SECTION A: MULTIPLE CHOICE QUESTIONS

Instructions: In questions 1 to 38, out of the four options, only one is correct. Write the correct answer.

Question 1

The product of the place values of two 2's in 428721 is

(A) 4
(B) 40000
(C) 400000
(D) 40000000

Answer: (C) 400000

Solution: The number 428721 has two 2's:

- First 2 is in the tens place: 2 × 10 = 20
- Second 2 is in the ten thousands place: 2 × 10000 = 20000
- Product of place values = 20 × 20000 = 400000

Question 2

3 × 10000 + 7 × 1000 + 9 × 100 + 0 × 10 + 4 is the same as

(A) 3794
(B) 37940
(C) 37904
(D) 379409

Answer: (C) 37904

Solution:

- 3 × 10000 = 30000
- 7 × 1000 = 7000
- 9 × 100 = 900
- 0 × 10 = 0
- 4 = 4
- **Total:** 30000 + 7000 + 900 + 0 + 4 = **37904**

Question 3

If 1 is added to the greatest 7-digit number, it will be equal to

(A) 10 thousand
(B) 1 lakh
(C) 10 lakh
(D) 1 crore

Answer: (D) 1 crore

Solution:

- Greatest 7-digit number = 99,99,999
- Adding 1: 99,99,999 + 1 = 1,00,00,000 = **1 crore**

Question 4

The expanded form of the number 9578 is

(A) 9 × 10000 + 5 × 1000 + 7 × 10 + 8 × 1
(B) 9 × 1000 + 5 × 100 + 7 × 10 + 8 × 1
(C) 9 × 1000 + 57 × 10 + 8 × 1
(D) 9 × 100 + 5 × 100 + 7 × 10 + 8 × 1

Answer: (B) 9 × 1000 + 5 × 100 + 7 × 10 + 8 × 1

Solution: For the number 9578:

- 9 is in thousands place: 9 × 1000
- 5 is in hundreds place: 5 × 100
- 7 is in tens place: 7 × 10
- 8 is in ones place: 8 × 1

Question 5

When rounded off to nearest thousands, the number 85642 is

(A) 85600
(B) 85700
(C) 85000
(D) 86000

Answer: (D) 86000

Solution: The hundreds digit is 6, which is ≥ 5, so we round up: 85642 → **86000**

Question 6

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

Answer: (D) 9965

Solution: To form the largest number, use the largest digit (9) twice in the highest places: **9965**

Question 7

In Indian System of Numeration, the number 58695376 is written as

(A) 58,69,53,76
(B) 58,695,376
(C) 5,86,95,376
(D) 586,95,376

Answer: (C) 5,86,95,376

Solution: In Indian system: 5 crore, 86 lakh, 95 thousand, 376 = **5,86,95,376**

Question 8

One million is equal to

(A) 1 lakh
(B) 10 lakh
(C) 1 crore
(D) 10 crore

Answer: (B) 10 lakh

Solution: 1 million = 1,000,000 = 10,00,000 = **10 lakh**

Question 9

The greatest number which on rounding off to nearest thousands gives 5000, is

(A) 5001
(B) 5559

(C) 5999
(D) 5499
Answer: (D) 5499
Solution: Numbers from 4500 to 5499 round to 5000. The greatest is **5499**.

Question 10
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
Answer: (C) 6034579
Solution: Keeping 6 in first position, arrange remaining digits (0,3,4,5,7,9) in ascending order: **6034579**

Question 11
Which of the following numbers in Roman numerals is incorrect?
(A) LXXX
(B) LXX
(C) LX
(D) LLX
Answer: (D) LLX
Solution: In Roman numerals, the symbol L (50) can never be repeated. Therefore **LLX is incorrect**.

Question 12
The largest 5-digit number having three different digits is
(A) 98978
(B) 99897
(C) 99987
(D) 98799
Answer: (C) 99987
Solution: Using digits 9, 8, and 7, to make the largest 5-digit number: **99987**

Question 13
The smallest 4-digit number having three different digits is
(A) 1102
(B) 1012
(C) 1020
(D) 1002
Answer: (D) 1002
Solution: Using digits 0, 1, and 2, to make the smallest 4-digit number: **1002**

Question 14
Number of whole numbers between 38 and 68 is

(A) 31
(B) 30
(C) 29
(D) 28
Answer: (C) 29
Solution: Whole numbers between 38 and 68: 39, 40, 41, ..., 67 = **29 numbers**

Question 15
The product of successor and predecessor of 999 is
(A) 999000
(B) 998000
(C) 989000
(D) 1998
Answer: (B) 998000
Solution:

- Successor of 999 = 999 + 1 = 1000
- Predecessor of 999 = 999 - 1 = 998
- Product = 1000 × 998 = **998000**

Question 16
The product of a non-zero whole number and its successor is always
(A) an even number
(B) an odd number
(C) a prime number
(D) divisible by 3
Answer: (A) an even number
Solution: One of any two consecutive numbers is always even, so their product is always even. Examples: 4 × 5 = 20, 7 × 8 = 56

Question 17
A whole number is added to 25 and the same number is subtracted from 25. The sum of the resulting numbers is
(A) 0
(B) 25
(C) 50
(D) 75
Answer: (C) 50
Solution: Let the number be x.

- First result: 25 + x
- Second result: 25 - x
- Sum: (25 + x) + (25 - x) = 25 + x + 25 - x = **50**

Question 18
Which of the following is not true?
(A) (7 + 8) + 9 = 7 + (8 + 9)
(B) (7 × 8) × 9 = 7 × (8 × 9)

(C) 7 + 8 × 9 = (7 + 8) × (7 + 9)
(D) 7 × (8 + 9) = (7 × 8) + (7 × 9)
Answer: (C) 7 + 8 × 9 = (7 + 8) × (7 + 9)
Solution:

- Left side: 7 + 8 × 9 = 7 + 72 = 79
- Right side: (7 + 8) × (7 + 9) = 15 × 16 = 240
- Since 79 ≠ 240, option (C) is **not true**.

Question 19
By using dot (.) patterns, which of the following numbers can be arranged in all the three ways namely a line, a triangle and a rectangle?
(A) 9
(B) 10
(C) 11
(D) 12
Answer: (B) 10
Solution: 10 dots can be arranged as:

- Line: 10 dots in a row
- Triangle: 1+2+3+4 = 10 dots
- Rectangle: 2×5 or 5×2 rectangle

Question 20
Which of the following statements is not true?
(A) Both addition and multiplication are associative for whole numbers
(B) Zero is the identity for multiplication of whole numbers
(C) Addition and multiplication both are commutative for whole numbers
(D) Multiplication is distributive over addition for whole numbers
Answer: (B) Zero is the identity for multiplication of whole numbers
Solution: 1 (not 0) is the identity for multiplication. Example: 5 × 1 = 5, but 5 × 0 = 0 ≠ 5

Question 21
Which of the following statements is not true?
(A) 0 + 0 = 0
(B) 0 - 0 = 0
(C) 0 × 0 = 0
(D) 0 ÷ 0 = 0
Answer: (D) 0 ÷ 0 = 0
Solution: Division by zero is **undefined**. 0 ÷ 0 is not equal to 0.

Question 22
The predecessor of 1 lakh is
(A) 99000
(B) 99999
(C) 999999
(D) 100001
Answer: (B) 99999

Solution: 1 lakh = 1,00,000 Predecessor = 1,00,000 - 1 = **99,999**

Question 23
The successor of 1 million is
(A) 2 millions
(B) 1000001
(C) 100001
(D) 10001
Answer: (B) 1000001
Solution: 1 million = 10,00,000 Successor = 10,00,000 + 1 = **10,00,001**

Question 24
Number of even numbers between 58 and 80 is
(A) 10
(B) 11
(C) 12
(D) 13
Answer: (A) 10
Solution: Even numbers between 58 and 80: 60, 62, 64, 66, 68, 70, 72, 74, 76, 78 = **10 numbers**

Question 25
Sum of the number of primes between 16 to 80 and 90 to 100 is
(A) 20
(B) 18
(C) 17
(D) 16
Answer: (C) 17
Solution:

- Primes between 16 to 80: 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79 = **16 primes**
- Primes between 90 to 100: 97 = **1 prime**
- Total = 16 + 1 = **17**

Question 26
Which of the following statements is not true?
(A) The HCF of two distinct prime numbers is 1
(B) The HCF of two co-prime numbers is 1
(C) The HCF of two consecutive even numbers is 2
(D) The HCF of an even and an odd number is even
Answer: (D) The HCF of an even and an odd number is even
Solution: The HCF of an even and an odd number is always **odd** (usually 1).

Question 27
The number of distinct prime factors of the largest 4-digit number is

(A) 2
(B) 3
(C) 5
(D) 11
Answer: (B) 3
Solution: Largest 4-digit number = 9999 Prime factorization: $9999 = 3^2 \times 11 \times 101$ Distinct prime factors: 3, 11, 101 = **3 factors**

Question 28
The number of distinct prime factors of the smallest 5-digit number is
(A) 2
(B) 4
(C) 6
(D) 8
Answer: (A) 2
Solution: Smallest 5-digit number = 10000 Prime factorization: $10000 = 2^4 \times 5^4$ Distinct prime factors: 2, 5 = **2 factors**

Question 29
If the number 7254*98 is divisible by 22, the digit at * is
(A) 1
(B) 2
(C) 6
(D) 0
Answer: (C) 6
Solution: For divisibility by 11 (since 22 = 2 × 11): Alternating sum = 7 - 2 + 5 - 4 + * - 9 + 8 = (5 + *) For divisibility by 11: (5 + *) must be divisible by 11 So: 5 + * = 11, therefore * = **6**

Question 30
The largest number which always divides the sum of any pair of consecutive odd numbers is
(A) 2
(B) 4
(C) 6
(D) 8
Answer: (B) 4
Solution: Examples: 1 + 3 = 4, 3 + 5 = 8, 5 + 7 = 12 All sums are divisible by **4**.

Question 31
A number is divisible by 5 and 6. It may not be divisible by
(A) 10
(B) 15
(C) 30
(D) 60
Answer: (D) 60

Solution: LCM of 5 and 6 = 30 A number divisible by both 5 and 6 must be divisible by 30, and hence by 10 and 15. But it may not be divisible by **60**.

Question 32
The sum of the prime factors of 1729 is
(A) 13
(B) 19
(C) 32
(D) 39
Answer: (D) 39
Solution: Prime factorization: 1729 = 7 × 13 × 19 Sum of prime factors = 7 + 13 + 19 = **39**

Question 33
The greatest number which always divides the product of the predecessor and successor of an odd natural number other than 1, is
(A) 6
(B) 4
(C) 16
(D) 8
Answer: (B) 4
Solution: For odd number n:

- Predecessor = n - 1 (even)
- Successor = n + 1 (even)
- Product of two consecutive even numbers is always divisible by **4**.

Question 34
The number of common prime factors of 75, 60, 105 is
(A) 2
(B) 3
(C) 4
(D) 5
Answer: (A) 2
Solution:

- $75 = 3 \times 5^2$
- $60 = 2^2 \times 3 \times 5$
- 105 = 3 × 5 × 7 Common prime factors: 3 and 5 = **2 factors**

Question 35
Which of the following pairs is not coprime?
(A) 8, 10
(B) 11, 12
(C) 1, 3
(D) 31, 33
Answer: (A) 8, 10
Solution: HCF(8, 10) = 2 ≠ 1, so they are **not coprime**.

Question 36
Which of the following numbers is divisible by 11?
(A) 1011011
(B) 1111111
(C) 22222222
(D) 3333333
Answer: (C) 22222222
Solution: Divisibility test for 11: alternating sum of digits For 22222222: 2 - 2 + 2 - 2 + 2 - 2 + 2 - 2 = 0 Since result is 0, the number is **divisible by 11**.

Question 37
LCM of 10, 15 and 20 is
(A) 30
(B) 60
(C) 90
(D) 180
Answer: (B) 60
Solution:

- $10 = 2 \times 5$
- $15 = 3 \times 5$
- $20 = 2^2 \times 5$ LCM = $2^2 \times 3 \times 5 =$ **60**

Question 38
LCM of two numbers is 180. Then which of the following is not the HCF of the numbers?
(A) 45
(B) 60
(C) 75
(D) 90
Answer: (C) 75
Solution: HCF must divide LCM. Since 180 ÷ 75 = 2.4 (not a whole number), **75 cannot be the HCF**.

SECTION B: TRUE/FALSE QUESTIONS (39-98)

Instructions: State whether the given statements are True (T) or False (F).

Question 39
In Roman numeration, a symbol is not repeated more than three times.
Answer: True
Explanation: This is a fundamental rule of Roman numerals.

Question 40
In Roman numeration, if a symbol is repeated, its value is multiplied as many times as it occurs.
Answer: False
Explanation: If a symbol is repeated, its value is **added** (not multiplied). Example: II = 1 + 1 = 2, XX = 10 + 10 = 20.

Question 41
5555 = 5 × 1000 + 5 × 100 + 5 × 10 + 5 × 1
Answer: True
Explanation: 5000 + 500 + 50 + 5 = 5555 ✓

Question 42
39746 = 3 × 10000 + 9 × 1000 + 7 × 100 + 4 × 10 + 6
Answer: True
Explanation: 30000 + 9000 + 700 + 40 + 6 = 39746 ✓

Question 43
82546 = 8 × 1000 + 2 × 1000 + 5 × 100 + 4 × 10 + 6
Answer: False
Explanation: 8000 + 2000 + 500 + 40 + 6 = 10546 ≠ 82546

Question 44
532235 = 5 × 100000 + 3 × 10000 + 2 × 1000 + 2 × 100 + 3 × 10 + 5
Answer: True
Explanation: 500000 + 30000 + 2000 + 200 + 30 + 5 = 532235 ✓

Question 45
XXIX = 31
Answer: False
Explanation: XXIX = XX + IX = 20 + 9 = 29, not 31

Question 46
LXXIV = 74
Answer: True
Explanation: L + XX + IV = 50 + 20 + 4 = 74 ✓

Question 47
The number LIV is greater than LVI.
Answer: False
Explanation: LIV = 54, LVI = 56. Therefore LIV < LVI

Question 48
The numbers 4578, 4587, 5478, 5487 are in descending order.
Answer: False
Explanation: Correct descending order: 5487, 5478, 4587, 4578

Question 49
The number 85764 rounded off to nearest hundreds is written as 85700.
Answer: False
Explanation: 85764 rounds to 85800, not 85700

Question 50
Estimated sum of 7826 and 12469 rounded off to hundreds is 20,000.
Answer: True
Explanation: 7826 ≈ 7800, 12469 ≈ 12500; Sum = 20300 ≈ 20000

Question 51
The largest six digit telephone number that can be formed by using digits 5, 3, 4, 7, 0, 8 only once is 875403.
Answer: False
Explanation: The largest number would be 875430, not 875403.

Question 52
The number 81652318 will be read as eighty one crore six lakh fifty two thousand three hundred eighteen.
Answer: False
Explanation: It should be read as eight crore sixteen lakh fifty two thousand three hundred and eighteen.

Question 53
The largest 4-digit number formed by the digits 6, 7, 0, 9 using each digit only once is 9760.
Answer: True
Explanation: Arranging in descending order: 9760 ✓

Question 54
Among kilo, milli and centi, the smallest is centi.
Answer: False
Explanation: Among kilo, milli and centi, the smallest is milli.

Question 55
Successor of a one-digit number is always a one-digit number.
Answer: False
Explanation: Successor of 9 is 10 (two digits).

Question 56
Successor of a 3-digit number is always a 3-digit number.
Answer: False
Explanation: Successor of 999 is 1000 (four digits).

Question 57
Predecessor of a two-digit number is always a two-digit number.
Answer: False
Explanation: Predecessor of 10 is 9 (one digit).

Question 58

Every whole number has its successor.
Answer: True
Explanation: For any whole number n, n+1 is its successor.

Question 59
Every whole number has its predecessor.
Answer: False
Explanation: 0 has no predecessor in whole numbers (as -1 is not a whole number).

Question 60
Between any two natural numbers, there is one natural number.
Answer: False
Explanation: Between 4 and 8 are 5, 6, 7 (three numbers).

Question 61
The smallest 4-digit number is the successor of the largest 3-digit number.
Answer: True
Explanation: Largest 3-digit = 999, successor = 1000 (smallest 4-digit) ✓

Question 62
Of the given two natural numbers, the one having more digits is greater.
Answer: True
Explanation: This is a fundamental property of place value system.

Question 63
Natural numbers are closed under addition.
Answer: True
Explanation: Sum of two natural numbers is always a natural number.

Question 64
Natural numbers are not closed under multiplication.
Answer: False
Explanation: Natural numbers ARE closed under multiplication.

Question 65
Natural numbers are closed under subtraction.
Answer: False
Explanation: 3 - 5 = -2 (not a natural number).

Question 66
Addition is commutative for natural numbers.
Answer: True
Explanation: a + b = b + a for all natural numbers a and b.

Question 67

1 is the identity for addition of whole numbers.
Answer: False
Explanation: 0 is the identity for addition. Example: 8 + 0 = 8.

Question 68
1 is the identity for multiplication of whole numbers.
Answer: True
Explanation: n × 1 = n for all whole numbers n.

Question 69
There is a whole number which when added to a whole number, gives the number itself.
Answer: True
Explanation: Zero has this property: n + 0 = n.

Question 70
There is a natural number which when added to a natural number, gives the number itself.
Answer: False
Explanation: 0 is not a natural number.

Question 71
If a whole number is divided by another whole number, which is greater than the first one, the quotient is not equal to zero.
Answer: True
Explanation: This follows from division rules for whole numbers.

Question 72
Any non-zero whole number divided by itself gives the quotient 1.
Answer: True
Explanation: n ÷ n = 1 for any non-zero whole number n.

Question 73
The product of two whole numbers need not be a whole number.
Answer: False
Explanation: Whole numbers are closed under multiplication.

Question 74
A whole number divided by another whole number greater than 1 never gives the quotient equal to the former.
Answer: True
Explanation: If a ÷ b = a where b > 1, then b = 1, which contradicts b > 1.

Question 75
Every multiple of a number is greater than or equal to the number.
Answer: True
Explanation: Multiples are n×1, n×2, n×3, ... which are all ≥ n.

Question 76
The number of multiples of a given number is finite.
Answer: False
Explanation: There are infinitely many multiples of any number.

Question 77
Every number is a multiple of itself.
Answer: True
Explanation: n = n × 1, so n is a multiple of itself.

Question 78
Sum of two consecutive odd numbers is always divisible by 4.
Answer: True
Explanation: (2n+1) + (2n+3) = 4n+4 = 4(n+1), which is divisible by 4.

Question 79
If a number divides three numbers exactly, it must divide their sum exactly.
Answer: True
Explanation: If d divides a, b, and c, then d divides (a+b+c).

Question 80
If a number exactly divides the sum of three numbers, it must exactly divide the numbers separately.
Answer: False
Explanation: 3 divides (1+2+3)=6, but 3 doesn't divide 1 or 2.

Question 81
If a number is divisible both by 2 and 3, then it is divisible by 12.
Answer: False
Explanation: 6 is divisible by 2 and 3 but not by 12.

Question 82
A number with three or more digits is divisible by 6, if the number formed by its last two digits is divisible by 6.
Answer: False
Explanation: For divisibility by 6, a number must be divisible by both 2 and 3.

Question 83
A number with 4 or more digits is divisible by 8, if the number formed by the last three digits is divisible by 8.
Answer: True
Explanation: This is the divisibility rule for 8.
Question 84
If the sum of the digits of a number is divisible by 3, then the number itself is divisible by 9.

Answer: False
Explanation: For divisibility by 9, the sum of digits must be divisible by 9, not just 3.

Question 85
All numbers which are divisible by 4 may not be divisible by 8.
Answer: True
Explanation: 20 is divisible by 4 but not by 8.

Question 86
The Highest Common Factor of two or more numbers is greater than their Lowest Common Multiple.
Answer: False
Explanation: HCF ≤ LCM always.

Question 87
LCM of two or more numbers is divisible by their HCF.
Answer: True
Explanation: This is a fundamental property of HCF and LCM.

Question 88
LCM of two numbers is 28 and their HCF is 8.
Answer: False
Explanation: HCF must divide LCM. Since 28 ÷ 8 = 3.5 (not whole), this is impossible.
Question 89
LCM of two or more numbers may be one of the numbers.
Answer: True
Explanation: LCM of 2 and 4 is 4.

Question 90
HCF of two or more numbers may be one of the numbers.
Answer: True
Explanation: HCF of 6 and 12 is 6.

Question 91
Every whole number is the successor of another whole number.
Answer: False
Explanation: 0 is not the successor of any whole number.

Question 92
Sum of two whole numbers is always less than their product.
Answer: False
Explanation: 2 + 3 = 5, but 2 × 3 = 6. Counter-example: 1 + 1 = 2, but 1 × 1 = 1.

Question 93
If the sum of two distinct whole numbers is odd, then their difference also must be odd.
Answer: True

Explanation: If sum is odd, one number is even and one is odd, so difference is odd.

Question 94
Any two consecutive numbers are coprime.
Answer: True
Explanation: HCF of consecutive numbers is always 1.

Question 95
If the HCF of two numbers is one of the numbers, then their LCM is the other number.
Answer: True
Explanation: If HCF(a,b) = a, then LCM(a,b) = b.
Question 96
The HCF of two numbers is smaller than the smaller of the numbers.
Answer: False
Explanation: HCF can be equal to the smaller number.

Question 97
The LCM of two numbers is greater than the larger of the numbers.
Answer: False
Explanation: LCM can be equal to the larger number.
Question 98
The LCM of two coprime numbers is equal to the product of the numbers.
Answer: True
Explanation: If HCF(a,b) = 1, then LCM(a,b) = a × b.

SECTION C: FILL IN THE BLANKS (99-151)

Instructions: Fill in the blanks to make the statements true.
Question 99
(a) 10 million = _____ crore.
Answer: 1 crore
Explanation: 10 million = 1,00,00,000 = 1 crore
(b) 10 lakh = _____ million.
Answer: 1 million
Explanation: 10 lakh = 10,00,000 = 1 million

Question 100
(a) 1 metre = _____ millimetres.
Answer: 1000 millimetres
Explanation: 1 metre = 100 cm = 100 × 10 mm = 1000 mm
(b) 1 centimetre = _____ millimetres.
Answer: 10 millimetres
(c) 1 kilometre = _____ millimetres.
Answer: 10,00,000 millimetres
Explanation: 1 km = 1000 m = 1000 × 1000 mm = 10,00,000 mm