Operation on Numbers:

1. The difference between the place value and the face value of 6 in the numeral 856973 is:
   A 973   B 6973   C 5994   D none of these

2. The difference between the place value of 7 in the numaral 69758472 is:
   A 0   B 6993   C 699930   D none of these

3. The unit digit in the product $(784 \times 618 \times 917 \times 463)$ is:
   A 2   B 3   C 4   D none of these

4. What is the unit digit in 7^{105} ?
   A 1   B 5   C 7   D 9

5. What is the unit digit in $(4137)^{754}$?
   A 1   B 3   C 7   D 9

6. $9\frac{3}{4} + 7\frac{2}{17} - 9\frac{1}{15} = ?$
   A $7\frac{719}{1020}$ B $9\frac{817}{1020}$ C $9\frac{719}{1020}$ D $7\frac{817}{1020}$

7. $(800 \div 64) \times (1296 \div 36) = ?$.
   A 420   B 460   C 500   D 450

8. $\frac{768 \times 768 \times 768 + 232 \times 232 \times 232}{768 \times 768 - 768 \times 232 + 232 \times 232} = ?$
   A 1000   B 536   C 500   D 268

9. If the number $517 * 324$ is completely divisible by 3, then the smallest whole number in place of $*$ will be :
   A 0   B 1   C 2   D None of these

10. If the number $97215 * 6$ is completely divisible by 11, then the smallest whole number in place of $*$ will be :
    A 3   B 2   C 1   D 5

11. Which one of the following numbers is completely divisible by 45 ?
    A 181560   B 331145   C 202860   D 203550

12. Which one of the following numbers is completely divisible by 99 ?
    A 3572404   B 135792   C 913464   D 114345

13. How many of the following numbers are completely divisible by 132 ?
    264 , 396 , 462 , 792 , 968, 2178, 5184, 6336
    A 4   B 5   C 6   D 7

14. $476 ** 0$ is divisible by both 3 and 11. The non $-$ zero digits in the hundred's and ten's places are respectively:
    A 7 and 4   B 7 and 5   C 8 and 5   D None of these

15. If a and b are odd numbers, then which of the following is even?
    A $a + b$ B $a + b + 1$ C ab   D $ab + 2$

16. Which one of the following cannot be the square of a natural number?
    A 30976   B 75625   C 28561   D 143642

17. What smallest number should be added to 4456 so that the sum is completely divisible by 6?
    A 4   B 3   C 2   D 1

18. Which natural number is nearest to 9217, which is completely divisible by 88?
    A   9152   B   9240   C   9064   D   9184

19. The largest 4 − digit number exactly divisible by 88 is
    A   9944   B   9768   C   9988   D   8888

20. The largest 5 − digit number exactly divisible by 91 is
    A   99921   B   99918   C   99981   D   99971

21. On dividing a number by 68, we get 269 as quotient and 0 as remainder. On dividing the same number by 67, what will be the remainder?
    A   0   B   1   C   2   D   3

22. On dividing a number by 56, we get 29 as remainder. On dividing the same number by 8, what will be the remainder?
    A   4   B   5   C   6   D   7

23. The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and 15 as remainder. What is the smaller number ?
    A   240   B   270   C   295   D   360

24. In a division sum , the remainder is 0. A student mistook the divisor by 12 instead of 21 and obtained 35 as quotient. What is the correct quotient?
    A   0   B   12   C   13   D   20

25. The sum of the two numbers is 12 and their product is 35. What is the sum of the reciprocals of these numbers ?
    A $\dfrac{12}{35}$ B $\dfrac{1}{35}$ C $\dfrac{35}{8}$ D $\dfrac{7}{32}$

26. The difference between a positive proper fraction and its reciprocal 9/20. The fraction is:
    A $\dfrac{3}{5}$ B $\dfrac{3}{10}$ C $\dfrac{4}{5}$ D $\dfrac{5}{4}$

27. The difference of the squares of two consecutive even integers is divisible by which of the following integers?
    A   3   B   4   C   6   D   7

28. If n is a natural number, then $(6n^2 + 6n)$ is always divisible by:
    A   6 only   B   6 and12 both   C   12 both   D   18 only

29. What will be the remainder when $(17)^{200}$ is divisible by 18?
    A   17   B   16   C   1   D   2

30. If x and y are positive integers such that $(3x + 7y)$ is a multiple of 11, then which of the following will be divisible by 11?
    A $4x + 6y$ B $x + y + 4$ C $9x + 4y$ D $4x − 9y$

31. A number when divided successively by 4 and 5 leaves remainders 1 and 4 respectively. When it is successively divided by 5 and 4, then the respective remainder will be
    A   1, 2   B   2, 3   C   3, 2   D   4, 1

32. A number when divided by 296 leaves 75 as remainder. When the same number is divided by 37, the remainder will be:
    A   1   B   2   C   8   D   11

33. The sum of first 45 natural numbers if:
    A   1035   B   1280   C   2070   D   2140

34. $\left(1 - \dfrac{1}{n}\right) + \left(1 - \dfrac{2}{n}\right) + \left(1 - \dfrac{3}{n}\right) + \cdots$ up to n terms $=$?
    A $\dfrac{1}{2}n$ B $\dfrac{1}{2}(n − 1)$ C $\dfrac{1}{2}n(n − 1)$ D   none of these

35. The sum of how many terms of the series $6 + 12 + 18 + 24 + \cdots$ is 1800?

    A   16   B   24   C   20   D   18

36. The sum of all two digit numbers divisible by 5 is

    A   1035   B   1245   C   1230   D   945

37. How many terms are there in the G. P. $3, 6, 12, 24 \ldots 384$?

    A   8   B   9   C   10   D   11

38. $2 + 2^2 + 2^3 + \cdots + 2^9 =$?

    A   2044   B   1022   C   1056   D   none of these

39. $(1^2 + 2^2 + 3^2 + \cdots + 10^2) =$?

    A   330   B   345   C   365   D   385

40. $(11^2 + 12^2 + 13^2 + \cdots + 20^2) =$?

    A   385   B   2485   C   2870   D   3255

H. C. F. and L. C. M Problem

1. Which of the following has most number of divisors?

    A   99   B   101   C   176   D   182

2. $\frac{1095}{1168}$ when expressed in simplest form is:

    A $\frac{13}{16}$ B $\frac{15}{16}$ C $\frac{17}{26}$ D $\frac{25}{26}$

3. The H. C. F. of $4 \times 27 \times 3125$, $8 \times 9 \times 25 \times 7$ and $16 \times 81 \times 5 \times 11 \times 49$ is:

    A   180   B   360   C   540   D   1260

4. L. C. M. of two prime numbers x and y $(x > y)$ is 161. The value of $3y - x$ is:

    A -2 B -1 C   1   D   2

5. The least number which should be added to 2497 so that the sum is exactly divisible by 5, 6, 4 and 3 is:

    A   3   B   13   C   23   D   33

6. The H. C. F. of $\frac{9}{10}, \frac{12}{25}, \frac{18}{35}, \frac{21}{40}$ is.

    A $\frac{3}{5}$ B $\frac{252}{5}$ C $\frac{3}{2800}$ D $\frac{63}{700}$

7. The L. C. M. of $\frac{2}{3}, \frac{3}{5}, \frac{4}{7}, \frac{9}{13}$ is:

    A   36   B $\frac{1}{36}$ C $\frac{1}{1365}$ D $\frac{12}{455}$

8. The G. C. D. of 1.08 , 0.36 and 0.9 is

    A   0.03   B   0.9   C   0.18   D   0.108

9. The L. C. M. of 3, 2.7 and 0.09 is

    A   2.7   B   0.27   C   0.027   D   27

10. H. C. F. of 3240 , 3600 and a third number is 36 and their L. C. M. is $2^4 \times 3^5 \times 5^2 \times 7^2$. The third number is:

    A $2^2 \times 3^5 \times 7^2$ B $2^2 \times 5^3 \times 7^2$ C $2^5 \times 5^2 \times 7^2$ D $2^3 \times 3^5 \times 7^2$

11. Product of two co − prime numbers is 117. Their L. C. M. should be:

    A   1   B   117   C   equal to their HCF   D   Cannot be calculated

12. Three numbers are in the ratio 1: 2: 3 and their H. C. F. is 12. The numbers are:

    A   4 , 8 , 12   B   5, , 10 , 15   C   10 , 20 , 30   D   12 , 24 , 36

13. The sum of two numbers is 528 and their H. C. F. is 33. The number of pairs of numbers satisfying the above conditions is :

     A   4   B 6   C 8   D 12

14. The product of two numbers is 2028 and their H. C. F. is 13. The number of such pairs is

     A   1   B 2   C 3   D 4

15. Three numbers are in the ratio 3: 4: 5 and their L. C. M is 2400. Their H. C. F is :

     A   40   B 80   C 120   D 200

16. The number of number − pair lying between 40 and 100 with their H. C. F. as 15 is:

     A   3   B 4   C 5   D 6

17. The H. C. F. and L. C. M. of two numbers are 84 and 21 respectively. If the ratio of the two number is 1: 4 , then the larger of the two numbers is:

     A   12   B 48   C 84   D 108

18. The greatest possible length which can be used to measure exactly the lengths 7m, 3m 85cm, 12m 95cm is:

     A   15 cm   B 25 cm   C 35 cm   D 42 cm

19. Three different containers contain 496 liters, 403 liters and 713 liters of mixtures of milk and water respectively. What biggest measure can measure all the different quantities exactly?

     A   1 litre   B 7 litres   C 31 litres   D 41 litres

20. The maximum number of students among student them 1001 pens and 910 pencils can be distributed in such a way that each student gets the same number of pens and same number of pencils is:

     A   91   B 910   C 1001   D 1911

21. A Rectangular courtyard 3.78 meters long and 5.25 meters wide is to be paved exactly with square tiles; all of the same size. What is the largest size of the tile which could be used for the purpose?

     A   14cms   B 21 cms   C 42 cms   D none of these

22. Let N be the greatest number that will divide 1305, 4665 and 6905, leaving the same remainder in each case. Then sum of the digits in N is:

     A   4   B 5   C 6   D 8

23. The smallest fraction, which each of $\frac{6}{7}, \frac{5}{14}, \frac{10}{21}$ will divide exactly is :

     A $\frac{30}{7}$ B $\frac{30}{98}$ C $\frac{60}{147}$ D $\frac{50}{294}$

24. The least number of five digits which is exactly divisible by 12, 15 and 18 is:

     A   10010   B 10015   C 10020   D 10080

25. The greatest number of four digits which is exactly divisible by 15, 25,40 and 75 is:

     A   9000   B 9400   C 9600   D 9800

26. The smallest which when diminished by 7, is divisible 12, 16, 18, 21 and 28 is:

     A   1008   B 1015   C 1022   D 1032

27. The least number, which when divide by 12, 15, 20 and 54 leaves in each case remainder of 8, is:

     A   504   B 536   C 544   D 548

28. The least multiple of 7, which leaves remainder of 4, when divided by 6, 9, 15 and 18 is:

     A   74   B 94   C 184   D 364

29. The least number, which when divided by 48, 60, 72, 108 and 140 leaves 38, 50, 62, 98 and 130 as a remainders respectively is:

     A   11115   B 15110   C 15120   D 15210

30. find the least multiple of 23 which when divide by 18,21 and 24 lkeaves the remainder 7,10 and 13 respectively:

    A   3002   **B** **3013**   C   3024   D   3036

31. The least number which when divided by 5, 6, 7 and 8 leaves the remainder 3, but when divided by 9 leaves no remainder, is:

    A   1677   **B** **1683**   C   2523   D   3363

32. Six bells commence tolling together and toll at intervals of 2, 4, 6, 8, 10 and 12 seconds repectively. In 30 minutes, how many times do they toll together?

    A   4   B   10   C   15   **D** **16**

33. Four different electronic devices make a beep after every 30 minutes, 1 hour, $1\frac{1}{2}$ hour and 1 hour 45 minutes respectively. All the device beeped together at 12 noon. They will again beep together at:

    A   12 midnight   B   3 A. M.   C   6 A. M.   **D** **9 A. M.**

34. 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 seconds, B in 308 seconds and C in 198 seconds , all starting at the same point. After what time will they meet again at the starting point?

    A   26 min. 18 sec   B   42 min. 36 sec.   C   45 min.   **D** **46 min. 12 sec.**