CHAPTER-2

Whole Numbers

2 MARKS QUESTIONS

1. Write the next three natural numbers after 10999.

Solutions:

The next three natural numbers after 10999 are 11000, 11001 and 11002.

2. Which is the smallest whole number?

Solutions:

The smallest whole number is 0.

3. **Which of the following will not represent zero?**

(a) 1 + 0

(b) 0 × 0

(c) 0 / 2

(d) (10 – 10) / 2

Solutions:

(a) 1 + 0 = 1

Hence, it does not represent zero.

(b) 0 × 0 = 0

Hence, it represents zero.

(c) 0 / 2 = 0

Hence, it represents zero.

(d) (10 – 10) / 2 = 0 / 2 = 0

Hence, it represents zero.

4. If the product of two whole numbers is zero, can we say that one or both of them will be zero? Justify through examples.

Solutions:

If the product of two whole numbers is zero, definitely one of them is zero

Example: 0 × 3 = 0 and 15 × 0 = 0

If the product of two whole numbers is zero, both of them may be zero

5. If the product of two whole numbers is 1, can we say that one or both of them will be 1? Justify through examples.

Solutions:

If the product of two whole numbers is 1, both numbers should be equal to 1

Example: 1 × 1 = 1

But 1 × 5 = 5

Hence, it's clear that the product of two whole numbers will be 1, only in situations when both numbers to be multiplied are 1.

6. Write the three whole numbers occurring just before 10001.

Solutions:

The three whole numbers occurring just before 10001 are 10000, 9999 and 9998.

7. How many whole numbers are there between 32 and 53?

Solutions:

The whole numbers between 32 and 53 are as follows:

(33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52)

Hence, there are 20 whole numbers between 32 and 53

4 MARKS QUESTIONS

1. **Write the successor of:**

(a) 2440701 (b) 100199 (c) 1099999 (d) 2345670

Solutions:

The successors are

(a) 2440701 + 1 = 2440702

(b) 100199 + 1 = 100200

(c) 1099999 + 1 = 1100000

(d) 2345670 + 1 = 2345671

2. **Write the predecessor of:**

(a) 94 (b) 10000 (c) 208090 (d) 7654321

Solutions:

The predecessors are

(a) 94 – 1 = 93

(b) 10000 – 1 = 9999

(c) 208090 – 1 = 208089

(d) 7654321 – 1 = 7654320

3 .Find the sum by suitable rearrangement:

(a) 837 + 208 + 363

(b) 1962 + 453 + 1538 + 647

Solutions:

(a) Given 837 + 208 + 363

= (837 + 363) + 208

= 1200 + 208

= 1408

(b) Given 1962 + 453 + 1538 + 647

= (1962 + 1538) + (453 + 647)

= 3500 + 1100

= 4600

4. **A taxi driver filled his car petrol tank with 40 litres of petrol on Monday. The next day, he filled the tank with 50 litres of petrol. If the petrol costs ₹ 44 per litre, how much did he spend in all on petrol?**

Solutions:

Petrol quantity filled on Monday = 40 litres

Petrol quantity filled on Tuesday = 50 litres

Total petrol quantity filled = (40 + 50) litre

Cost of petrol per litre = ₹ 44

Total money spent = 44 × (40 + 50)

= 44 × 90

= ₹ 3960

5. **Match the following:**

(i) 425 × 136 = 425 × (6 + 30 + 100) (a) Commutativity under multiplication.

(ii) 2 × 49 × 50 = 2 × 50 × 49 (b) Commutativity under addition.

(iii) 80 + 2005 + 20 = 80 + 20 + 2005 (c) Distributivity of multiplication over addition.

Solutions:

(i) 425 × 136 = 425 × (6 + 30 + 100) (c) Distributivity of multiplication over addition**.**

Hence (c) is the correct answer

(ii) 2 × 49 × 50 = 2 × 50 × 49 (a) Commutativity under multiplication

Hence, (a) is the correct answer

(iii) 80 + 2005 + 20 = 80 + 20 + 2005 (b) Commutativity under addition

Hence, (b) is the correct answer

6. **A vendor supplies 32 litres of milk to a hotel in the morning and 68 litres of milk in the evening. If the milk costs ₹ 45 per litre, how much money is due to the vendor per day?**

Solutions:

Milk quantity supplied in the morning = 32 litres

Milk quantity supplied in the evening = 68 litres

Cost of milk per litre = ₹ 45

Total cost of milk per day = 45 × (32 + 68)

= 45 × 100

= ₹ 4500

Hence, the money due to the vendor per day is ₹ 4500

7 MARKS QUESTIONS

1. **Find using distributive property:**

(a) 728 × 101

(b) 5437 × 1001

(c) 824 × 25

(d) 4275 × 125

(e) 504 × 35

Solutions:

(a) Given 728 × 101

= 728 × (100 + 1)

= 728 × 100 + 728 × 1

= 72800 + 728

= 73528

(b) Given 5437 × 1001

= 5437 × (1000 + 1)

= 5437 × 1000 + 5437 × 1

= 5437000 + 5437

= 5442437

(c) Given 824 × 25

= (800 + 24) × 25

= (800 + 25 – 1) × 25

= 800 × 25 + 25 × 25 – 1 × 25

= 20000 + 625 – 25

= 20000 + 600

= 20600

(d) Given 4275 × 125

= (4000 + 200 + 100 – 25) × 125

= (4000 × 125 + 200 × 125 + 100 × 125 – 25 × 125)

= 500000 + 25000 + 12500 – 3125

= 534375

(e) Given 504 × 35

= (500 + 4) × 35

= 500 × 35 + 4 × 35

= 17500 + 140

= 17640

2. Find the product using suitable properties.

(a) 738 × 103

(b) 854 × 102

(c) 258 × 1008

(d) 1005 × 168

Solutions:

(a) Given 738 × 103

= 738 × (100 + 3)

= 738 × 100 + 738 × 3 (using distributive property)

= 73800 + 2214

= 76014

(b) Given 854 × 102

= 854 × (100 + 2)

= 854 × 100 + 854 × 2 (using distributive property)

= 85400 + 1708

= 87108

(c) Given 258 × 1008

= 258 × (1000 + 8)

= 258 × 1000 + 258 × 8 (using distributive property)

= 258000 + 2064

= 260064

(d) Given 1005 × 168

= (1000 + 5) × 168

= 1000 × 168 + 5 × 168 (using distributive property)

= 168000 + 840

= 168840

3. In each of the following pairs of numbers, state which whole number is on the left of the other number on the number line. Also, write them with the appropriate sign (>, <) between them.

(a) 530, 503 (b) 370, 307 (c) 98765, 56789 (d) 9830415, 10023001

Solutions:

(a) 530 > 503

Hence, 503 is on the left side of 530 on the number line.

(b) 370 > 307

Hence, 307 is on the left side of 370 on the number line.

(c) 98765 > 56789

Hence, 56789 is on the left side of 98765 on the number line.

(d) 9830415 < 10023001

Hence, 9830415 is on the left side of 10023001 on the number line

4. Which of the following statements are true (T) and which are false (F)?

(a) Zero is the smallest natural number.

Solution:

False

0 is not a natural number.

(b) 400 is the predecessor of 399.

Solution:

False

The predecessor of 399 is 398 because (399 – 1 = 398)

(c) Zero is the smallest whole number.

Solution:

True

Zero is the smallest whole number.

(d) 600 is the successor of 599.

Solution:

True

Since (599 + 1 = 600)

(e) All natural numbers are whole numbers.

Solution:

True

All natural numbers are whole numbers.

(f) All whole numbers are natural numbers.

Solution:

False

0 is a whole number but is not a natural number.

(g) The predecessor of a two-digit number is never a single-digit number.

Solution:

False

For example, the predecessor of 10 is 9.

(h) 1 is the smallest whole number.

Solution:

False

0 is the smallest whole number.

(i) The natural number 1 has no predecessor.

True

The predecessor of 1 is 0, but it is not a natural number.

(j) The whole number 1 has no predecessor.

Solution:

False

0 is the predecessor of 1 and is a whole number.

(k) The whole number 13 lies between 11 and 12.

Solution:

False

13 does not lie between 11 and 12.

(l) The whole number 0 has no predecessor.

Solution:

True

The predecessor of 0 is -1 and is not a whole number.