



Number System Questions For IBPS RRB Clerk

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Instructions

For the following questions answer them individually

Question 1

The product of two 2-digit numbers is 2160 and their H.C.F. is 12. The numbers are

- A (12, 60)
- B (72, 30)
- C (36, 60)
- D (60, 72)

Answer: C

Explanation:

Let the two numbers be $12x$ and $12y$ respectively where x and y are co-primes

Product of numbers = $(12x) \times (12y) = 2160$

$$\Rightarrow xy = \frac{2160}{144} = 15$$

Possible pairs of x and y whose H.C.F. is 1 = (3, 5)

\therefore Required numbers = $(12 \times 3), (12 \times 5)$

= 36, 60

\Rightarrow Ans - (C)

Question 2

How many two digit numbers are divisible by 9?

- A 9
- B 8
- C 10
- D 11

Answer: C

Explanation:

2 digits numbers which are divisible by 9 are : 18, 27, ..., 99

Clearly, these numbers form an A.P. with first term, $a = 18$, last term, $l = 99$ and common difference, $d = 9$

Let number of terms be n

$$\Rightarrow \text{Last term of an A.P.} = l = a + (n - 1)d$$

$$\Rightarrow 99 = 18 + (n - 1)9$$

$$\Rightarrow (n - 1)9 = 99 - 18 = 81$$

$$\Rightarrow (n - 1) = \frac{81}{9} = 9$$

$$\Rightarrow n = 9 + 1 = 10$$

Thus, there are 10 two digit numbers that are divisible by 9.

\Rightarrow Ans - (C)

Question 3

If 347P is divisible by 9, then what is the value of P?

- A 2
- B 3
- C 4
- D 7

Answer: C

Explanation:

If a number is divisible by 9, then the sum of its digits must also be divisible by 9.

Number : 347P

Sum of digits $= 3 + 4 + 7 + P = (14 + P)$

Now, for above value to be divisible by 9, it should be equal to 18 (next highest multiple of 9)

$$\Rightarrow 14 + P = 18$$

$$\Rightarrow P = 18 - 14 = 4$$

\Rightarrow Ans - (C)

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Question 4

Which smallest number must be subtracted from 400, so that the resulting number is completely divisible by 7?

- A 6
- B 1
- C 2
- D 4

Answer: B

Explanation:

On dividing 400 by 7, we get : $400 = 7 \times 57 + 1$

Thus, the smallest number which should be subtracted from 400 = 1

Also, $400 - 1 = 399$ is completely divisible by 7.

\Rightarrow Ans - (B)

Question 5

Which smallest number to be subtracted from 300, so that the resulting number is completely divisible by 9?

- A 5
- B 6
- C 3
- D 1

Answer: C

Explanation:

On dividing 300 by 9, we get : $300 = 9 \times 33 + 3$

Thus, the smallest number which should be subtracted from $300 = 3$

Also, $300 - 3 = 297$ is completely divisible by 9.

=> Ans - (C)

Question 6

A number when divided by 18 leaves remainder 15. What is the remainder when the same number is divided by 6?

A 3

B 2

C 1

D 4

Answer: A

Explanation:

The number when divided by 18 leaves remainder 15, => Number is of the form = $N = 18k + 15$, where k is a whole number.

Now, when N is divided by 6, we get : $\frac{18k+15}{6}$

$$= \left(\frac{18k}{6}\right) + \left(\frac{15}{6}\right)$$

$18k$ is completely divisible by 6, hence the second term will determine the remainder.

=> Remainder when 15 is divided by 6 is $15\%6 = 3$

=> Ans - (A)

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Question 7

If 123457Y is completely divisible by 8, then what will be the digit in place of Y?

A 4

B 5

C 8

D 6

Answer: D

Explanation:

Number : 123457Y

If a number is completely divisible by 8, then the last three digits of the number must also be divisible by 8.

=> $57Y$ must be divisible by 8 and the only three digit number starting with '57' which is divisible by 8 is = 576

=> $Y = 6$

=> Ans - (D)

Question 8

If a number is divided by 30 then it leaves 17 as a remainder. What will be the remainder when the same number is divided by 10?

- A 7
- B 3
- C 1
- D 2

Answer: A

Explanation:

The number when divided by 30 leaves remainder 17, \Rightarrow Number is of the form $N = 30k + 17$, where k is a whole number.

Now, when N is divided by 10, we get : $\frac{30k+17}{10}$

$$= \left(\frac{30k}{10}\right) + \left(\frac{17}{10}\right)$$

$\therefore 30k$ is completely divisible by 10, hence the second term will determine the remainder.

\Rightarrow Remainder when 17 is divided by 10 is $17\%10 = 7$

\Rightarrow Ans - (A)

Question 9

Which of the following number is divisible by 11?

- A 44433
- B 45332
- C 23581
- D 59609

Answer: D

Explanation:

If the positive difference between the sum of even digits and odd digits (starting from unit's place) is divisible by 11, then the number is also divisible by 11.

$$(A) : 44433 = (3 + 4 + 4) - (3 + 4) = 11 - 7 = 4$$

$$(B) : 45332 = (2 + 3 + 4) - (3 + 5) = 9 - 8 = 1$$

$$(C) : 23581 = (1 + 5 + 2) - (8 + 3) = 8 - 11 = 3$$

$$(D) : 59609 = (9 + 6 + 5) - (0 + 9) = 20 - 9 = 11$$

In the above numbers, only in the last option, 11 is divisible by 11, hence 59609 is divisible by 11.

\Rightarrow Ans - (D)

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Question 10

The LCM of two numbers is 162 and their HCF is 9. If one of the numbers is 18 then what is the other number?

- A 36
- B 81
- C 27
- D 162

Answer: B

Explanation:

We know that $LCM \times HCF = \text{product of two numbers}$

$$\Rightarrow 162 \times 9 = 18 \times x$$

$$\Rightarrow x = 162 \times 9 / 18 = 9 \times 9 = 81$$

Hence, the required number is 81.

Question 11

When the digits of a two natural number are interchanged, the number increases by 18. How many such two digit numbers exist?

- A 6
- B 8
- C 7
- D 9

Answer: C

Explanation:

Let the number be $10x + y$

\Rightarrow We have been given that

$$10y + x - 10x - y = 18$$

$$\Rightarrow 9(y - x) = 18$$

$$\Rightarrow y - x = 2$$

Since, both x and y are natural numbers so, y can range from 3 to 9. Thus, there are 7 such natural numbers.

Question 12

Find the number lying between 900 and 1000 which when divided by 38 and 57 leaves in each case a remainder 23.

- A 912
- B 926
- C 935
- D 962

Answer: C

Explanation:

$$L.C.M. (38, 57) = 114$$

Now, multiple of 114 between 900 and 1000 = 912

$$\text{Now, the number which leaves remainder 23} = 912 + 23 = 935$$

\Rightarrow Ans - (C)

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Question 13

Each member of a society contributes as much rupees for a function as the number of members living in the society. However, for the event to be conducted, each member needs to contribute 10 rupees more. If the number of people in the society is 26 then what is the amount needed for conducting the function?

- A 936
- B 220
- C 660
- D 720

Answer: A

Explanation:

Let there are 'x' members in the society. So the amount needed for the function = $x(x + 10) = x^2 + 10x$
Here $x = 26$. So the required amount will be $26 \times 36 = 936$. Thus, option A is correct.

Question 14

On dividing a certain number by 378, we get 75 as the remainder. What will be the remainder when the same number is divided by 21?

- A 20
- B 0
- C 12
- D 1

Answer: C

Explanation:

We have been given that a number on division by 378 leaves a remainder of 75. So the number can be expressed as $N = 378 \times k + 75$

We can write this as

$$N = 18 \times k + 21 \times k + 75$$

Hence, we can see that remainder with 21 will be nothing but the remainder when 75 is divided by 21. This will be equal to 12. Hence, 12 is the correct answer.

Question 15

It is known that $0 < x < 1$. Which of the following relations is correct?

- A $x^2 > \sqrt{x} > x$
- B $\sqrt{x} < x < x^2$
- C $\sqrt{x} > x > x^2$
- D $x^2 < \sqrt{x} < x$

Answer: C

Explanation:

We know that when the number is between 0 and 1, then higher the power smaller will be the number. Consider an example to understand this.

Let $x = .25$

So $\sqrt{x} = .5$

$\Rightarrow x^2 = .0625$

We can see that the correct order is $\sqrt{x} > x > x^2$

Hence, option C is the correct answer.

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Question 16

A three digit number xyz is taken. The sum of the digits of this number is subtracted from the number. The resultant number is definitely divisible by ?

- A 11
- B 3 and 9
- C only 3
- D 3, 9 and 11

Answer: B

Explanation:

We can express the given number as $100x + 10y + z$

We have been given that $x + y + z$ is subtracted from this number. So we have

$100x + 10y + z - x - y - z = 99x - 9z = 9(11x - z)$

Thus, it must be divisible by 3 and 9.

Question 17

A number on being divided by 36 leaves a remainder of 18. Which of the following is definitely true about this number?

- A The number is divisible by 18
- B The number is divisible by 12
- C The number is divisible by 24
- D More than one of the above

Answer: A

Explanation:

The number on division by 36 leaves a remainder of 18. So the number can be expressed as

$N = 36k + 18$

This can be re-written as

$N = 18(2k + 1)$

Thus, we can see that N must be divisible by 18. Hence, option A is definitely true.

Question 18

What smallest number should be added to 1434 so that the sum is completely divisible by 17?

- A 13
- B 15

C 9

D 11

Answer: D

Explanation:

We know that $17 \times 85 = 1445$

1445 is the smallest number above 1434 and divisible by 17.

So $1445 - 1434 = 11$ must be added to 1434 to get a number which is divisible by 17.

Hence, option D is the correct option.

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Question 19

The sum of all prime numbers between 45 and 63 is

A 271

B 220

C 277

D 224

Answer: B

Explanation:

Number between 45 and 63 which are prime are - 47, 53, 59, 61.

Required sum = $47 + 53 + 59 + 61 = 220$

Hence, option B is the correct option.

Question 20

What digit should replace the blank for the number to be divisible by 11.

3859_572

A 2

B 5

C 9

D 4

Answer: C

Explanation:

For a number to be divisible by 11. The difference of the sum of digits in even places and odd places should be equal to 0 or divisible by 7.

Let the blank be x.

Sum of odd places = $2 + 5 + 9 + 8 = 24$

Sum of even places = $7 + x + 5 + 3 = 15 + x$

Difference = $9 - x = 0$

$x = 9$

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