Spardhaguru Skill Edge Aptitude Academy

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HCF (Highest Common Factor) and LCM (Lowest Common Multiple) form the backbone of Quantitative Aptitude, appearing frequently in Banking (SBI/IBPS/RBI), Railway (RRB NTPC/Group D), and SSC (CGL/CHSL/MTS) exams.

Core Standard Formulas

Product Rule: $\text{HCF} \times \text{LCM} =$ Product of the two numbers (Applicable only for two numbers a and b).

Fractions Rule:

$$\text{HCF of Fractions} = \frac{\text{HCF of Numerators}}{\text{LCM of Denominators}}$$

$$\text{LCM of Fractions} = \frac{\text{LCM of Numerators}}{\text{HCF of Denominators}}$$

Ratio Concept: If two numbers are in the ratio $a:b$ and their HCF is H, then the numbers are Ha and Hb, and their LCM $= H \times a \times b$.

High-Yield Exam Question Types & Shortcuts

Quick Speed-Math Hacks

HCF by Difference Method: The HCF of any set of numbers is always either equal to the smallest difference between any two numbers or a factor of that difference.

Co-Prime Numbers: If two numbers are co-prime (no common factor other than 1), their HCF $= 1$ and LCM $=$ Product of the numbers.

💡 Murthy Sir's Shortcut Tip

In competitive coaching (Banking, SSC, RRB), traditional school methods like long division or prime factor trees are far too slow.The signature speed-math techniques and shortcuts designed to eliminate pen-and-paper steps and solve HCF & LCM problems in seconds.

1. HCF Shortcuts (The "Difference Method")

Instead of prime factorizing large numbers, use the **Difference Rule**:

$24 \times 2 = 48$ (18 does not divide 48)

Rule: The HCF of any set of numbers is always **equal to the smallest non-zero difference** between any two numbers in the set, or **a factor of that difference**.

Step 1: Find the two closest numbers in the given set and calculate their difference (D).

Step 2: Check if D divides all the given numbers. If yes, D is your HCF.

Step 3: If D doesn't divide all numbers, break D into its factors (from largest to smallest). The largest factor that divides all numbers is the HCF.

Example 1: Find HCF of 42, 63, 105

- Smallest difference: $63 - 42 = 21$.
- Does 21 divide 42, 63, and 105? **Yes.**
- HCF $= 21$ (Solved in 3 seconds without factorization!).

Example 2: Find HCF of 144, 180, 192

- Smallest difference: $192 - 180 = 12$.
- Does 12 divide 144, 180, and 192? **Yes.**
- HCF $= 12$.

2. LCM Shortcuts (The "Largest Number Method")

Instead of drawing vertical LCM grids, use the **Scaling Method**:

Step 1: Identify the **largest number** in the set.

Step 2: Check if all other smaller numbers divide this largest number. If yes, the largest number is your LCM.

Step 3: If not, take multiples ($2\times, 3\times, 4\times$) of the largest number until all other numbers divide it completely.

Example: Find LCM of 6, 12, 18, 24

1. Largest number $=$ **24**.
2. 6 and 12 divide 24 (strike them out). 18 does **not** divide 24.
3. Take multiples of 24:

$24 \times 3 =$ **72** (18 divides 72 perfectly!)

4. LCM = 72.

3. Ratio & HCF Master Technique

In Banking and SSC CGL exams, questions involving ratios are extremely common.

Key Rule: If two numbers are in ratio $a:b$ and their HCF is H:

First Number $= H \times a$

Second Number $= H \times b$

Sum of Numbers $= H \times (a + b)$

Difference of Numbers $= H \times |a - b|$

LCM $= H \times a \times b$

Exam Question Trick:

Question: The ratio of two numbers is 3:4 and their HCF is 15. Find their LCM and Sum instantly.

Instant Solution:

- LCM $= 15 \times 3 \times 4 =$ **180**
- Sum $= 15 \times (3 + 4) =$ **105**

4. Exam Elimination Hack (Option Verification)

When stuck on complex word problems during live exams:

1. **For HCF questions:** The correct option **must divide all given numbers completely** (or divide $x-a, y-b, z-c$). Test options starting from the **largest choice** downwards.
2. **For LCM questions:** The correct option **must be divisible by all given numbers**. Test options starting from the **smallest choice** upwards using divisibility rules (Rule of 3, 9, 11, etc.).

Note: - Solving HCF

1) Divide the larger number by smaller one to obtain remainder.
2) If the remainder is zero, the divisor is the required HCF.
3) If not, then take this remainder as a divisor and the first divisor as the dividend.
4) Repeat the process till zero is obtained as a remainder the last divisor is required HCF.

Exam Category	Frequently Asked Pattern	Direct Solving Formula / Shortcut
Remainder Type 1	Largest number that divides x,y,z leaving remainders a,b,c	HCF of $(x-a),(y-b),(z-c)$
Remainder Type 2	Largest number that divides x,y,z leaving the *same* remainder in each case	HCF of $\|\|x-y\|\|,\|\|y-z\|\|,\|\|z-x\|\|$
Remainder Type 3	Smallest number which when divided by x,y,z leaves remainder k in each case	[LCM of (x,y,z)] $+ k$
Remainder Type 4	Smallest number divided by x,y,z leaving remainders a,b,c where $(x-a)=(y-b)=(z-c)=K$	[LCM of (x,y,z)] $- K$
Bells / Traffic Signals	Bells toll together at intervals of t_1,t_2,t_3 seconds. When do they toll together next?	Find LCM (t_1,t_2,t_3). For total tolls in time T: $\left[\frac{T}{\text{LCM}}\right]+1$

Category 1: These questions test your fundamental understanding of definitions.

1. Find the LCM of 4, 8, 12.
   a) 24 | b) 25 | c) 23 | d) 26

2. Find the LCM of 10, 20, 30.
   a) 67 | b) 63 | c) 60 | d) 65

3. Find the LCM of 24, 32, 48.
   a) 94 | b) 92 | c) 96 | d)

4. Find the LCM of 12, 15, 20.
   a) 60 | b) 80 | c) 90 | d) 50

5. Find the HCF of 24, 36.
   a) 17 | b) 12 | c) 13 | d) 18

6. Find the HCF of 1782, 420.
   a) 7 | b) 9 | c) 4 | d) 6

7. Find the HCF of 10997, 14139.
   a) 1157 | b) 1571 | c) 1657 | d) 1675

8. Find the HCF of 62, 186, 279.
   a) 31 | b) 34 | c) 54 | d) 45

9. If $P = 2^3 \times 3^{10} \times 5$ and $Q = 2^5 \times 3 \times 7$, then HCF of P and Q is
   (a) $2 . 3 . 5 . 7$ (b) 3.2^3
   (c) $2^2 . 3^7$ (d) $2^5 . 3^{10} . 5 . 7$

Category 2:

1. Find the HCF and LCM of 0.63, 1.05, and 2.1.
   a) HCF = 0.11, LCM = 6.10
   b) HCF = 0.31, LCM = 6.80
   c) HCF = 0.21, LCM = 6.30
   d) HCF = 0.91, LCM = 6.50

2. HCF of 2/3, 4/5 and 6/7 is:
   (a) 2/105 (b) 12/35
   (c) 1/105 (d) 24/35

3. Find the LCM of 2/3, 4/9 and 5/6:
   (a) 20 | (b) 24 | (c) 20/3 | (d) 4/27

4. Find the LCM of 1.2, 0.24 and 6.
   (a) 6 | (b) 8 | (c) 0.07 | (d) 0.6

Category 3: HCF (Measure/Remainder)

1. Find the greatest possible length which can be used to measure exactly 4m 95cm, 9m, and 16m 65cm.
   a) 45 | b) 46 | c) 44 | d) 47

2. Determine the largest tape which can be used to measure exactly 7m, 3m 85cm, and 12m 95cm.
   a) 54 | b) 36 | c) 35 | d) 45

3. Find the greatest number which, on dividing 1657 and 2037, leaves remainders 6 and 5 respectively.
   a) 125 | b) 127 | c) 123 | d) 122

4. Find the largest number which divides 445, 572, and 699, leaving remainders 4, 5, and 6 respectively.
   a) 63 | b) 64 | c) 62 | d) 65

5. Let N be the greatest number that will divide 1305, 4665, and 6905, leaving the same remainder in each case. What is the sum of the digits in N?
   a) 8 | b) 5 | c) 4 | d) 6

Category 4: (Simultaneous Events/Intervals)

1. The traffic lights at three different road crossings change after 24, 36, and 54 seconds respectively. If they all change simultaneously at 10:15:00 AM, at what time will they next change simultaneously?
   a) 10:22:12 AM b) 10:17:02 AM
   c) 10:18:36 AM d) 10:16:54 AM

2. Three bells ring at intervals of 36, 40, and 48 seconds. If they start together, after how many minutes will they next ring together?
   a) 24 mins b) 18 mins
   c) 12 mins d) 6 mins

3. Four bells toll at intervals of 4, 7, 12, and 84 seconds. They toll together at 5:00. How many times will they toll together in 28 minutes?
   a) 40 | b) 20 | c) 60 | d) 30

Category 5: Mathematical Properties & Algebraic Relations

1. The LCM of two numbers is 1920 and their HCF is 16. If one number is 128, find the other.
   a) 240 | b) 204 | c) 320 | d) 260

2. The sum of the HCF and LCM of two numbers is 680 and the LCM is 84 times the HCF. If one number is 56, what is the other?
   a) 84 | b) 8 | c) 12 | d) 96

3. The product of the LCM and HCF of two numbers is 24. If the difference of the numbers is 2, what is the greater number?
   a) 3 | b) 6 | c) 4 | d) 8

Category 6: Ratio-Based Problems

1. The ratio of two numbers is 4: 5 and their LCM is 120. Find the numbers.
   a) 24, 30 | b) 30, 40 | c) 40, 32 | d) 36, 20

2. Three numbers are in the ratio 2: 3 : 4 and their HCF is 12. Find their LCM.
   a) 96 | b) 144 | c) 192 | d) 72

3. Two numbers are in the ratio 3: 4. Their LCM is 84. What is the greater number?
   a) 28 | b) 21 | c) 24 | d) 84

Category 7: Sums, Pairs, 1. LCM of two numbers is 44 times the HCF. The sum of LCM and HCF is 1125. If one number is 25, the other is:
   (b) 1100 | (b) 975 | (c) 900 | (d) 800

2. Product of two numbers is 2028 and HCF is 13. Number of such pairs is:
   (a) 1 | (b) 2 | (c) 3 | (d) 4

3. Sum of two numbers is 528 and their HCF is 33. How many pairs of such numbers exist?
   (a) 1 | (b) 2 | (c) 3 | (d) 4

4. Product of two numbers is 4107 and HCF is 37. The greatest number is:
   (a) 185 | (b) 111 | (c) 107 | (d) 101

5. LCM of two numbers is 120 and HCF is 10. Which of the following can be the sum of those two numbers?
   (a) 140 | (b) 80 | (c) 60 | (d) 70

6. Sum of two numbers is 384 and HCF is 48. The difference of the numbers is:
   (c) 100 | (b) 192 | (c) 288 | (d) 33
   (d)

Category 8: Arrangements, Contains

1) 84 Maths books, 90 Physics books and 120 Chemistry books must be stacked topic-wise. How many books will be there in each stack so that each stack will have the same height too?
a) 21 b) 18 c) 12 d) 6

2) There are 24 peaches, 36 apricots and 60 bananas and they have to be arranged in several rows in such a way that every row contains the same number of fruits of only one type. What is the minimum number of rows required for this to happen ?
a) 6 b) 9 c) 12 d) 10

3) A milk vendor has 21 liters of cow milk, 42 liters of toned milk and 63 liters of double toned milk. If he wants to pack them in cans so that each can contains same liters of milk and does not want to mix any two kinds of milk in a can, then the least number of cans required is
a) 12 b) 6 c) 3 d) 9

4) In a school, 391 boys and 323 girls have been divided into the largest possible equal classes, so that each class of boys numbers the same as each class of girls. What is the number of classes
a) 17 b) 19 c) 23 d) 44

Practice Questions

1. Find the HCF of 36 and 84.
   (a) 12 | (b) 6 | (c) 4 | (d) 18

2. If $P = 2^3 \times 3^{10} \times 5$ and $Q = 2^5 \times 3 \times 7$, then HCF of P and Q is
   (a) $2 . 3 . 5 . 7$ (b) 3.2^3
   (c) $2^2 . 3^7$ (d) $2^5 . 3^{10} . 5 . 7$

3. Find the HCF of 59 and 12.
   (a) 708 | (b) 1 | (c) 2 | (d) 218

4. The HCF of 384, 432 and 1200 is:
   (a) 36 | (b) 24 | (c) 48 | (d) 64

5. Find the lowest common multiple of 24, 36 and 40.
   (a) 120 | (b) 240 | (c) 360 | (d) 480

6. What are the HCF and LCM of 6, 72 and 120?
   (a) 12, 180 | (b) 6, 360 | (c) 360, 6 | (d) 12, 360

7. The LCM of three different numbers is 120. Which of the following cannot be their HCF?
   (a) 8 | (b) 12 | (c) 24 | (d) 35

(Product = HCF × LCM)

8. The product of two numbers is 20535. If their HCF is 37, find their LCM.
   (e) 565 | (b) 555 | (c) 455 | (d) 558

9. LCM of two numbers is 2079 and their HCF is 27. If one number is 189, the other is:
   (a) 189 | (b) 216 | (c) 297 | (d) 584

10. LCM of two numbers is 210. If HCF is 35 and one number is 105, find the other.
    (a) 35 | (b) 70 | (c) 105 | (d) 14

11. The HCF and LCM of two numbers are 6 and 5040. If one number is 210, find the other.
    (a) 250 | (b) 144 | (c) 30 | (d) 630

12. The HCF and LCM of two numbers are 8 and 48. If one number is 24, find the other.
    (a) 48 | (b) 36 | (c) 24 | (d) 16

13. LCM of two numbers is 2376 and HCF is 33. If one is 297, the other is:
    (a) 216 | (b) 264 | (c) 642 | (d) 792

Ratio-Based Problems

14. Two numbers are in the ratio 3:4. If HCF is 4, then their LCM is:
    (a) 48 | (b) 42 | (c) 36 | (d) 24

15. The ratio of two numbers is 5:6 and their LCM is 480. Their HCF is:
    (a) 20 | (b) 16 | (c) 6 | (d) 5

16. Two numbers are in the ratio 3:5 and their LCM is 225. The smaller number is:
    (a) 45 | (b) 60 | (c) 75 | (d) 90

17. Three numbers are in the ratio 2:3:4 and their HCF is 12. Their LCM is:
    (a) 144 | (b) 192 | (c) 96 | (d) 72

Remainder & Greatest/Least Number

18. The greatest number less than 1500, divisible by both 16 and 18, is:
    (a) 1440 | (b) 1404 | (c) 1386 | (d) 1368

19. The greatest number, which when divided by 989 and 1327, leaves remainder 5 and 7 respectively, is:
    (a) 8 | (b) 16 | (c) 24 | (d) 32

20. The greatest number which can divide 1305, 4665, 6905 leaving the same remainder in each case is:
    (a) 2605 | (b) 647 | (c) 1120 | (d) 1280

21. When a number is divided by 15, 20 and 35, each time the remainder is 8. The smallest number is:
    (a) 428 | (b) 427 | (c) 328 | (d) 338

22. The greatest number which when divided by 12, 16 and 24, leaves remainders 2, 6 and 14, respectively, is:
    (a) 38 | (b) 60 | (c) 58 | (d) 48

23. A number, when successively divided by 4, 5 and 6, leaves remainders 2, 3 and 4 respectively. Such a least number is:
(a) 50 | (b) 53 | (c) 58 | (d) 214

24. The greatest number, which when subtracted from 5834, gives a number exactly divisible by 20, 28, 32 and 35 is:
(a) 1120 | (b) 234 | (c) 5200 | (d) 5600

25. The smallest number, which when increased by 5 is divisible by 24, 32, 36 and 64, is:
(a) 571 | (b) 567 | (c) 581 | (d) 576

26. What is the least number which when doubled is perfectly divisible by 7, 12 and 15?
(a) 220 | (b) 215 | (c) 214 | (d) 210

27. The smallest perfect square divisible by each of 6, 12 and 18 is:
(a) 196 | (b) 144 | (c) 108 | (d) 36

28. Smallest four-digit number which when divided by 2, 3, 4 and 6 leaves remainder 1 in each case is:
(a) 1008 | (b) 1005 | (c) 1009 | (d) 1007

29. Largest four-digit number exactly divisible by 12, 15, 18 and 27 is:
(a) 9690 | (b) 9720 | (c) 9930 | (d) 9960

30. Largest five-digit number which when divided by 16, 24, 30 and 36, leaves the same remainder 10 in each case, is:
(a) 99279 | (b) 99370 | (c) 99269 | (d) 99530

31. Find the largest number of four digits such that on dividing by 15, 18, 21 and 24, the remainders are 11, 14, 17 and 20 respectively.
(a) 6557 | (b) 7556 | (c) 5675 | (d) 7664

Question for all subsequent Examinations

1. Find the HCF of 42, 63, and 140.
a) 7 b) 4
c) 3 d) 5

2. The HCF of two numbers is 15 and their LCM is 300. If one number is 60, find the other.
a) 25 b) 35
c) 75 d) 85

3. Find the smallest number exactly divisible by 12, 15, 20, and 27.
a) 240 b) 140
c) 340 d) 540

4. Find the HCF of 2/3, 8/9, 16/81, and 10/27
a) 2/80 b) 2/82
c) 2/81 d) 2/84

5. What is the LCM of 0.6, 9.6, and 0.12?
a) 2.4 b) 1.4
c) 9.4 d) 9.6

6. Find the greatest number that will divide 728 and 900 leaving remainders 8 and 4 respectively.
a) 24 b) 14
c) 34 d) 16

7. Find the least number which when divided by 6, 7, 8, 9, and 12 leaves the same remainder 1 in each case.
a) 504 b) 503
c) 503 d) 505

8. The ratio of two numbers is 3:4 and their HCF is 4. Find their LCM.
a) 54 b) 42
c) 36 d) 48

9. Three clocks chime at intervals of 60, 75, and 120 minutes. If they chime together at 6:00 AM, when will they next chime together?

a) 2 PM b) 3 PM
c) 4 PM d) 6 PM

10. Find the largest four-digit number which is exactly divisible by 15, 18, 21, and 24.
a) 7460 b) 7360
c) 7260 d) 7560

11. The sum of two numbers is 216 and their HCF is 27. How many such pairs exist?
a) 1 b) 2
c) 3 d) 4

12. If the HCF of two numbers is 13 and their sum is 91, how many pairs are possible?
a) 2 b) 3
c) 4 d) 6

13. Two positive integers have a sum of 150 and an HCF of 15. The number of such pairs is:
a) 2 b) 3
c) 4 d) 5

14. The sum of two numbers is 128 and their HCF is 8. How many pairs of such numbers can be formed?
a) 2 b) 4
c) 6 d) 8

15. The HCF of two numbers is 25 and their sum is 750. How many such pairs are possible?
a) 3 b) 4
c) 6 d) 8

16. Find the greatest number which divides 398, 436 and 542 leaving remainders 7, 11 and 15 respectively.
a) 11 b) 17
c) 34 d) 42

17. What is the largest number that divides 70 and 125, leaving remainders 5 and 8 respectively?
a) 13 b) 65
c) 875 d) 1750

18. Find the greatest number that will divide 445, 572 and 699 leaving remainders 4, 5 and 6 respectively.
a) 42 b) 63
c) 127 d) 141

19. Find the largest number which divides 245 and 1029 leaving a remainder of 5 in each case.
a) 8 b) 16
c) 32 d) 24

20. Find the greatest number which divides 2011 and 2623 leaving remainders 9 and 5 respectively.
a) 12 b) 24
c) 154 d) 32

21. Find the least number which when divided by 6, 7, 8, 9 and 12 leaves the same remainder 1 in each case.
a) 505 b) 504
c) 506 d) 723

22. Find the smallest number which when divided by 24, 32 and 36 leaves a remainder 5 in each case. 24,
a) 288 b) 293
c) 283 d) 300

23. What is the least number which when divided by 12, 15, 20 and 54 leaves a remainder of 4 in each case?
a) 544 b) 540
c) 454 d) 504

24. Find the least number which when divided by 8, 12, 16 and 24 leaves 5 as remainder in each case.
a) 48 b) 53
c) 58 d) 63

25. Find the least number which when divided by 20, 25, 35 and 40 leaves remainders 14, 19, 29 and 34 respectively.
a) 1394 b) 1400

c) 1406 d) 1386

26. Find the smallest number which when divided by 24, 32 and 36 leaves remainders 19, 27 and 31 respectively.
a) 288 b) 283
c) 293 d) 278

27. What is the least number which when divided by 12, 15 and 20 leaves remainders 4, 7 and 12 respectively?
a) 52 b) 60
c) 68 d) 48

28. The greatest four-digit number exactly divisible by 12, 18, 21 and 28 is:
a) 9828 b) 9818
c) 9288 d) 9576

29. Find the largest three-digit number which is exactly divisible by 4, 5 and 6.
a) 900 b) 960
c) 990 d) 980

30 The greatest five-digit number exactly divisible by 8, 12, 15 and 20 is:
a) 99960 b) 99950
c) 99980 d) 99940

31. The greatest four-digit number which when divided by 15, 20 and 30 leaves remainders 10, 15 and 25 respectively.
a) 9955 b) 9960
c) 9950 d) 9995

32. Find the largest three-digit number which when divided by 8, 12 and 16 leaves remainders 5, 9 and 13 respectively.
a) 960 b) 957
c) 954 d) 947

33. The greatest four-digit number which when divided by 10, 12 and 15 leaves 4 as remainder in each case.
a) 9960 b) 9964
c) 9904 d) 9994

34. Three bells toll at intervals of 12, 15 and 18 seconds respectively. If they start tolling together, after what time will they next toll together?
a) 180 s b) 360 s
c) 60 s d) 120 s

35. Three traffic lights change after every 48 s, 72 s and 108 s. After how many seconds will they change again simultaneously?
a) 216 s b) 432 s
c) 540 s d) 1080 s

36. A, B, and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 s, B in 308 s and C in 198 s. After what time will they meet again at the starting point? A, B
a) 2772 s b) 2500 s
c) 3000 s d) 2100 s

37. Four bells toll at intervals of 12, 15, 20 and 30 minutes respectively. If they toll together at 10:00 am, when will they toll together again?
a) 11:00 am b) 11:30 am
c) 12:00 pm d) 10:45 am

38. Three sirens in a factory blow at intervals of 18, 24 and 32 minutes. If they blow together at 1:00 pm, after how many minutes will they blow together again?
a) 144 min b) 288 min
c) 96 min d) 200 min

39. Six bells commence tolling together and toll at intervals of 2, 4, 6, 8, 10 and 12 seconds respectively. How many times do they toll together in 30 minutes?
a) 15 b) 16
c) 30 d) 31

40. Five bells commence tolling together and toll at intervals of 3, 6, 9, 12 and 15 seconds

respectively. How many times do they toll together in 45 minutes?
a) 15 b) 16
c) 10 d) 11

Past Examination Questions for Reference

1. Find the HCF of 36 and 84. [RRB Group D 2003]
(a) 12 (b) 6
(c) 4 (d) 18

2. If P = 2^3 x 3^{10} x 5 and Q=2^5 x 3 x 7, then HCF of P and Q is
(a) 2 . 3 . 5 . 7 (b) 3.2^3
(c) 2^2. 3^7 (d) 2^5. 3^{10}. 5 . 7

3. Find the HCF of 59 and 12.
(a) 708 (b) 1
(c) 2 (d) 218

4. The HCF of 384, 432 and 1200 is
(a) 36 (b) 24
(c) 48 (d) 64

5. Find the lowest common multiple of 24, 36 and 40.
(a) 120 (b) 240
(c) 360 (d) 480

6. What are the Highest Common Factor and Lowest Common Multiple of 6, 72 and 120? [IB Security Assist. 2018]
(a) 12, 180 (b) 6, 360
(c) 360, 6 (d) 12, 360

7. The LCM of three different numbers is 120. Which of the following cannot be their HCF?
(a) 8 (b) 12
(c) 24 (d) 35

8. HCF of 2/3, 4/5 and 6/7 is
(a) $\frac{48}{105}$ (b) $\frac{2}{105}$
(c) $\frac{1}{105}$ (d) $\frac{24}{105}$

9. Find the LCM of $\frac{3}{4}$, $\frac{8}{9}$ and $\frac{3}{5}$
(a) 20 (b) 24
(c) $\frac{1}{24}$ (d) $\frac{1}{20}$

10. Find the LCM of 1.2, 0.24 and 6.
(a) 6 (b) 8
(c) 0.07 (d) 0.6

11. The product of two numbers is 20535. If their HCF is 37, then find their LCM.
(a) 565 (b) 555
(c) 455 (d) 558

12. LCM of two numbers is 2079 and their HC is 27. If one of the numbers is 189, the other number is
(a) 189 (b) 216
(c) 297 (d) 584

13. The LCM of two numbers is 210. If their HCF is 35 and one of the numbers is 105, find the other number.
(a) 35 (b) 70
(c) 105 (d) 140

14. The HCF and LCM of two numbers are 6 arc 5040, respectively. If one of the numbers is 210, then the other number is
(a) 250 (b) 144
(c) 30 (d) 630

15. 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

16. The LCM of two numbers is 2376 while the HCF is 33. If one of the numbers is 297, the other number is
(a) 216 (b) 264
(c) 642 (d) 792

17. Two numbers are in the ratio of 3: 4. If the

HCF is 4, then their LCM is
(a) 48 (b) 42
(c) 36 (d) 24

18. The ratio of two numbers is 5: LCM is 480, then their HCF is 6 and their
(a) 20 (b) 16
(c) 6 (d) 5

19. Two numbers are in the ratio of 3: 5 and their LCM is 225. The smaller number is
(a) 45 (b) 60
(c) 75 (d) 90

20. Three numbers are in the ratio of 2: 3: 4 an their HCF is 12. The LCM of the numbers
(a) 144 (b) 192
(c) 96 (d) 72

21. The LCM of two numbers is 44 times of the HCF. The sum of the LCM and HCF is 1125 If one number is 25, then the other number is
(a) 1100 (b) 975
(c) 900 (d) 800

22. 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

23. The sum of two numbers is 528 and their HCF is 33. How many pairs of such numbers can be?
(a) 1 (b) 2
(c) 3 (d) 4

24. The product of two numbers is 4107. If the HCF of the numbers is 37. The greatest number is
(a) 185 (b) 111
(c) 107 (d) 101

25. 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

26. The sum of two numbers is 384. HCF of the numbers is 48. The difference of the numbers is
(a) 100 (b) 192
(c) 288 (d) 336

27. The greatest number less than 1500, which is divisible by both 16 and 18, is
(a) 1440 (b) 1404
(c) 1386 (d) 1368

28. The greatest number, which when divided by 989 and 1327, leaves remainder 5 and 7 respectively, is
(a) 8 (b) 16
(c) 24 (d) 32

29. The greatest number which can divide 1305, 4665, 6905 leaving the same remainder in each case is
(a) 2605 (b) 647
(c) 1120 (d) 1280

30. When a number is divided by 15, 20 and 35, each time the remainder is 8. Then, the smallest number is
(a) 428 (b) 427
(c) 328 (d) 338

31. The greatest number which when divided by 12, 16 and 24, leaves remainders 2, 6 and 14, respectively, is
(a) 38 (b) 60
(c) 58 (d) 48

32. A number, when successively divided by 4, 5 and 6, leaves remainders 2, 3 and 4 respectively. Such a least number is
(a) 50 (b) 53
(c) 58 (d) 214

33. 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) 234
(c) 5200 (d) 5600

34. The smallest number, which when increased by 5 is divisible by each of 24, 32, 36 and 64, is
(a) 571 (b) 567
(c) 581 (d) 576

35. What is the least number which when doubled is perfectly divisible by 7, 12 and 15?
(a) 220 (b) 215
(c) 214 (d) 210

36. The smallest perfect square divisible by each of 6, 12 and 18 is
(a) 196 (b) 144
(c) 108 (d) 36

37. What is the smallest four-digit number which when divided by 2, 3, 4 and 6 leaves remainder 1 in each case?
(a) 1008 (b) 1005
(c) 1009 (d) 1007

38. The largest four-digit number exactly divisible by each of 12, 15, 18 and 27 is
(a) 9690 (b) 9720
(c) 9930 (d) 9960

39. The largest number of five digits which when divided by 16, 24, 30, and 36, leaves the same remainder 10 in each case, is
(a) 99279 (b) 99370
(c) 99269 (d) 99530

40. Find the largest number of four digits such that on dividing by 15, 18, 21 and 24, the remainders are 11, 14, 17 and 20, respectively.
(a) 6557 (b) 7556
(c) 5675 (d) 7664

1. At a telephone exchange, three phones ring at intervals of 20s, 24s and 30s. If they ring together at 11:25 am, when will they next ring together? [RRB NTPC 2016]
(a) 11: 29 am (b) 11:51 am
(c) 11: 27 am (d) 12: 09 am

2. In a fire range, four shooters are firing at their respective targets. The first, the second, the third and the fourth shooters hit the target once in every 5s, 6s, 7s and 8s, respectively. If all of them hit their target at 9:00 am, when will they hit their target together again? [CDS 2014]
(a) 9:04 am (b) 9:08 am
(c) 9: 14 am (d) 9:20 am

3. Three containers contain 403 L, 434 L, 465 L of diesel, respectively. Then, the maximum capacity of a container that can measure the diesel of the three containers exact number of times is [SSC CPO 2014]
(a) 31 L (b) 42 L
(c) 41 L (d) 84 L

4. The maximum number of students among whom 1001 pens and 910 pencils can be distributed in such a way that each student gets same number of pens and same number of pencils, is[SSC MTS 2013]
(a) 91 (b) 910
(c) 1001 (d) 1911

5. The total number of integers between 100 and 200, which are divisible by both 9 and 6 is
(a) 5 (b) 6
(c) 7 (d) 8

6. The number nearest to 43582 divisible by each of 25, 50 and 75 is
(a) 43500 (b) 43650
(c) 43600 (d) 43550

7. If the students of 9th class are arranged in rows of 6, 8, 12 and 16, no student is left behind. Then, the possible number of students in the class is [SSC CGL 2013]
(a) 60 (b) 72
(c) 80 (d) 96

8. Three men A, Band C go walking round a circle of 1 km in circumference at the rate of 10, 20 and 40 m/min, respectively. If they all start together and walk in the same direction, when will they again be together at the same place? [RRB (TC/CC) 2009]
(a) After 50 min (b) After 240 min

(c) After 800 min (d) After 100 min

9. If x is a prime number, LCM of x and its successive number would be [RRB NTPC 2016]
(a) x (b) x + 1
(c) x (x + 1) (d) $\frac{x}{x+1}$

10. What is the least number, which when divided by 5, 6, 7 and 8 gives the remainder 3 but is divisible by 9? [SSC CPO 2010, 2009]
(a) 1463 (b) 1573
(c) 1683 (d) 1793

11. The traffic lights at three different road crossings change after 24s, 36s and 54s, respectively. If they all change simultaneously at 10: 15:00 am, then at what time will they again change simultaneously? [SSC CGL 2011]
(a) 10: 16:54 am (b) 10: 18:36 am
(c) 10: 17: 02 am (d) 10: 22: 12 am

12. From a point on a 5 km long circular track, A, Band C started running in the same direction at the same time with the speeds of 2 ½ km/h, 3 km/h and 2 km/h, respectively. Then, on the starting point, all three will meet again after
(a) 30 h (b) 6 h
(c) 10 h (d) 15 h

13. There are three bells which ring at regular intervals of 30, 45 and 60s respectively. If all of them ring together at 1: 00 pm, at what time will they ring together again? [UP Police SI 2017]
(a) 1:03 pm (b) 1: 24 pm
(c) 1:30 pm (d) 1:12 pm

14. Four bells ring at the intervals of 5, 6, 8 and 9s, respectively. All the bells ring simultaneously at some time. They will again ring simultaneously after [MP Police SI 2017]
(a) 12 min (b) 6 min
(c) 24 min (d) 18 min

15. A, Band C start running at the same time and at the same point in the same direction in a circular stadium. A completes a round in 252 s, Bin 308s and C in 198s. After what time will they meet again at the starting point? [SSC Constable 2012]
(a) 26 min 18s (b) 42 min 36s
(c) 45 min (d) 46 min 12s

16. There are 24 peaches, 36 apricots and 60 bananas and they have to be arranged in several rows in such a way that every row contains the same number of fruits of only one type. What is the minimum number of rows required for this arrangement? [SSC (10+2) 2014]
(a) 12 (b) 9
(c) 10 (d) 6

17. Six bells commence ringing together at intervals of 2, 4, 6, 8, 10 and 12s, respectively. In 30 min, how many times do they ring together?[SSC CGL 2014]
(a) 16 (b) 15
(c) 10 (d) 4

18. A, Band C start together from the same point to travel around a circular island of 30 km in circumference. A and Bare travelling in the same direction and C is in the opposite direction. If A travels 5 km, B travels 7 km and C travels 8 km in an hour, then they all come together again after[SSC CGL 2014]
(a) 25 h (b) 30 h
(c) 15 h (d) 20 h

19. Three sets of English, Mathematics and Science books containing 336, 240 and 96 books, respectively have to be stacked in such a way that all the books are stored subject wise and the height of each stack is the same. Total number of stacks will be[SSC CGL 2007]
(a) 14 (b) 21
(c) 22 (d) 48