HCF and LCM of Numbers Questions for CDS & SSC Exams.

HCF and LCM of numbers Quiz 3

Directions: Kindly study the following Questions carefully and choose the right answer:

1. The least number which when divided by 6, 9, 12, 15, 18 leaves the same remainder 2 in each case, is:

A. 176 B. 178 C. 180 D. 182

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2. The HCF of two numbers is 98 and their LCM is 2352. The sum of the numbers may be

A. 1078 B. 1398 C. 1426 D. 1484

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3. The LCM of two numbers is 2376 while their HCF is 33. If one of the numbers is 297, then the other number is

A. 216 B. 264 C. 642 D. 792

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4. The product of HCF and LCM of 18 and 15 is

A. 120 B. 150 C. 175 D. 270

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5. Three planets revolve round the Sun once in 200, 250 and 300 days, respectively in their own orbits. When do they all come relatively to the same position as at a certain point of time in their orbits?

A. After 3000 days B. After 2000 days C. After 1500 days D. After 1200 days

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6. What is the greatest number that divides 13850 and 17030 and leaves a reminder 17?

A. 477 B. 159 C. 107 D. 87

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7. The HCF and LCM of two natural numbers are 12 and 72, respectively. What is the difference between the two numbers, if one of the numbers is 24?

A. 12 B. 18 C. 21 D. 24

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8. The sum of two numbers is 232 and their HCF is 29. What is the number of such pairs of numbers satisfying the above condition?

A. One B. Two C. Four D. None of these

9. The product of two numbers is 6912 and their GCD is 24. What is the LCM?

A. 280 B. 286 C. 288 D. 296

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10. What is the LCM of $\frac{2}{3}, \frac{7}{9}$ and $\frac{14}{15}$?

A. $\frac{7}{3}$ B. $\frac{14}{3}$ C. $\frac{2}{3}$ D. $\frac{1}{3}$

Correct Answers:

1	2	3	4	5	6	7	8	9	10
D	A	B	D	A	B	A	B	C	B

Explanations:

1. Given numbers are: 6, 9, 12, 15, 18
LCM of given numbers = 180
So, 180 + 2 = 182 is the number that leaves 2 as a remainder.

Hence, option D is correct.

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2. Let two numbers are 98x and 98y. Then,
Product of number = Product of HCF and LCM
98x × 98y = 98 × 2352
xy = 24
Let x = 8 and y = 3 (As Co-prime factors of 24 be 8 and 3)
Then, Sum of number = 98 × 8 + 98 × 3 = 98 (11) = 1078

Hence, option A is correct.

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3. Given,
LCM of two numbers = 2376
HCF of two numbers = 33
One of the number = 297
∵ (HCF of two numbers) × (LCM of two numbers) = (First number) × (Second number)
∴ Second number = $\frac{33 \times 2376}{297}$ = 264

Hence, option B is correct.

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4. HCF of 18 and 15 = 3
LCM of 18 and 15 = 90
∴ Product of HCF and LCM of both numbers = 3 × 90 = 270.
Hence, option D is correct,

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5. Given that, three planets revolves the Sun once in 200, 250 and 300 days, respectively in their own orbits.
∴ Required time = LCM of (200, 250 and 300) = 3000 days
Hence, after 3000 days they all come relatively to the same position as at a certain point of time in their orbits.
Hence, option A is correct.

6. When divide 13850 and 17030 by the number the remainder is 17. So, find HCF of (13850 – 17) and (17030 – 17)
i.e., 13833 and 17013 Here,

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13833) 17013 (1
       13833
       ------
        3180 ) 13833(4
               12720
               -----
                1113)3180(2
                     2226
                     ----
                      954 )1113(1
                           954
                           ---
                           159 )954(6
                                954
                                ---
                                 x
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∴ Required number = 159.
Hence, option B is correct.

7.

Second number = $\frac{\text{LCM} \times \text{HCF}}{\text{First Number}} = \frac{72 \times 12}{24} = 36$

∴ Difference between two numbers = 36 – 24 = 12.

Hence, option A is correct.

8. Let the two numbers be 29x and 29y
∴ 29x + 29y = 232 ⇒ x + y = 8
⇒ Co-primes of (x, y) = (1, 7) (3, 5)
Since, once such pair is (29 × 1 and 29 × 7) = 29 and 203
Hence, the other pair is (29 × 3 and 29 × 5) = 87 and 145.

Hence, option B is correct.

9. Given, Product of two numbers = 6912 and GCD = 24
Product of two number = GCD × LCM
∴ LCM = $\frac{6912}{24} = 288$

Hence, option C is correct.

10.

$$\text{LCM}\left(\frac{2}{3}, \frac{7}{9}, \frac{14}{15}\right) = \frac{\text{LCM}\ (2, 7, 14)}{\text{HCF}\ (3, 9, 15)} = \frac{14}{3}$$

Hence, option B is correct.