(B) (a) – (q), (b) – (s), (c) – (r), (d) – (p)
(C) (a) – (q), (b) – (p), (c) – (s), (d) – (r)
(D) (a) – (q), (b) – (s), (c) – (p), (d) – (r)
18. Which of the following numbers when rounded off to the nearest hundred gives 15900?
(A) 14955 (B) 14999
(C) 15086 (D) 15899

19. What is difference between the smallest 6–digit odd number and the largest 4–digit even number ?
(A) 90002 (B) 90003
(C) 101113 (D) 101121
20. What is the value of 108 thousandths multiplied by 15 ones ?
(A) 1.62 (B) 15.108
(C) 108.0 (D) 16.20
21. Which one of the following is the best estimation of 5663×2234 ?
(A) 5000×2000 (B) 5700×2200
(C) 5660×2230 (D) 5660×2330
22. Fill in the blanks:
Every natural number has a _____ except _____ and has a _____.
(A) Successor. 0, predecessor
(B) Successor. 1, predecessor
(C) Predecessor. 0, successor
(D) Predecessor. 1, successor
23. What is the difference in place value between the digits 8 and 6 in the numeral 8962321?
(A) 7994000 (B) 7904000
(C) 7960000 (D) 7940000
24. A 29–inch colour TV set costs Rs. 532565 and a 21–inch model costs Rs. 318675. How much more does the bigger TV set cost (In Rs.)?
(A) Two lakhs thirteen thousand seven hundred and ninety
(B) Two lakhs thirteen thousand eight hundred and ninety
(C) One lakh thirteen thousand nine hundred and ninety
(D) Two lakhs twelve thousand eight hundred and ninety
25. Which of the following statements is INCORRECT?
(A) The symbol X can be subtracted from L, M and C only.
(B) V, L and D are never repeated.
(C) V, L and D are never subtracted.
(D) I or V is written to the left of L or C.





- | | |
|--|--|
| <p>26. The difference between place values of digit 5 in 456.385 is
 (A) 49995 (B) 499.95
 (C) 49.995 (D) 49.999</p> <p>27. Find the value of CXVI + XIII + VI + CCLXV – XVI
 (A) CD (B) CCCLXXXIV
 (C) CCCLXXXV (D) M</p> <p>28. Estimate the following by rounding off each number to nearest hundreds.
 78203 – 16407
 (A) 61700 (B) 62000
 (C) 61800 (D) 61500</p> <p>29. Latika's monthly salary was Rs. 30525. She spent Rs. 1800 and saved the rest. How much did she save in a year?
 (A) Rs. 344700 (B) Rs. 315975
 (C) Rs. 248960 (D) Rs. 212840</p> | <p>30. Mr. Kapoor left his office at 15:45 to attend a 3-hour seminar in Delhi. He took 2 hours 20 minutes to drive there but was 25 minutes late for the seminar. At what time did the seminar end?
 (A) 21:05 (B) 22:10 (C) 21:30 (D) 20:40</p> <p>31. Estimate the sum (21497 + 47807) to the nearest thousand.
 (A) 59000 (B) 79000 (C) 69000 (D) 89000</p> <p>32. The value of XVI + CCCVII =
 (A) CCXXIII (B) CCCXIV
 (C) CCCXXIII (D) CCCXXV</p> <p>33. Arrange the following in ascending order.
 P: Eight thousand six hundred fifty-two
 Q: Ninety-six thousand seven hundred forty-one
 R: Fifty-nine thousand nine hundred eighty-six
 S: Eighty-two thousand nine hundred six
 (A) P, Q, R, S (B) Q, S, R, P
 (C) P, R, S, Q (D) P, R, Q, S</p> |
|--|--|





ANSWER KEY

SINGLE CORRECT TYPE QUESTION

EXERCISE-I

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	B	C	C	C	B	C	C	C	C	B	D	A	C	D	A
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	D	B	C	D	D	D	D	C	B	B	C	B	C	C	C
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	B	D	D	D	D	C	D	D	A	B	C	A	D	C	C
Que.	46	47	48	49	50	51	52	53	54	55	56	57			
Ans.	C	B	C	C	B	B	A	B	D	C	A	C			

FILL IN THE BLANKS

1. 1 2. 100 3. 1023 4. 9000 5. 600
 6. 2000 7. 10000 8. 6,50,000 9. V, L and D 10. 10

TRUE / FALSE

1. False 2. True 3. False 4. False 5. True 6. False 7. False
 8. False 9. True 10. False 11. True 12. False

EXERCISE-II

VERY SHORT ANSWER TYPE QUESTIONS

- Predecessor of 7000 = $7000 - 1 = 6999$
- $72389 < 72391$
- 2345, 2435, 2543, 3452, 4325
- Greatest number : 97530
Smallest number : 30579
- Greatest number : 7760
Smallest number : 6007
- $300 \times 400 = 1,20,000$
- (a) 3,000 (b) 8,000
- Total story books sold = 6283
Story books sold by Anuj = 3324
Story books sold by Alok = 6283

$$\begin{array}{r} -3324 \\ 6283 \\ \hline 2959 \end{array}$$
- Number of votes the successful candidate registered = 4,67,350
Number of votes the rival secured = 2,18,800
Margin of votes = 4,67,350

$$\begin{array}{r} -2,18,800 \\ 4,67,350 \\ \hline 2,48,550 \end{array}$$

The successful candidate won the election by a margin of 2,48,550 votes.
- (a) 9 (b) 65 11. (a) XII (b) XXXIV




SHORT ANSWER TYPE QUESTIONS

12. Ascending order – Andhra Pradesh, Bihar, Maharashtra, Uttar Pradesh
Descending order – Uttar Pradesh, Maharashtra, Bihar, Andhra Pradesh
13. Place value of 5 = 500000
Place value of 6 = 60000
Place value of 2 = 200
Place value of 7 = 70
Place value of 1 = 1
14. 594
15. 160
16. (a) $2,00,000 + 80,000 + 4,000 + 200 + 30 + 1$
(b) $50,00,000 + 2,00,000 + 10,000 + 1,000 + 500 + 60 + 8$
(c) $6,00,00,000 + 4,00,000 + 10,000 + 8,000 + 500 + 10 + 7$
(d) $8,00,00,000 + 90,00,000 + 1,00,000 + 80,000 + 1,000 + 200 + 10 + 3$
17. (a) 62,45,635 (b) 9, 58, 61, 089
18. three million one hundred ninety-nine thousand two hundred three, two million three hundred eighteen thousand eight hundred twenty-two
19. 50000 Lakh
20. $300 \times 200 = 60000$
21. Rough estimate = 450000, Closer estimate = 440000 22. 7000 ml
23. Earth, 2100 Km
24. (a) 46 = XLVI (b) 90 = XC (c) 120 = CXX (d) 150 = CL
25. (a) $X X I I = 22$ (b) $C C X = 210$ (c) $D C C = 700$ (d) $L X I I I = 63$

LONG ANSWER TYPE QUESTIONS

Indian System Assamese : 1,30,79,696	International System 13,079,696
Hindi : 33,72,72,114	337,272,114
Konkani : 17,60,607	1,760,607

26. (a)
(b) one crore thirty lakh seventy-nine thousand six hundred ninety-six Thirty-three crore seventy-two lakh seventy-two thousand one hundred fourteen Seventeen lakh sixty thousand six hundred seven.
(c) Thirteen million seventy-nine thousand six hundred ninety-six.
Three hundred thirty-seven million two hundred seventy-two thousand one hundred fourteen
One million seven hundred sixty thousand six hundred seven.
27. (i) 567, 576, 657, 675, 756, 765 (ii) 209, 290, 902, 920
28. (i) Greatest = 6521 Smallest = 1256 (ii) Greatest = 9870 Smallest = 7089
(iii) Greatest = 6543 Smallest = 3456
(iv) Greatest = 8432 Smallest = 2348
(v) Greatest = 9520 Smallest = 2059
(vi) Greatest = 9631 Smallest = 1369





29. (i) Greatest = 6632 Smallest = 2236
(ii) Greatest = 6610 Smallest = 1006
(iii) Greatest = 9974 Smallest = 4479
(iv) Greatest = 5520 Smallest = 2005
30. (i) Greatest = 6987 Smallest = 6012
(ii) Greatest = 9487 Smallest = 1402
(iii) Greatest = 9876 Smallest = 1072
(iv) Greatest = 9871 Smallest = 2031
(v) Greatest = 9876 Smallest = 9012
(vi) Greatest = 9087 Smallest = 1023
(vii) Greatest = 9857 Smallest = 1052
(viii) Greatest = 9873 Smallest = 1023
31. 7999003568 32. 85041
33. (a) 1400 (b) 1200 (c) 14700 (d) 31300
34. (a) $3228 \approx 3200$; $572 \approx 600$ $3200 + 600 = 3800$
(b) $8010 \approx 8000$; $2507 \approx 3000$ $8000 - 3000 = 5000$
(c) $32 \approx 30$; $58 \approx 60$ $30 \times 60 = 1800$
(d) 108×47 ; $108 \approx 100$ $47 \approx 50$ $100 \times 50 = 5000$
35. 95,70,985 36. 9,00,085 37. 2,39,805 38. 1325 children

EXERCISE-III

PREVIOUS YEAR QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	A	B	B	B	D	D	D	B	A	B	D	A	B	A	D
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	B	B	D	B	A	C	D	D	B	D	C	B	C	A	D
Que.	31	32	33												
Ans.	C	C	C												

