1. Find the last digit/unit digit of
(i) $245^{86}\times3696^{239}$
(ii) $2687^{238}+23^{264}$
(iii) $81a52^{68a48}$
(iv) Product of first 10 prime numbers
(v) Find the unit digit of (0!+1!+2!+.....+368!)

2. Find the last 2 digits of
(i) 4586^2
(ii) 12458×3652

3. Find the number of factors, total prime factors and distinct prime factors of
(i)168
(ii) N = p^3q^6 , where p and q are prime numbers

4. How many factors of N are multiple of 10 if N = $20\times3^4\times125$?

5. Find the term in
(i) 7,13,19,.....,t_{20}
(ii) 125, $25\sqrt{5}$,25, $5\sqrt{5}$,... t_{17}

6. If sum of first 3 terms of an AP is equal to sum of first 4 terms then find sum of first 7 terms ?

7. If the sum of the first n terms of an arithmetic progression in 2400 and the sum of next n terms as 7200, then find the ratio of first term and common difference.
(A) 3 : 2
(B) 2 : 1
(C) 1 : 2
(D) 2 : 3

8. Find the average of all two-digit numbers that give a remainder 4 when they are divided by 5?

9. If a+b = 25, then find maximum value of (a×b)
(i) a,b > 0
(ii) a & b are natural numbers

10. If 5th term of a GP is 10 then find the product of the first 9 terms and also find product of 2nd term and 8th terms?

11. Find the GCD & LCM of the following
(i) (12,44)
(ii) (25,9)
(iii) $\left(\frac{4}{7},\frac{8}{21}\right)$

12. When 231 is divided by n remainder is 11 then which of the following could be the value of n?(Mark all the correct answer)
(A)44 (B)10 (C)22
(D)30 (E)4 (F) 55

13. When 489 and 604 are divided by n remainders are 9 & 4 respectively then find maximum value of n?

14. (i) Find the sum of first 13 odd natural numbers
(ii) 1+3+5+.....+k = 441
(iii) 2+4+6+.....+22 =
(iv) 2+4+6+.....+k = 600

15. Which of the following could be the average of 20 distinct natural numbers ?(Mark all the correct answers)
(A)12
(B)13.6
(C)7
(D)43.82
(E)89.35
(F) 81.37

16. If a, b & c are positive real numbers and a+b+c = 21

Quantity A	Quantity B
Maximum value of (a+1)×(b+2)×(c+3)	721

17. Find the largest 3 digit number which when divided by 6,9,10 & 15 will leave a remainder 2?

18. Find the number which when divided by 8 leaves remainder 6, when divided by 7 leaves remainder 5, when divided by 6 leaves remainder 4, when divided by 5 leaves remainder 3 ?(Mark all the correct answers)
(A) 118
(B)418
(C)838
(D)1678
(E) 2008

19. Find the greatest number that will divide 43,91 & 183 so as to leave the same remainder in each case?

20. HCF of 2 numbers is 14 and their sum is 210. How many such pairs are possible?

21. ABCD is a square with side 10cm. By joining the mid points of this square again a square is formed and this process is repeated till infinite. Find the sum of area of all the squares?

22. There are 2 Arithmetic progressions : 3,7,11,.....219 & 1,7,13,..... 241. Find the number of common terms in both the AP?

23. A ={ n,n+1,n+2,n+3,n+4,n+5} for any natural number n ≤ 98. For how many values of n A contains at least one multiple of 10?

24. $t_n=t_{(n-1)}-t_{(n-2)}+t_{(n-3)}$,for $n\geq4$, then find the sum of first 102 terms of the given series? $t_1=1,t_2=-2,t_3=3$

25. A = {7,12,17,22,.....,182} . Maximum how many terms from A can be selected such that sum of any 2 terms is less than 189?

Numbers-2

1. 0,0,6,0,4	2. 96, 16	3. (i) 16,5,3 (ii) 28, 9,2	4. 40	5. 121,1/3125
6. 0	7. C	8. 56.5	9. 156.25,1256	10. 10^{9},100
11. (4,132) (1,225), $\left(\frac{4}{21},\frac{8}{7}\right)$	12.A,C,F	13.120	14.169,41, 132,48	15.A,B,E
16.A	17. 992	18. C,D	19.4	20. 4
21. 200	22. 20	23. 58	24.199	25.18