

(1) (i) The largest number of 5 digits is 99,999 and the smallest number of 6-digits is 100,000.

(ii) The difference between the smallest number of four digits and the largest number of three digits =
1000 - 999 = 1999

(iii) Four lakhs sixty-seven thousand and three hundred six.

= 467306 (In numerical form)

= 467,306 (In International system)

= 467,306 (In International numeration)

(iv) Thirteen lakhs forty-five

= 1300045 (In numerical form)

= 1300,045 (In International system)

= 1,300,045 (In International numeration)

(v) On subtracting one from the smallest four digit number, we get 999 which is the greatest three-digit number.

2. Choose the correct answer.

(i) Which is the smallest factor of 2314?

Ans (b) 1

(ii) Which is the smallest odd composite number?

Ans (c) 9

(iii) Which of the following is divisible by 2 but not by 4?

(a) 102

(iv) Find the smallest number which, when divided by 12, 15, 18, 24 and 36 leaves no remainder.

Ans (a) 360

(v) Find the smallest number which, when increased by one is exactly divisible by 12, 18, 24, 32 and 40.

(a) 1439

(v). The product of two numbers is 19,200 and their H.C.F. is 40. Find their L.C.M.

(b) 480

3) Write 428140625 by placing the comma according to International system

Ans 42,814,062

(4) Take two digit 4 and 5 the smallest 4-digit number using the digits equal number of times is a

(a) 4455

(5) Form the largest number with the digits 2, 3, 5, 7, 6 and 0 without repetition of any digit

Ans 906532

(6) Write the smallest and the greatest numbers of 4 digits without repetition of any digit.

Ans smallest \rightarrow 1000
greatest \rightarrow 9999

7. Write the cardinal number of

$$F = \{ \text{whole numbers from 8 to 14} \}$$

$$F = \{ 8, 9, 10, 11, 12, 13, 14 \}$$

(8) Solve the following

(i) $2y - 5 = -11$

Ans $2y - 5 = 11$

$$2y = 11 + 5$$

$$2y = 16$$

$$y = \frac{16}{2}$$

$$y = 8$$

(ii) $5y - 3.5 = 10$

Ans $5y - 3.5 = 10$

$$5y = 10 + 3.5$$

$$5y = 13.5$$

$$y = \frac{13.5}{5}$$

$$y = 2.7$$

(9) In an election two candidates A and B are the only contestants. If candidate A scored 932567 votes and candidate B scored 900235 votes by how much margin did A win or lose the election?

Ans votes scored by candidate A = 932567

votes scored by candidate B = 900235

candidate A win the election by margin =

$$\begin{array}{r} 932567 - 900235 \\ \hline 32342 \end{array}$$

$$= 32342$$

$$\begin{array}{r} 932567 \\ 900235 \\ \hline 032342 \end{array}$$

10 Starting from the greatest 5-digit number, write the previous five numbers in descending order.

Ans 9998, 9997, 9996, 9995, 9994

(11) Starting from the smallest 7-digit number, write the next four numbers in ascending order.

Ans) 1000001, 1000002, 1000003, 1000004

(12) By re-arranging the given numbers, evaluate

(i) $2 \times 487 \times 50$

Ans) $2 \times 50 = 100$

$$2 \times 487 \times 50 = (2 \times 50) \times 487 = 100 \times 487 = 48700$$

(ii) $25 \times 444 \times 4$

$25 \times 4 = 100$

$$25 \times 444 \times 4 = (25 \times 4) \times 444 = 100 \times 444 = 44400$$

13. Evaluate using properties:

(i) 548×98

$$(500 + 40 + 8) \times 98$$

$$= 500 \times 98 + 40 \times 98 + 8 \times 98$$

$$= 49000 + 3920 + 784 = 53204$$

(ii) 924×997

Ans) $(900 + 20 + 4) \times 997$

$$= 900 \times 997 + 20 \times 997 + 4 \times 997$$

$$8973000 + 19940 + 39880 = 9572120$$

(ii) 3002×723

$$(3000 + 2) \times 723$$

$$3000 \times 723 + 2 \times 723$$

$$2,169,000 + 1,446 = 2,170,446$$

(12) Add

$$\begin{array}{r} 259 \\ 214 \\ \hline 473 \end{array}$$

(i) Ans - 285

(ii) -623 and 326

Ans - 297

(13) Subtract

$$-123 \text{ from } 453$$

Ans - 576

(ii) -78 from -12

Ans 90

(i) 329 from 453

Ans -124

(ii) -222 from 0

Ans -222

15. In each case arrange the given integers in ascending order, using a number line.

~~5, -8, 0, 5~~

(i) $-8, 0, -5, 5, 4, -1$

Ans $-8, -5, -1, 0, 4, 5$

(ii) $3, -3, 4, -2, 0, -6, 2$

Ans $-6, -3, -2, 0, 2, 3, 4$

16. Find the H.C.F. of:

(i) 5 and 8

$$\begin{array}{r} 5 \overline{) 5} \\ \underline{5} \\ 0 \end{array}$$

$$\begin{array}{r} 2 \overline{) 8} \\ \underline{4} \\ 4 \\ \underline{4} \\ 0 \end{array}$$

$5 = 5 \times 1$

$8 = 2 \times 2 \times 2$

Ans 1

(i) 24 and 49

$$\begin{array}{r} 2 \overline{) 24} \\ \underline{2} \\ 0 \\ 2 \overline{) 12} \\ \underline{2} \\ 0 \\ 2 \overline{) 6} \\ \underline{2} \\ 0 \end{array}$$

$$\begin{array}{r} 7 \overline{) 49} \\ \underline{7} \\ 0 \end{array}$$

$$24 = 2 \times 2 \times 2 \times 3$$

$$49 = 7 \times 7 = \text{There is no HCF}$$

(ii) 40, 60 and 80

$$\begin{array}{r} 2 \overline{) 40} \\ \underline{2} \\ 2 \overline{) 20} \\ \underline{2} \\ 2 \overline{) 10} \\ \underline{2} \\ 5 \end{array}$$

$$\begin{array}{r} 2 \overline{) 60} \\ \underline{2} \\ 2 \overline{) 30} \\ \underline{2} \\ 3 \overline{) 15} \\ \underline{3} \\ 5 \end{array}$$

$$\begin{array}{r} 2 \overline{) 80} \\ \underline{2} \\ 2 \overline{) 40} \\ \underline{2} \\ 2 \overline{) 20} \\ \underline{2} \\ 2 \overline{) 10} \\ \underline{2} \\ 5 \end{array}$$

$$40 = 2 \times 2 \times 2 \times 5$$

$$60 = 2 \times 2 \times 3 \times 5$$

$$80 = 2 \times 2 \times 2 \times 2 \times 5$$

$$\text{HCF } 2 \times 2 = 4$$

(iv) 48, 84 and 88

| | | |
|---|---|--|
| $\begin{array}{r l} 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline & 3 \end{array}$ | $\begin{array}{r l} 2 & 84 \\ \hline 2 & 42 \\ \hline 3 & 21 \\ \hline & 7 \end{array}$ | $\begin{array}{r l} 2 & 88 \\ \hline 2 & 44 \\ \hline 2 & 22 \\ \hline & 11 \end{array}$ |
|---|---|--|

$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

$$84 = 2 \times 2 \times 3 \times 7$$

$$88 = 2 \times 2 \times 2 \times 11$$

$$\text{HCF} = 2 \times 2 = 4$$

(v) 12, 16 and 28

| | | |
|---|---|--|
| $\begin{array}{r l} 2 & 12 \\ \hline 2 & 6 \\ \hline & 3 \end{array}$ | $\begin{array}{r l} 2 & 16 \\ \hline 2 & 8 \\ \hline 2 & 4 \\ \hline & 2 \end{array}$ | $\begin{array}{r l} 2 & 28 \\ \hline 2 & 14 \\ \hline & 7 \end{array}$ |
|---|---|--|

$$12 = 2 \times 2 \times 3$$

$$16 = 2 \times 2 \times 2 \times 2$$

$$28 = 2 \times 2 \times 7$$

$$\text{HCF} = 2 \times 2 = 4$$

(17) The H.C.F. and the L.C.M. of two numbers and 50 and 300 respectively. If one of the numbers is 150, Find the other one.

$$H.C.F. = 50$$

$$L.C.M. = 300$$

Product of L.C.M. and H.C.F. =

$$300 \times 50 = 15000$$

$$\text{one number} = 150$$

∴ The other number

$$= \frac{15000}{150}$$

$$= 100$$

18. The product of two numbers is 432 and their L.C.M. is

72. Find their H.C.F.

Product of two numbers =

Product of their L.C.M. and H.C.F.

Here, product of two numbers = 432

$$LCM = 72$$

$$HCF = \frac{432}{72} = 6$$

19. Write the degree of each of the following polynomials

(i) $x + x^2$

Ans

20. State the numerical coefficient of the following monomials:

(i) $5xy$ -

Ans: 5

(ii) abc

Ans: 1

(iii) $5pqr$

Ans: 5

(iv) $-2x/y$

Ans: -2

22. Without making any actual division show

that 2300023 is divisible by 23

$$\text{Ans } 2300023 = 2300000 + 23$$

$$= 23 \times (100000 + 1)$$

$$= 23 \times 100001$$

23. Without actual division -

$$(i) 1608$$

$$= 1600 + 8$$

$$= 8 (200 + 1)$$

$$= 8 \times 201 = 1608$$

$$(ii) 56008$$

$$= 56000 + 8$$

$$= 8 \times (7000 + 1)$$

$$= 8 \times 7001 = 56008$$

$$(iii) 240008$$

$$= 240000 + 8$$

$$= 8 \times (30000 + 1)$$

$$= 8 \times 30001 = 240008$$

24. Find which of the following numbers are divisible by 10:

(a)

(i) 9990

divisible by 10

(ii) 0

Ans (i) Divisible by 10

(ii) - 847

Ans (i) not Divisible by 10

(iii) 8976

Ans Not Divisible by 10

~~26~~ (i) 5818

Ans is Divisible by 11

(ii) 18,917 =

Ans not Divisible by 11

(ii) 10857

Ans is Divisible by 11

(i) 64m3

Ans $6 + 4 + 3 = 13$

The number next to 13 which is divisible by 3 is 15

Required smallest number = $15 - 13 = 2$

46 m 46

$$\Rightarrow 4+6+4+6=20$$

The number next to 20 which is divisible by 3 is

21

$$\text{Required smallest number} = 21 - 20$$

$$= 1$$

(iii) 27 m 53

$$2+7+5+3=18$$

18 is divisible by 3.

$$\text{required smallest number} = 0$$

28 AM The number be x

The number multiply by 5 $= 5x$

The result added to 6 $= 5x + 6$

The resultant is subtracted from $y = 5x + 6 - y$

$$\text{The resultant} = 5x + 6 - y$$

29) ~~one pencil costs Rs 2~~

Ans cost of one pencil = Rs 2

cost of one fountain pen = Rs 15

cost of x pencils = $2x$

cost of y fountain pens = $15y$

So the cost of x pencils and y fountain pen = Rs $(2x + 15y)$

30) Ans Number of rooms on the first floor = x

Twice the number of rooms on the first floor = $2x$

12 less than the number of rooms on the first floor

$$= 2x - 12$$

$$\frac{1}{4}x + \frac{2}{7}x = 135$$

| | |
|---|------|
| 2 | 4, 7 |
| 2 | 2, 7 |
| | 1, 7 |

L.C.M of 4 and 7 is 28

$$(7+8)x / 28 = 135$$

$$15x = 135 \times 28$$

$$x = 135 \times 28 / 15$$

$$x = 9 \times 28 = 252$$

32 Ans $(x+12) \times 5 = 95$

$$= 5x + 60 = 95$$

$$= 5x = 95 - 60 = 35$$

$$= x = \frac{35}{5} = 7$$

The original number = 7

33. Ans $\frac{x+26}{3} = 18 = x+26 = 18 \times 3$

$$= x + 26 = 54 = x = 54 - 26 = 28$$

34. Ans Let the age of son = x years

Age of his father = $x + 27$

According to sum

$$x + x + 27 = 47$$

$$2x + 27 = 47$$

$$2x = 47 - 27$$

$$2x = 20$$

$$x = \frac{20}{2} = 10$$

Age of son = 10 years

And age of his father = $10 + 27 = 37$ years.

Q35(i) $\{2, 4, 6, 8, \dots, 800\}$

Ans Finite

(ii) $\{\dots, -5, -4, -3, -2\}$

Ans Infinite

(iii) $\{x : x \text{ is an integer between } -60 \text{ and } 60\}$

Ans Finite

(iv) $\{\text{No. of electrical appliances working in your house}\}$

Ans Finite

(v) $\{x : x \text{ is a whole number greater than } 20\}$

Ans infinite

Q36(i) $\{\dots, -8, -4, 0, 4, 8\}$ is a finite set.

Ans False

(ii) $\{-32, -28, -24, -20, \dots, 0, 4, 8, 16\}$ is an infinite

set. False

(iii) $\{x : x \text{ is a natural number less than } 1\}$ is the empty set.

Ans True

(iv) $\{ \text{whole numbers between } 15 \text{ and } 16 \} = \{ \text{Natural numbers between } 5 \text{ and } 6 \}$

Ans True

(v) $\{ \text{odd numbers divisible by } 2 \}$ is the empty set.

Ans True

37 (i) Ans Disjoint sets; at night can

(ii) overlapping sets

(iii) overlapping sets

(iv) overlapping sets

(v) overlapping sets

38 (i) $A = \{0, 1, 2, 4\}$

Ans Here the cardinal number $(A) = 4$

$$(ii) B = \{-3, -1, 1, 3, 5, 7\}$$

Ans 6

$$(iii) C = \{\}$$

Ans 0

$$(iv) D = \{3, 2, 2, 1, 3, 1, 2\}$$

Ans 7

$$(v) E = \{\text{natural numbers between 15 and 20}\}$$

Ans E = 4

B) Ans 2

(40) Ans 1