

QUESTIONS

1. Which is the smallest digit?
(a) 1 (b) -1 (c) 0 (d) 10
2. Which is the smallest number of one digit.
(a) 9 (b) 2 (c) 1 (d) 10
3. The difference between the place value and the face value of 8 in 658742 is
(a) 0 (b) 7992 (c) 6800 (d) 5930
4. How many times does the digit 9 occur between 1 to 100?
(a) 11 (b) 15 (c) 18 (d) 20
5. One billion equals
(a) 1 Crore (b) 10 Crore (c) 100 Crore (d) 1000 Crore
6. How many lakhs are there in one million?
(a) 100 (b) 10 (c) 1000 (d) None of these
7. The additive inverse of 17 is
(a) 17 (b) -17 (c) $\frac{1}{17}$ (d) $-\frac{1}{17}$
8. Evaluate: $7 \times |-15| - |-9| \times 8$
(a) 22 (b) 33 (c) 11 (d) -120
9. The integer 8 more than -12 is
(a) 4 (b) -4 (c) -20 (d) 20
10. Which of the following pairs of integer does represent 5 as a difference?
(a) 10, 5 (b) -10, -5 (c) 5, -20 (d) both (a) & (b)
11. Which of the following is not meaningful?
(a) XIV (b) XXXV (c) XXV (d) VX
12. The smallest number when rounded off to the nearest hundred as 600, is
(a) 550 (b) 595 (c) 604 (d) 599
13. Expanded form of $M + DC + LXX + IX = ?$
(a) 1015 (b) 1679 (c) 1999 (d) 2000
14. Express CDXLVI in Hindu-Arabic numerical.
(a) 446 (b) 228 (c) 165 (d) 500
15. The largest three digit number formed by the digits 8, 5, 9, is
(a) 985 (b) 859 (c) 958 (d) 589
16. The total number of 4 digit numbers is
(a) 8999 (b) 9000 (c) 8000 (d) 9999
17. $244 + (8 \times 4) - 300 \div 6 = ?$
(a) 226 (b) 220 (c) 223 (d) 224

- 18.** In the international place value-system, we write one million for
 (a) 1 lakh (b) 10 lakh (c) 100 lakh (d) 1 Crore
- 19.** $(-16) + 14 - (-13)$ is equal to
 (a) -11 (b) 12 (c) 11 (d) -15
- 20.** If the sum of two integers is -22 and one of them is 14, then the other integer is
 (a) -12 (b) 12 (c) -36 (d) 40
- 21.** Find the estimated quotient $2828 \div 125$ by rounding off the numerator and denominator to the nearest hundreds.
 (a) 28 (b) 20 (c) 24 (d) 26
- 22.** What is the smallest 3-digit number with unique digits?
 (a) 102 (b) 103 (c) 101 (d) 104
- 23.** The sum of my digit is 12. When rounded off to the nearest hundred, I am 500. Rounding off to the nearest 10 makes me 530. What am I?
 (a) 543 (b) 534 (c) 831 (d) 426
- 24.** There are 785 students on roll in a Global Pratibha School. If the annual fee per student is Rs. 62,606. What is the total fee collected annually by the School?
 (a) Rs. 4,00,000 (b) Rs. 49,145,710 (c) Rs. 7,96,42,000 (d) Rs. 4,66,72,000
- 25.** Which is the smallest 7 - digit number having four different digits?
 (a) 1000023 (b) 1000027 (c) 1000026 (d) 700426
- 26.** Find $1 - 2 + 3 - 4 + 5 - 6 + \dots + 17 - 18 + 19 - 20 = ?$
 (a) 10 (b) -10 (c) 100 (d) 200
- 27.** If $x = (-23) + 22 + (-23) + 22 + \dots$ (up to 40 terms) $y = 12 + (-11) + 12 + (-11) + \dots$ (up to 20 terms), then find $y - x = ?$
 (a) 30 (b) -30 (c) 40 (d) -40
- 28.** The number 170916AB (A, B, are digits) is divisible by 66. Then the value of A can be
 (a) 9 (b) 3 (c) 7 (d) 5
- 29.** Rohit started a game of monopoly with Rs. 70. He had to pay Rs. 25 as tax and he received Rs. 10 as rent of one of his sites. He won Rs. 20 by way of lottery and was then fined Rs. 50 for overspending. How much money was left with him at the end of the game?
 (a) 25 (b) 30 (c) 36 (d) 100
- 30.** If x and y are two integers such that x is the predecessor of y , the $x - y$ is equal to
 (a) 1 (b) 0 (c) 2 (d) -1
- 31.** What is the minimum number of four digits formed by using the digits 3, 4, 0, 8?
 (a) 3048 (b) 3348 (c) 3408 (d) 3480
- 32.** Find the unit's digit in $(261)^{43} + (426)^{73}$
 (a) 8 (b) 7 (c) 4 (d) 5

- 33.** How many zeros will be there at the end of $1000 \times 25 \times 8 \times 32 \times 125 \times 3$
 (a) 9 (b) 6 (c) 7 (d) 8
- 34.** Rohit had forgotten his 6 - digit bank account number but only remembered that it was of the form A515A0 and was divisible by 36. What is the value of A?
 (a) 4 (b) 7 (c) 8 (d) 9
- 35.** How many number between 1 and 250 can be represented for a^b , where $b > a > 1$?
 (a) 6 (b) 7 (c) 8 (d) 9
- 36.** I have 76 sweets and I want to distribute them equally among 23 students after each of the student got maximum integral sweets. How many sweets are left with me?
 (a) 1 (b) 8 (c) 6 (d) 5
- 37.** Which of the following numbers is the greatest number dividing a family of number $(N^3 - N)$, Where N is any natural number?
 (a) 0 (b) 2 (c) 7 (d) 6
- 38.** $N^2 = 123456789101110987654321$.
 Find N
 (a) 11111111111 (b) 10000001 (c) 12345111 (d) 12312111
- 39.** In Patna, all the numbers are expressed with the help of three alphabets x, y, and z.
 15 is written as xyz.
 6 is written as yz.
 60 is written as yzyz.
 How to many ways does write 17 in Patna?
 (a) xyy (b) yxy (c) yxx (d) yxx
- 40.** Let x, y and z be digits such that $(100x + 10y + z) (x + y + z) = 2005$. What is the value of x?
 (a) 4 (b) 2 (c) 3 (d) 6

ANSWER - KEY

1. C	2. C	3. B	4. D	5. C
6. B	7. B	8. B	9. B	10. A
11. C	12. A	13. B	14. A	15. A
16. B	17. A	18. B	19. C	20. C
21. A	22. A	23. B	24. B	25. A
26. B	27. A	28. A	29. A	30. D
31. A	32. B	33. A	34. C	35. B
36. A	37. D	38. A	39. A	40. A

SOLUTIONS

1. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
 $\therefore 0 = \text{Smallest}$
2. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
 $\therefore 1 = \text{Smallest number of one digit.}$
3. 658742
Place Value = $8 \times 1000 = 8000$
Face value = 8
Difference = $8000 - 8 = 7992$
4. 9, 19, 29, 39, 49, 59, 69, 79, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99
 $\therefore \text{Total no. of 9 occurs} = 20$
5. One billion = 1000 millions
= 100 Crores
6. One million = 1000 thousands = 10 lakhs
7. $17 + x = 0$
 $\therefore x = -17$
8. $7 \times |-15| - |-9| \times 8$ ($|-15| = 15$ and $|-9| = 9$)
 $\therefore 7 \times 15 - 9 \times 8 = 105 - 72 = 33$
9. Let no. be x
Then; $x = -12 + 8 = -4$
 $\therefore \text{No. is } -4$
10. $10 - 5 = 5$
11. XXV (it does not mean anything)
12. 550 (smallest no. rounded near hundreds is 600)
13. $M + DC + LXX + IX$
 $= 1000 + 600 + 70 + 9 = 1679$
14. $CDXLVI = 400 + 40 + 6 = 446$
15. 985
16. $(999 - 1000 + 1) = (8999 + 1) = 9000$
17. $244 + (8 \times 4) - 300 \div 6$
 $= 244 + 32 - 50 = 276 - 50 = 226$
18. One million = 1000 thousands = 10 lakhs
19. $(-16) + 14 - (-13)$
 $= (-16) + 14 + 13 = 27 - 16 = 11$

- 20.** Let the integer be x , then $14 + x = -22$
 $x = -22 - 14 = -36$
- 21.** $\frac{2828}{125} \Rightarrow \frac{2800}{100}$ (after rounding)
 $= 28$
- 22.** 100, 101, 102 (102 is unique digits because its all digit are different)
- 23.** The number is between 525 & 534 and its digit sum is 12
 $5 + 3 + 4 = 12$
 So, 534 is the number.
- 24.** Total fee = $785 \times 62606 = \text{Rs. } 49,145,710$
- 25.** 1000023 unique digits (4 only)
- 26.** $1 - 2 + 3 - 4 + 5 - 6 + \dots + 19 - 20$
 $(-1) + (-1) + (-1) + \dots + (-1) \rightarrow 10 \text{ times}$
 $= -10$
- 27.** $x = (-1) + (-1) + (-1) \dots (20 \text{ terms}) = -20$
 $y = 1 + 1 + 1 \dots (10 \text{ terms}) = 10$
 $y - x = 10 - (-20) = 10 + 20 = 30$
- 28.** $170916AB = -(1 + 0 + 1 + A) + (7 + 9 + 6 + B)$
 $= 22 + B - 2 - A = 20 + B - A = 11 \rightarrow A - B = 9$
 And $1 + 7 + 0 + 9 + 1 + 6 + A + B = 24 + A + B$
 $A = 9$ and $B = 0$
- 29.** Initially he had Rs. +70
 Paid as tax Rs. -25
 Received rent of site Rs. 10
 Won lottery money Rs. 20
 Fined for over speeding Rs. -50
 At the end of the game she was left with RS.
 $= [70 + (-25) + 10 + 20 + (-50)]$
 $= [(70 + 10 + 20) + \{(-25) + (-50)\}]$
 $= [100 + (-75)] = \text{Rs. } 25$
- 30.** $y - x = 1$
 $\therefore x - y = -1$
- 31.** Required Number = 3048
- 32.** Required units digit = Units digit in $(1)^{43} + (6)^{73}$
 Now $(1)^{43} = 1$ and $(6)^{73} = 6$

Hence Units digit in $(216)^{43} + (426)^{73}$ = unit digit

In $(1+6) = 7$

33. No of zero = $1000 \times 25 \times 8 \times 32 \times 125 \times 3 = 9$

34. Divisibility rule of 9 is that the sum of all digits should be divisible by 9. Therefore

$$\frac{A+5+1+5+A+O}{9} = \frac{11+2A}{9}$$

From here, A should be 8.

Therefore, the number is 851, 580, which is also divisible by 4.

35. For $a = 3$ there are five number present form 2^3 to 2^7 , for $x = 3$, there are two number present form 3^4 and 3^5 .

36. The question is asking about the remainder When we divide 7^6 by 2^3 . Remainder is 1.

37. Substitute the value of $N(1, 2, 3, \dots)$ find value of $N^3 - N$, which is always divisible by 6.

38. $(1111111111)^2 = 12345678910111098765432$

39. The key is the fact that in Patna, only three symbols are used to write numbers.

Therefore, $6 = (20)_3 = (yz)_3$, $y = 2, z = 0$ and $x = 1$, $17 = (122)_3 = xyy$

40. Clearly, the two quantities are both integers, and therefore, we check the prim factorization of $2005 = 5 \times 401$. It can be seen that $(x, y, z) = (4, 0, 1)$

Satisfies the relation. Hence, option (a) is the answer.