Chapter 1

Knowing Our Numbers

Exercise 1.1

1. Write the smallest natural number. Can you write the largest natural number ?

Solution:

The smallest natural number is 1.

We cannot write the largest natural number because it is infinite.

2. Fill in the blanks :

(i) 1 lakh = ….. ten thousand

(ii) 1 million = ……hundred thousand

(iii) 1 crore = …… ten lakh

(iv) 1 billion = …… hundred million

Solution:

(i) 1 lakh = 10 ten thousand

(ii) 1 million = 10 hundred thousand

(iii) 1 crore = 10 ten lakh

(iv) 1 billion = 10 hundred million

3. Insert commas suitably and write each of the following numbers in words in the indian system and the international system of numeration.

(i) 506723

(ii) 180018018

Solution:

Indian system

(i) 506723 = 5,06,723

Five lakh six thousand seven hundred and twenty three.

(ii) 180018018 = 18,00,18,018

Eighteen crore eighteen thousand and eighteen.

International system

(i) 506723 = 5,06,723

fiven hundred six thousand seven hundred and twenty three.

(ii) 180018018 = 18,00,18,018

one hundred eighty million eithteen thousand and eighteen.

4. Write the following numbers in expanded form:

(i) 750687

(ii) 5032109

Solution:

Given numbers can be written in expanded form as,

(i) 750687 = 700000 + 50000 + 600 + 80 + 7

(ii) 5032109 = 5000000 + 30000 + 2000 + 100 + 9

5. Write the following numbers in Figures :

(i) Seven lakh three thousand four hundred twenty.

(ii) Eighty crore twenty three thousand ninety three.

Also write the above numbers in the place value chart.

Solution:

(i) 7,03,420

(ii) 80,00,23,093

By using place value chart,

	Periods	...	Arabs		Crores		Lakhs		Thousands		Units		
	Places		Ten Arabs	Arabs	Ten Crores	Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Units
(i)	Numbers							7	0	3	4	2	0
(ii)					8	0	0	0	2	3	0	9	3

6. Write each of the following numbers in numeral form and place commas correctly:

(i) Seventy three lakh seventy five thousand three hundred seven.

(ii) Nine crore five lakh forty one.

(iii) Fifty eight million four hundred twenty three thousand two hundred two.

Solution:

(i) 73, 75,307

(ii) 9,05,00,041

(iii) 58, 423,202

7. Write the face value and place value of the digit 6 in the number 756032.

Solution:

756032

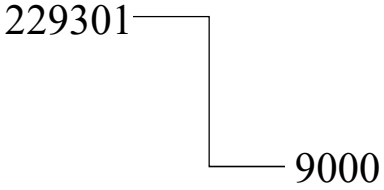
Face value of 6 = 6

Place value = 6000

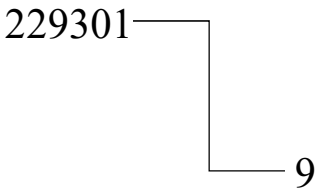
8. Find the difference between the place value and the face value of the digit 9 in the number 229301.

Solution :

Place value of 9



Face value of 9



difference = 9000

$$\begin{array}{r} -\ 9 \\ \hline 8\,9\,91 \end{array}$$

Question 9: Determine the difference of the place value of two 7's in 37014472 and write it in words in International system.

Solution :

The given number in International system can be written as 37,014,472

The place value of 7 at ten's place = $7 \times 10 = 70$

The place value of 7 at 7 million's place = $7 \times 1{,}000{,}000 = 7{,}000{,}000$

The required difference = 7,000,000 – 70 = 6,999,930

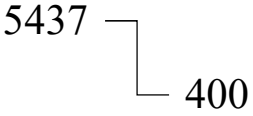
Six million nine hundred ninty thousand nine hundred thirty.

Question 10.

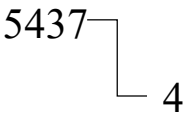
Determine the product of place value and the face value of the digit 4 in the number 5437.

Solution:

Place value of 4



Face value of 4



Product = $400 \times 4 = 1600$

Question 11.

Find the difference between the number 895 and that obtained on reversing its digits.

Solution :

First number = 895

Reversed number = 598

difference = 297

Exercise 1.2

Question 1.

Use the appropriate symbol < or > to fill in the blanks :

(i) 173 …… 189

(ii) 1058 …….. 1074

(iii) 8315 ……8037

Solution:

(i) 173 $\boxed{<}$ 189

(ii) 1058 $\boxed{<}$ 1074

(iii) 8315 $\boxed{>}$ 8037

Question 2 :

In each of the following pairs of numbers, state which number is smaller:

(i) 553,503

(ii) 41338,1139

(iii) 25431,24531

Solution:

(i) 503 number is smaller.

(ii) 1139 number is smaller.

(iii) 24531 number is smaller.

Question 3 : Find the greatest and the smallest numbers in each row :

(i) 71834, 75284, 571, 2333, 594

(ii) 9853, 7691, 9999, 12002.

Solution:

(i) 571 is the smallest number and 75284 is the greatest number.

(ii) 7691 is the smallest number and 12002 is the greatest number.

Question 4 :

Arrange the following numbers in ascending order:

304, 340, 34, 43, 430

Solution:

Arranging the following numbers in ascending order.

34, 43, 304, 340, 430

Question 5 :

Arrange the following numbers in descending order :

53, 7333, 553, 7529, 335.

Solution :

Arranging the following numbers in Descending order :

7529, 7333, 553, 335, 53

Question 6.

Write all possible 2-digits numbers that can be formed by using the digits, 3 and 4. Repetition of difits is not allowed. Also find their some

solution :

The given digits are 2, 3, 4 and repetition of digits is not allowed.

Out of the given digits, the possible ways of choosing the two digits are 2, 3; 2, 4; 3, 4

Using the digits 2 and 3, the numbers are 23 and 32

Similarly, Using the digits 2 and 4, the numbers are 24 and 42

Using the digits 3 and 4, the numbers are 34 and 43

Hence, all possible 2-digit numbers are 23, 32, 24, 42, 34, 43

∴ Sum of above numbers

= 23 + 34 + 32 + 24 + 43 + 42 = 198.

Question 7 :

Write all possible 3-digits numbers using the digits 3,1 and 5.

Repetition of digits is not allowed.

Solution :

We are required to write 3-digit numbers using the digits 1, 3, 5 and the repetition of the digits is not allowed.

Keeping 1 at unit's place, 3-digit number obtained are 351 and 531.

Keeping 3 at unit's place, 3-digit number obtained are153 and 513.

Keeping 5 at unit's place, 3-digit number obtained are 315 and 135.

Hence, all possible 3-digit numbers are : 315, 351, 153, 135, 531, 513

Question 8:

Write all possible 3-digits numbers using the digits 7, 0 and 6.

Repetition of digits is not allowed. Also, find their sum.

Solution:

we are required to write 3 –digit numbers using the digits 0,6,7 and the repetition of the digits is not allowed.

Keeping 0 at unit's place, 3-digit number obtained are 670 and 760.

Keeping 6 at unit's place, 3-digit number obtained are 706.

Keeping 7 at unit's place, 3-digit number obtained are 607.

Keeping 7 at unit's place, 3- digit number obtained are 607.

Hence, all possible 3- digit numbers are : 670, 760, 607, 706.

∴ Sum of above numbers

= 670 + 760 + 607 + 706 = 2743

Question : 9

Write all possible 2- digit numbers using the digits 4, 0 and 9. Repetition of digits is not allowed . Also find their sum.

Solution:

The given digits are 0, 4, 9 and repetition of digits is not allowed.

Out of the given digits, the possible ways of choosing the two digits are 4, 0; 4, 9; 9, 0

Using the digits 4 and 0, the number are 40.

Similarly, Using the digits 4 and 9, the numbers are 49 and 94.

Using the digits Hence, all possible 2-digit numbers are 40, 49, 90, 94

∴ Sum of above numbers = 40 + 49 + 90 + 94 = 273

Question 10 : Write all possible 2-digit numbers that can be formed by using the digit 3, 7 and 9. Repetition of digits is allowed.

Solution:

The given digits are 3, 7, 9 and repetition of digits is not allowed. Out of the given digits, the possible ways of choosing the two digits are 3, 7; 3, 9; 7, 9

Using the digits 3 and 7, the numbers are

37, 73, 33 and 77.

Similarly, Using the digits 3 and 9, the numbers are 39, 93, and 99.

Using the digits 7 and 9, the numbers are 79 and 97.

Hence, all possible 2-digit numbers are

37, 73, 33, 77, 39, 93, 99, 79, 97

Question 11.

Write all possible numbers using the digits 3, 1 and 5. Repetition of digits is not allowed.

Solution:

The given digits are 1,3, 5 and repetition of digits is not allowed.

The one-digit numbers that can be formed are 1, 3 and 5.

We are required to write 2-digit numbers.

Out of the given digits, the possible ways of choosing the two digits are 1, 3, 1, 5, 3, 5

Using the digits 1 and 3, the numbers are13 and 31.

Similarly, Using the digits 1 and 5, the numbers are 15 and 51.

Using the digits 3 and 5, the numbers are 35 and 53.

Hence, all possible 2-digitt numbers are

13, 31, 15, 51, 35, 53

Now, We are required to write 3-digit numbers using the digits 1, 3, 5 and the

repetition of the digits is not allowed. Keeping 1 at unit's place, 3-digit number obtained are 351 and 531.

Keeping 3 at unit's place, 3-digit number obtained are 153 and 513.

Keeping 5 at unit's place, 3-digit number obtained are 315 and 135.

Hence, all possibe 3-digit numbers are : 315, 351, 153, 135, 531, 513

All possible numbers using the digits 3, 1 and 5 are :

1, 3, 5, 31, 13, 35, 53, 15, 51, 315, 153, 351, 531, 513, 135.

Question 12.
How many 6-digi numbers are there in all ?

Solution:

The greatest 6- digit numbers = 999999

The greatest 5-digit numbers = 99999

The total number of 6-digit numbers

= 999999 – 99999

= 900000

Question 13. Write down the greatest number and the smallest number of 4-digits that can be formed by the digits 7,5, 0 and 4 using each digit only once.

Solution:

We are required to write 4-digits numbers using the digits 7, 5, 0, 4 and the repetition of the digits is not allowed.

Keeping 0 at unit's place, 4 – digit number obtained are 4570, 4750, 5470, 5740, 7540, and 7540.

Keeping 4 at unit's place, 4-digit number obtained are 5074, 5704, 7054 and 7504. Keeping 5 at unit's place, 4-digit number obtained are

Keeping 7 at unit's place, 4-digit number obtained are 4057, 4507, 5047 and 5407.

Hence, all possible 4-digit numbers are L 4570, 4750, 5470, 5740, 7450, 7540, 5074, 5704, 7054, 7504, 4075, 4705, 7045, 7405, 4057, 4507, 5047, 5407

Hence, The Greatest number = 7540 and the smallest number = 4057

Question 14 : Rearrange the digits of the number 5701024 to get the largest number and the smallest number of 7 digits.

Solution:

Largest number = 7542100

[Method used : Firstly, write largest to smallest number in descending order.] Smallest number = 1002457.

[Method used : Firstly, write smallest to largest number in ascending order. (start from 1 then 0 then next digits)]

Question 15.

Keeping the place value of digits 3 in the number 730265 same, rearrange the digits of the given number to get the largest number and smallest number of 6 digits.

Solution:

Keeping the same place values of digit 3 in the number 730265 and rearranging the digits of the given number,

Greatest number of 6 digits= 736520 Smallest number of 6 digits = 230567.

Question 16.

From the smallest and greatest 4-digit numbers by using any one digit twice from the digits :

(i) 5, 2, 3, 9
(ii) 6, 0, 1, 4
(iii) 4, 6, 1, 5, 8

Solution:

(i) The smallest 4-digit numbers = 2235

and the greatest 4-digit numbers = 9935

(ii) The smallest 4-digit numbers = 1004

The greatest 4-digit numbers = 6641

(iii) The smallest 4-digit numbers = 1145

The greatest 4-digit numbers = 8865

Question 17.

Write

(i) the greatest number of 6 digits

(ii) the smallest number of 7 digits. Also find their difference.

Solution:

(i) Greatest 6 digit number = 999999

(ii) Smallest 7 digit number = 1000000

∴ Their Difference

$$\begin{array}{r} 1000000 \\ -\quad 999999 \\ \hline 1 \\ \hline \end{array}$$

Question 18.

Write the greatest 4-digit number of distinct digits.

Solution:

Greatest 4-digit number of four different digit = 9876

Question 19.

Write the smallest 4-digit number of distinct digits.

Solution:

Smallest 4-digit number of four digit = 1023

Question 20.

Write the greatest 6-digit number using three different digits.

Solution:

Greatest 6 digit number using three different digits = 999987.

Question 21.

Write the smallest 7-digit number using four different digits.

Solution:

Smallest 7 digit number by using four different digit = 1000023

Question 22.

Write the greatest and the smallest 4-digit numbers using four different digits with the conditions as given :

(i) Digit 7 is always at units place.

(ii) Digit 4 is always at tens place.

(iii) Digit 9 is always at hundreds place.

(iv) Digit 2 is always at thousands place.

Solution:

(i) 9867; 1027

(ii) 9847; 1042

(iii) 8976; 1902

(iv) 2987; 2013

Exercise 1.3

Question 1.

In a particular year, a company manufactured 8570435 bicycles and next year it manufactured 8756430 bicycles. In Which year more bicycles were manufactured and by how many ?

Solution:

Production of bicycles in a particular year

= 85,70,435

Production of bicycles in a next year

= 87,56,430

Both the numbers 85,70,435 and 87,56,430 are 7 digit numbers and 87 > 85.

∴ 87, 56,430 > 85,70, 435

∴ Their Difference

$$\begin{array}{r} 8756430 \\ -\ 8570435 \\ \hline 185995 \end{array}$$

Hence, the production of bicycles in a next year is more and by 1,85,995 cycles of 87,56,430.

Question 2. What number must be subtracted from 1,02,59,756 to get 77,63,835 ?

Solution:

First number = 1,02,59,756

Resultant number = 77,63,835

$$\begin{array}{r} 1,02,59,756 \\ -\ 77,63,835 \\ \hline 2495921 \end{array}$$

The number to be subtracted from first number to obtain the resultant number is 24,95,921.

Question 3.

The sale receipt of a company during a year was ₹ 30587850. Next year it increased by ₹6375490. What was the total sale receipt of the company during these two years ?

Solution:

Sale in the first year = ₹30587850

Sale increased in the next year by = ₹6375490

∴ Sale in the second year

= ₹ 30587850 + ₹ 6375490

= ₹ 36963340

$$\begin{array}{r} 30587850 \\ +\ 36963340 \\ \hline 67551190 \end{array}$$

Total sale for the two years = ₹67551190

Question 4.

A machine manufactures 23875 screws per day. How many screws did it produce iff the year 2012 ? Assume that the machine worked on all the days of the year ?

Solution:

Production ofscrews per day = 23875

2012 is a leap year, So there are 366 days

Total production pf screws per year

= 23875 × 366 = 8738250

$$
\begin{array}{r}
23875 \\
\times\ 366 \\
\hline
143250 \\
143250\times \\
71625\ \times\times \\
\hline
8738250 \\
\hline
\end{array}
$$

Question:5

A merchant had ₹ 78,592 with him. He placed an order for puchasing 54 bicycles at ₹ 970 each. How much money will remain with him after the purchase ?

Solution :

Total money available with merchant = ₹ 78,592

Total money paid for purchasing 54 bicycles at ₹ 970 = ₹52,380

$$\begin{array}{r} 970 \\ \times 54 \\ \hline 3880 \\ 4850\times \\ \hline 52\ 380 \end{array}$$

Money left with merchant

= ₹ 78,592 - ₹52,380

= ₹26,212

Question 6.

Amitabh is 1m 82 cm tall and his wife is 35 cm shorter than him. What is his wife's height ?

Solution:

Height of Amitabh = 1m 82 cm

= $1 \times 100 + 82cm$ = 182 cm

Amitabh wifes 35 shorter than Amitabh

∴ Amitabh wife height = 182 – 35 = 147 cm

Question 7.

The mass of each gas cylinder is 21kg 270g. What is total mass of 28 such cylinders ?

Solution:

Mass of one gas cylinder = 21 kg 270g
= 21×1000 + 270 g
= 21270 g
Total mass of 28 gas cylinder = 21270×28
= 595560g
= 59kg 556g

21278

× 28

170160

42450×

595560

Question 8.

In order to make a shirt, 2m 25 cm Cloth is needed. What length of cloth is required to make 18 such shirts ?

Solution :

The length of cloth required to stitch one shirt = 2m 25 cm

$= 2 \times 100 + 25cm = 225\ cm$

The length of cloth required to stitch 18 shirts

$= 225 \times 18 = 4050\ cm$

= 40 m 50cm

Question 9:

The total mass of 12 packets of sweets, each of the same size, is 15 kg 600g. What is the mass of each such packet ?

Solution:

Total mass of 12 packets of sweets

= 15kg 600g

$= 15 \times 1000 + 600g$

= 15600 g

Total mass of one packet of sweets

= 15600 – 12 = 1300g

= 1 kg 300g

$$
\begin{array}{r}
1300 \\
12\overline{)\,15600} \\
-\,12 \\
\hline
36 \\
-36 \\
\hline
0
\end{array}
$$

Question 10.

A vessel has 4 litres 500 millilitres of orange juice. In how many glasses, each of 25 mL capacity, can it be filled ?

Solution :

Total capacity of vessel containing orange juice = 4 litres 500 mL

$= 4 \times 1000 + 500\text{mL}$

$= 4500$ mL

Size of glass = 25mL

Number of glass = $\frac{Total\ Capacity}{Size\ of\ glass}$

$= \frac{4500}{25}$

= 180 glasses

$$
\begin{array}{r}
180 \\
25\overline{)\,4500} \\
25 \\
\hline
200 \\
200 \\
\hline
0
\end{array}
$$

Question 11.

To stitcha trouser, 1m 30 cm cloth is needed. Out of 25m cloth, how many trousers can be stitched and how much cloth will remain ?

Solution :

Total length of cloth available = 25m

$= 25 \times 100 = 2500$ cm

The length of cloth required to stitch a trouser

= 1m 30cm

= 100 + 30cm = 130cm

Dividing 2500 by 130, we get quotient = 19 and remainder = 30

$$
\begin{array}{r}
19 \\
130\overline{)\,2500} \\
130 \\
\hline
1200 \\
1170 \\
\hline
30
\end{array}
$$

∴ The number of trousers that can be stitched = 19

and the length of the remaining cloth = 30 cm

Exercise 1.4

Question 1. Round off each of the following numbers to their nearest tens :

(i) 77

(ii) 903

(iii) 70 1205

(iv) 999

Solution:

(i) 77

The digit at unit place is 7, which is greater than 5.

Hence, the rounded off number to nearest tens = 80.

(ii) 903

The digit at unit place is 7, which is greater than 5.

Hence, the rounded off number to nearest tens = 80.

(iii) 1205

The digit at unit place is 5, which is greater than 5.

Hence, the rounded off number to nearest tens = 1210.

(iv) 999

The digit at unit place is 9, which is greater than 5.

Hence, the rounded off number to nearest tens = 1000.

Question 2:

Estimate each of the following numbers to their nearest hundreds :

(i) 1246

(ii) 32057

(iii) 53961

(iv) 555555

Solution ;

(i) 1246

The digit at tens place is 4, which is less than 5.

Hence, the rounded off number to nearest hundreds =1200.

(ii) 32057

The digit at tens place is 5, which is equal to 5.

Hence, the rounded off number to nearest hundreds = 32100.

(iii) 53961

The digit at tens place is 6, which is greater than 5.

Hence, the rounded off number to nearest hundreds = 54000.

(iv) 555555

The digit at tens place is 5, which is equal to 5.

Hence, the rounded off number to nearest hundreds = 555600.

Question 3.

Estimate each of the following numbers to their nearst thousands:

(i) 5706

(ii) 378

(iii) 47,599

(iv) 1,09,736

Solution:

(i) 5706

The digit at hundred place is 7, which is greater than 5.

Hence, the rounded off number to nearest thousands = 6000.

(ii) 378

The digit at hundred place is 3, which is less than 5.

Hence, the rounded off number to nearest thousands = 0.

(iii) 47,599

The digit at hundred place is 5, which is equal to 5.

Hence, the rounded off number to nearest thousands = 48000.

(iv) 1,09,736

The digit at hundred place is 7, which is greater than 5.

Hence, the rounded off number to nearest thousands = 1,10,000.

Question 4.

Give a rough estimate (by rounding off to nearest hundreds) and also a closer estimate (by rounding off to nearest tens) :

(i) 439 + 334 + 4317

(ii) 8325 – 491

(iii) 1,08,734 – 47,599

(iv) 4,89,348 – 48, 365

Solution:

(i) Rounding off to nearest hundreds = 439 + 334 + 4317

= 400 + 300 + 4300 = 5000 Rounding off to nearest tens 439 + 334 + 4317

= 440 + 330 + 4320 = 5090

(ii) Rounding off to nearest hundreds 8325 – 491

= 8300 – 500 = 7840

(iii) 1,08,734 – 47,599

Rounding off to nearest hundreds 1,08,734 -47,599

= 1,08,734 – 47,599

= 61,130

(iv) 4,89,348 – 48 , 365

Rounding off to nearest hundreds 4,89,348 – 48 , 365

= 4,89,348 – 48 , 365

= 4,40,900

Rounding off to nearest tens = 4,89,348 – 48,365

= 4,89,350 – 48,370 = 4,40,980

Question 5.

Estimate each of the following by rounding off each number nearest to its greatest place :

(i) 730 + 998

(ii) 5,290 + 17,986

(iii) 796 – 314

(iv) 28,292 – 21,496

Solution:

(i) 730 + 998

Rounding off 730 to its greatest place i.e. hundred place = 700

Rounding off 998 to its greatest place i.e. hundred place = 1000

Hence, estimated sum = 700 + 1000 = 1700

(ii) 5,290 + 17,986

Rounding off 5,290 to its greatest place i.e. hundred place = 5000

Rounding off 17,986 to its greatest place i.e. hundred place = 18,000

Hence, estimated sum = 5000 + 18,000 = 23,000

(iii) 796 – 314

Rounding off 796 to its greatest place i.e. hundreds place = 800

Rounding off 314 to its greatest place i.e. hundred place = 300

Hence, estimated difference = 800 - 300 = 500

(iv) 28,292 – 21,496

Rounding off 28,292 to its greatest place i.e. thousands place = 28,000

Rounding off 21,496 to its greatest place i.e. thousands place = 21,000

Hence, estimated difference = 28,000 – 21,000 = 7,000

Question 6.

Estimate the following products by rounding off each of its factors nearest to its greatest place :

(i) 578 × 161

(ii) 9650 × 27

Solution:

(i) 578 × 161

Rounding off 578 to its greatest place i.e. hundreds place = 600

Rounding off 161 to its greatest place i.e. hundreds place = 200

Hence, estimates product = 600 × 200 = 1,20,000

(ii) 9650×27

Rounding off 9650 to its greatest place i.e. hundreds place = 10000

Rounding off 27 to its greatest place i.e. tens place = 30

Hence, estimates product = $10000 \times 30 = 3,00,000$

Question 7.

Estimate the following products by rounding off each of its factors nearest to its hundreds place :

(i) 5281×3491

(ii) 1387×888

Solution:

(i) 5281×3491

Rounding off 5281 to its hundreds place = 5300

Rounding off 3491 to its hundreds = 3500

Hence, estimates product = $5300 \times 3500 = 1,85,50,000$

(ii) 1387×888

Rounding off 1387 to its hundreds place = 1400

Rounding off 888 to its hundreds = 900

Hence, estimates product = $1400 \times 900 = 12,60,000$

Objective Type Questions

Mental Maths

Question 1.

Fill in the blanks :

(i) The digit …… has the highest place value in the number 2309.

(ii) The digit …… has the highest face value in the number 2039.

(iii) The digit …… has the lowest place value in the number 2039.

(iv) Both indian and International systems of numeration have …… Period in common.

(v) In the International system of numeration, commas are placed from ……. after every ……. digits.

(vi) The bigger number from the numbers 57,631 and 57,361 is ……

(vii) 1 Crore = …….. million

(viii) The smallest 4-digit number with 3 different digits is …….

(ix) The greatest 4-digit number with 3 different digits is ……..

(x) 15 km 300 m = ……m

(xi) 7850 cm = ……..m…….cm

(xii) The number 5709 when estimated to the nearest hundreds is …….

Solution:

(i) The digits 2 has the highest place value in the number 2309.

(ii) The digits 9 has the highest face value in the number 2039.

(iii) The digits 0 has the lowest face value in the number 2039.

(iv) Both Indian and International systems of numeration have ones period in common.

(v) In the International system of numeration, commas are placed from right after every 3 digits.

(vi) The bigger number from the numbers 57,631 and 57,361 is 57,631.

(vii) 1 crore = 10 million

(viii) The smallest 4-digit number with 3 different digits is 1002.

(ix) The greatest 4-digit number with 3 different digits is 9987.

(x) 15 km 300 m =15300 m

(xi) 7850 cm = 78 m 50 cm

(xii) The number 5709 when estimated to the nearest hundreds is 5100.

Question 2.

State whether the following statements are true (T) or false (F) :

(i) The difference between the place value and the face of the digit 7 in the number 2701 is 693.

(ii) The smallest 4-digit number -1 = the greatest 3- digit number.

(iii) The place of a digit is independent of whether the number is written in the Indian system or International system of numeration.

(iv) In the Internation system, a numbe having less number of digits is always smaller than the number having more number of digits.

(v) The estimated value of 9999 to the nearest tens is 10000.

Solution:

(i) The difference between the place value and the face of the digit 7 in the number 2701 is 693. **True**

(ii) The smallest 4-digit number -1 = the greatest 3- digit number. **True**

(iii) The place of a digit is independent of whether the number is written in the Indian system or International system of numeration. **True**

(iv) In the Internation system, a numbe having less number of digits is always smaller than the number having more number of digits. **True**

(v) The estimated value of 9999 to the nearest.

Multiple Choice Questions
Choose the correst answer from the given four options (3 to 17):
Choose the correct answer from the given four options (3 to 17):

Question 3.
The face value of the digit 5 in the number 36503 is
(a) 5
(b) 503
(c) 500
(d) none of these
Solution:
The place value of 5 at hundred's place
= 5 × 100 = 500 (c)

Question 4.
The difference between the place values of 6 and 3 in 76834 is
(a) 3
(b) 5700
(c) 5930
(d) 5970
Solution:
The place value of 6 at thousand's place
= 6 × 1000 = 6,000
The place value of 3 at ten's place
= 3 × 10 = 30
The difference between the place value of 6 and 3
= 6000 – 30 = 5970 (d)

Question 5.
The sum of the place values of all the digits in 5003 is
(a) 8
(b) 53
(c) 5003
(d) 8000
Solution:
The place value of 3 at one's place
$=3 \times 1 = 3$
The place value of 0 at ten's place $= 0 \times 10 = 0$
The place value of 0 at hundred's place $= 0 \times 100 = 0$
The place value of 5 at thousand's place $= 5 \times 1000 = 5000$
The sum of the place value of all the digits
in $5003 = 3 + 0 + 0 + 5000 = 5003$ (c)

Question 6.
The total number of 4-digit numbers is
(a) 9000
(b) 9999
(c) 10000
(d) none of these
Solution:
The greatest 3-digit number = 999
The greatest 4-digit number = 9999.
The total number of 4-digit numbers
$= 9999 - 999 = 9000$ (a)

Question 7.
The product of the place values of two values of two-threes in 73532 is
(a) 9000
(b) 90000
(c) 99000
(d) 1000
Solution:
The place value of 3 at ten's place = $3 \times 10 = 30$
The place value of 3 at thousand's place = $3 \times 1000 = 3000$
The product of place value of two threes $= 30 \times 3000 = 90000(b)$

Question 8.
The smallest 4-digit number having distinct digits is
(a) 1234
(b) 1023
(c) 1002
(d) 3210
Solution:
The smallest 4-digit number having distinct digits is 1002 (c).

Question 9.
The largest 4-digit number having distinct digits is
(a) 9999
(b) 9867
(c) 9786
(d) 9876
Solution;
The largest 4-digit number having distinct digits is 9867.(b)

Question 10.
The largest 4-digit number is
(a) 9999
(b) 9876
(c) 9990
(d) none of these
Solution:
The largest 4-digit number is 9999.(a)

Question 11.

The difference between the largest number of 3-digit and the largest number of 3-digit with distinct digits is

(a) 0

(b) 10

(c) 12

(d) 14

Solution:

The largest number of 3-digit = 999

The largest number of 3-digit with distinct digits = 987

∴ Their difference = 999 – 987= 12(c)

Question 12.

If we write natural numbers from 1 to 100, the number of times the digit 5 has been written is

(a) 11

(b) 15

(c) 19

(d) 20

Solution:

If we write natural numbers from 1 to 100, the number of times the digit 5 has been writtern is 20.(d)

Question 13.

The number 28,549 when rounded off to the nearest hundreds is

(a) 28,000

(b) 28,500

(c) 28,600

(d) 29,000

Solution :

28,549

The digit at tens place is 4, which is less than 5.

Hence, the rounded off number to nearest hundreds = 28,500. (b)

Question 14.

The smallest natural number which when rounded off to the nearest hundreds as 500 is

(a) 499

(b) 501

(c) 450

(d) 549

Solution:

The smallest natural number which when rounded off to the nearest hundreds as 500 is 450. (c)

This is so because the digit at tens place is 5, which is equal to 5.

Question 15.

The greatest natural number which when rounded off to the nearest hundreds as 500 is

(a) 549

(b) 599

(c) 450

(d) none of these

Solution :

The greatest natural number which when rounded off to the nearest hundreds as 500 is 549. (a)

This is so because thedigit at tens place is 4, which is less than 5.

Question 16.

The greatest 5-digit number formed by the digits 3, 0, 7 is

(a) 33077

(b) 77730

(c) 77330

(d) none of these

Solution:

The greatest 5-digit number formed by the digits 3, 0, 7 is 77730.(b)

Question 17.

In the International place value system, we write 1 billion for

(a) 10 lakh

(b) 1 crore

(c) 10 Crore

(d) 100 Crore

Solution:

In the International place value system, we write 1 billion for 100 crore.
(d)

Value Based Questions

Question 1.

The distance between Anu's home and her school is 4 km 850 m. Everyday she cycles both ways. Find the distance covered by her in a week. (Sunday being a holiday). What are the advantages of cycling ?

Solution :

Distance between Anu's home and her school

= 4 km 850 m = 4 × 1000 + 850

= 4850 m

Distance travelled by Anu per day = 4850 m × 2 = 9700 m

Since, in a week there are 7 days but Sunday is off.

Hence, distance travelled by anu for 6 days (a week)

= 9700 × 6 = 58200 m

= 58 km 200 m

Cycling is good for health and it saves fuel and helps in reducing pollution.

Higher Order Thinking Skills (HOTS)

Question 1.

Is there any digit whose place value is always equal to its face value irrespective of its position in any number ?

Solution :

Yes, the digit is 0.

Question 2.

Write all 4-digit numbers that can be formed with the digits 2 and 5, using both digits equal number of time. Also find their sum.

Solution:

Possible numbers are : 2255, 2552, 2525, 5225, 5252, 5522

and their sum = 2255 + 2552 + 2525 + 5225 + 5252 + 5522 = 23331

Thousand	Hundred	Tens	Ones
2	2	5	5
2	5	5	2
2	5	2	5
5	2	2	5
5	2	5	2
5	5	2	2

Question 3.

What is the difference between the smallest 6-digit number with five different digits and the greatest 5-digit number with four different digits ?

Solution:

The smallest 6-digit number with five different digits = 100234.

The greatest 5-digit number with four different digits = 99876.

Their difference = 100234 – 99876 = 358

Question 4.

How many times does the digit 3 occur at tert's place in natural numbers from 100 to 1000 ?

Solution:

90 times i.e. 3, 13, 23, 33, 43, 53, 63 73, 83, 93 and upto 983, 993.

Check your Progress

Question 1.

Write the numeral for each of the following numbers and insert commas correctly.

(i) Six crore nine lakh forty seven.

(ii) One hundred four million seven hundred two thousand three hundred ninety four.

Solution:

(i) 6,09,00,047

(ii) 104, 722, 394

Question 2: Insert commas suitably and write the number 30189301 in words in Indian and International system of numeration.

Solution:

International system = 30,189,301

Three Crore one lakh eighty nine thousand three hundred one Thirty million one hundred eighty nine thousand three hundred one

Question 3.

Find the difference between the place value and the face value of the digit 6 in the number 72601.

Solution:

Place value of 6

72601
└ 600

Face value of 6

72601
└ 6

difference = 600
- 6

594

Question 4.

Write all possible two-digit number using the digits 4 and 0. repetition of digits is allowed.

Solution:

Possible digit numbers = 40,44

Question 5.

Write all possible natural numbers using the digits 7,0,6. Repetition of digits is not allowed.

Solution:

The given digits are 7, 0, 6 and repetition of digits is not allowed.

The one-digit numbers that can be formed are 7 and 6.

We are required to write 2-digit numbers.

Out of the given digits, the possible ways of choosing the two digits are 7, 0; 6, 0; 6, 7

Using the digits 7 and 0, the numbers are 70.

Similarly, Using the digits 6 and 0, the numbers are 60

Using the digits 6 and 7, the numbers are 67 and 76.

Hence, all possible 2-digit numbers are

60, 70, 67, 76

Now, we are required to write 3-digit numbers using the digits 7, 0, 6 and the repetition of the digits is not allowed. Keeping 0 at unit's place, 3-digit number obtained are 670 and 760.

Keeping 6 at unit's place, 3-digit number obtained are 706.

Keeping 7 at unit's place, 3-digit number obtained are 607.

Hence, alll possible 3-digit numbers are : 670, 760, 706 and 607.

All possible numbers using the digits 7, 0 and 6 are

6, 7, 76, 67, 70, 60, 706, 607, 760, 670.

Question 6.

Arrange the following numbers in ascending Order :

3706, 58019, 3706, 59801, 560023

Solution:

3706, 58019, 3706, 59801, 560023

Question 7.

Write the greatest six-digit number using four different digits.

Solution:

Greatest six-digits number using four different digits is 999876.

Question 8.

Write the smallest-eight number using four different digits.

Solution:

Smallest-eight digit number = 10000023

Question 9.

Find the difference between the greatest and the smallest 4-digit numbers formed by the digits 0, 3, 6, 9.

Solution:

The greatest 4-digit number using 0, 3, 6, 9 = 9630

The smallest 4-digit number using 0, 3, 6, 9 = 3069

∴ Their Difference = 9630 – 3069 = 6561

Question 10.

Find the sum of the four-digit greatest number and the five-digit smallest number, each number having three different digits.

Solution:

Four digit greatest number with three different digits = 9987

Five digit smallest number with three different digits = 10002

∴ Their Sum = 9987 + 10002 = 19989

Question 11.

Write the greatest and the smallest four-digit numbers using four different digits with the conditions as given :

(i) Digit 3 always at hundred's place.

(i) Digit 0 always at ten's place.

Solution:

(i) 9387 ; 1302

(ii) 9807; 1203

Question 12.

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 the digits 8, 3, 5, 0, 6.

Solution:

The mobile number is 9979003568.

Question 13.

Two stitch a uniform, 1 m 75 cm cloth is needed. Out of 153m cloth, how many uniforms can be stitched and how much cloth will remain ?

Solution:

Total cloth 153 m = 15300 cm

To stitch a uniform, cloth needed

= 1m 75cm = 175 cm

Total uniforms can be stitched = $\frac{15300}{175}$

= $87\frac{75}{175}$

Hence, 87 uniforms can be stiched 75 cm cloth will remain extra.

Question 14.

Medicine is packed in boxes, each weighing 4 kg 500g. How many such boxes can be loaded in a van which cannot carry beyond 800 kg?

Solution:

Weight of 1 box = 4 kg 500 gm

= $4 \times 1000 + 500 = 4500$ gm

Van can carry upto 800 kg

= $800 \times 1000 = 800000$ gm

Numbers of boxes that can be loaded in van

$= \frac{800000}{4500} = 117.8$ i.e. 177 boxes

A Van can 1c d 177 boxes of medicines.

Question 15.

Estimate : 6554 – 677 by estimating the numbers to their nearest

(i) thousands

(ii) hundreds

(iii) greatest places

Also point out the most reasonable estimate.

Solution:

(i) Thousands (6554 – 677)

→ 7000 – 1000 = 6000

(ii) Hundreds (6554 – 677)

→ 6600 – 700 = 5900

(iii) Greatest places (6554 – 677)

→ 7000 – 700 =6300

Estimation to their nearest hundreds is most reasonable.