LCM and HCF

Model 1: Basic LCM and HCF

1. What will be the smallest number divisible by 6, 8, 18, 24 and 36?

1) 36 2) 72 3) 48 4) 144 5) None of these

2. Which is the least number divisible by 10, 18 and 25?

1) 350 2) 450 3) 320 4) 500 5) None of these

3. What is the LCM of 18 and 32?

1) 200 2) 240 3) 120 4) 288 5) None of these

4. What is the largest number that can exactly divide 52, 65 and 143?

1) 11 2) 13 3) 14 4) 12 5) None of these

5. What is the greatest number that will exactly divide 75, 90 and 165?

1) 11 2) 15 3) 14 4) 12 5) None of these

6. What is HCF of 720 and 324?

1) 32 2) 50 3) 9 4) 36 5) None of these

7. The LCM of three different numbers is 120. Which of the following cannot be their HCF?

1) 8 2) 12 3) 24 4) 35 5) 40

8. The ratio of three numbers is 35: 55: 77 and their H. C. F is 24. What are the numbers?

   1) 420,660,924 2) 280,440,616 3) 840, 1320, 1848

   4) 105,165,231 5) None of these

Model 2: Product of LCM and HCF

9. The LCM and HCF of two positive numbers are 300 and 30 respectively. If one of the numbers is divided by 4, the quotient is 15, and then what is the other number?

   1) 360 2) 300 3) 150 4) 75 5) None of these

10. The HCF of two numbers is 11 and their LCM is 7700. If one of these numbers is 275, then what is the other number?

    1) 279 2) 283 3) 308 4) 318 5) 320

11. The H.C.F and L.C.M of two numbers are 44 and 264 respectively. If the first number is divided by 2, the quotient is 44. What is the other number?

    1) 123 2) 33 3) 66 4) 264 5) None of these

Model 3: Smallest Number That Leaves a Common Remainder when divided by p, q and r

12. Find the smallest number which gives a remainder 5, when divided by any of the numbers 8, 12 and 15.

    1) 120 2) 240 3) 125 4) 65 5) 101

Model 4: Smallest Number That Leaves Remainders a, b and c When Divided by p, q and r Respectively

13. What is the smallest number which when divided by 16, 20, and 25 leaves remainder 7, 11, and 16 respectively?

1) 391 2) 404 3) 164 4) 146 5) None of these

14. Which is the smallest number which when divided by 20, 25, 35 and 40 leaves the remainder 14, 19, 29 and 34 respectively?

1) 1394 2) 1404 3) 1664 4) 1406 5) None of these

Model 5: Greatest Number of 4 Digits Which Is Exactly Divisible by the given Numbers

15. Find the greatest number of 4 digits, which is exactly divisible by 8, 12, 18, 15 and 20.

1) 9840 2) 9720 3) 9280 4) 9630 5) None of these

16. Which is the greatest number of 4 digits, which is divisible by each one of the numbers 12, 18, 21 and 28?

1) 9848 2) 9864 3) 9828 4) 9636 5) None of these

Model 6: Greatest Number That Divides p, q and r Leaving the Same Remainder

17. Find the greatest number that will divide 65, 81 and 145 leaving the same remainder in each case.

1) 32 2) 50 3) 9 4) 16 5) None of these

Model 7: Greatest Number That Divides p, q and r Leaving the Remainders a, b and c Respectively

18. What will be the greatest number that divides 68, 59 and 43 leaving the remainders 8, 9 and 3 respectively?

1) 8 2) 10 3) 24 4) 35 5) None of these

Model 8: Puzzles Based on LCM/HCF

19. What is the least number of square tiles of the uniform size required to pave the floor of a rectangular hall of length 20 m and breadth 16 m?

1) 15 2) 20 3) 35 4) 8 5) None of these

20. The length and breadth of a room are 13 m and 7.5 m respectively; the floor of the room is to be paved with square tiles of uniform size. What will be the length of the largest possible size of the tile?

1) 1.0m 2) 0.5m 3) 1.5m 4) 5.0m 5) 6.0m

21. What is the least number of square tiles required to pave the ceiling of a room 15 m long and 9 m broad?

1) 15 2) 105 3) 135 4) 81 5) None of these

22. A trader has three types of oils of the following quantities: 406 liters, 434 liters and 455 liters respectively. If he wants to fill them separately in tins of equal capacity, what is the least number of tins required?

1) 42 2) 21 3) 7 4) 84 5) None of these

23. Three bells ring at regular intervals of 3 minutes, 4 minutes and 8 minutes respectively. At what time will all the three bells ring together, if all start ringing from 10:00 AM onwards?

    1) 10:15 AM 2) 10:30 AM 3) 10:24 AM 4) 11:00 AM 5) 10:36 AM

24. There are three bells which ring at regular intervals of 30 seconds, 45 seconds and 60 seconds respectively. If all of them ring together at 1:00 PM, at what time will they again ring together?

    1) 1:12 PM 2) 1:24 PM 3) 1:30 PM 4) 1:03 PM 5) None of these

25. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 3 min, B in 4 min and C in 5 min, all starting at the same point. After how many minutes will they again meet at the starting point?

    1) 12 minutes 2) 24 minutes 3) 60 minutes 4) 46 minutes 5) None of these

Answers

1 - 2	2 - 2	3 - 4	4 - 2	5 - 2	6 - 4	7 - 4	8 - 3	9 - 3	10 - 3
11 - 5	12 - 3	13 - 1	14 - 1	15 - 2	16 - 3	17 - 4	18 - 2	19 - 2	20 - 2
21 - 1	22 - 5	23 - 3	24 - 4	25 - 3					

Additional Examples

1. The least multiple of 13 which when divide by 4, 5, 6, 7 leaves remainder 3 in each case is_

a) 3780 b) 3783 c) 2520 d) 2522

2. Product of two co-prime numbers is 117. Then their L.C.M is

a) 117 b) 9 c) 13 d) 39

3. The product of two numbers is 2028 and their HCF is 13. The number of such pairs is

a) 1 b) 2 c) 3 d) 4

4. LCM of two numbers is 120 and their HCF is 10. Which of the following can be the sum of those two numbers?

a) 140 b) 80 c) 60 d) 70

5. The greatest number which when subtracted from 5834, gives a number exactly divisible by each of 20, 28, 32 and 35, is

a) 1120 b) 4714 c) 5200 d) 5600

6. A tyre has 2 punctures. The first puncture alone would have made the tyre flat in 9 minutes and the second alone would have done it in 6 minutes. If air leaks out at a constant rate, how long does it take both the punctures together to make it flat?

a) $1\frac{1}{2}$ minutes b) $3\frac{1}{2}$ minutes c) $3\frac{3}{5}$ minutes d) $4\frac{1}{4}$ minutes

7. The HCF and LCM of two numbers are 12 and 924 respectively. Then the number of such pairs is

a) 0 b) 1 c) 2 d) 3

8. What is the least number which, when divided by 5,6,7,8 gives the remainder 3 but is divisible by 9.

   a) 1463 b) 1573 c) 1683 d) 1790

9. The LCM of three different numbers is 120. Which of the following cannot be their HCF?

   a) 8 b) 12 c) 24 d) 35

10. The traffic lights at three different road-crossings change after 24 seconds, 36 seconds and 54 seconds respectively. If they all change simultaneously at 10:15:00 am, then at what time will they again change simultaneously

    a) 10:16:54 AM b) 10 : 18 : 36 AM c) 10 : 17 : 02 AM

    d) 10 : 22: 12 AM

11. Four runners started running simultaneously from a point on a circular track. They took 200 sec, 300 sec, 360 sec, and 450 sec, to complete one round. After how much time do they meet at the starting point for the first time?

    a) 1800 seconds b) 3600 seconds c) 2400 seconds

    d) 4800 seconds

12. Three bells ring simultaneously at 11 am. They ring at regular intervals of 20 minutes, 30 minutes, and 40 minutes respectively. The time when all the three ring together next is

    a) 2 pm b) 1 pm c) 1.15 pm d) 1.30 pm

13. The HCF and LCM of two numbers are 8 and 48 respectively. If one of the numbers is 24, then the other number is

    a) 48 b) 36 c) 24 d) 16

14. Two numbers are in the ratio 3:4. Their LCM is 84. The greater number is

    a) 21 b) 24 c) 28 d) 84

15. There are five numbers. HCF of each possible pair is 4 and LCM of all five numbers is 27720. What will be the product of all the five numbers?

    a) 7096320 b) 277200 c) 27700 d) None of these

Answers

1 – b	2 - a	3 - b	4 - d	5 - b	6 - c	7 - c	8 - b	9 - d	10 - b
11 - a	12 - b	13 - d	14 - c	15 - a					