Sagar Institute of Science & Technology Gandhi Nagar Bhopal
Quantitative Aptitude : Progression

1. How many terms are there is the AP 20, 25, 30,…. 130 ?
   a. 21
   b. 22
   c. 23
   d. 24
2. Find the first term of an AP whose 8^{th} and 12^{th} terms are respectively 39 & 59.
   a. 3
   b. 4
   c. 5
   d. 6
3. Which term of an AP 1,3,5…. Is 55 ?
   a. 27^{th}
   b. 26^{th}
   c. 25^{th}
   d. 28^{th}
4. The least value of n for which the sum of the series 5 + 8 + 11 …. N terms is not less than 670 is
   a. 20
   b. 19
   c. 21
   d. 22
5. A man receives $60 for the first week and $3 more each week than the preceding week. How much does he earn by the 20^{th} week ?
   a. $1770
   b. $1620
   c. $1890
   d. $1790
6. Find the value of the expression 1 – 4 + 5 – 8 ….. upto 50 terms.
   a. -50
   b. -75
   c. -150
   d. 75
7. Find the sum of all odd number lying between 100 and 200.
   a. 7500
   b. 2450
   c. 2550
   d. 2650
8. Find the sum of all integers of 3 digits that are divisible by 7.
   a. 69336
   b. 71336
   c. 70336
   d. 72336
9. What will be the sum to n terms of the series 8 + 88 + 888 ….. ?
   a. $8(10^n – 9n)/81$
   b. $8(10^{n+1} – 10 – 9n)/81$
   c. $8(10^{n-1} – 10)$
   d. $8(10^{n+1} – 10)$
10. Find the sum to n terms of the series 1.2.3 + 2.3.4 + 3.4.5 …..
    a. (n+1)(n+2)(n+3)/3
    b. n(n+1)(2n+2)(n+2)/4
    c. n(n+1)(n+2)
    d. n(n+1)(n+2)(n+3)/4
11. if the sum of n terms of a series is given by (n+8), then its second term will be given by
    a. 10
    b. 9
    c. 8
    d. 1
12. The sum of first 20 and first 50 terms of an AP is 420 & 2550. Find the eleventh term of a GP whose first term is the same as the AP and the common ratio of the GP is equal to the common difference
    a. 560
    b. 3072
    c. 1024
    d. 2048

13. Bhumi's started his career in Learn Eureka with a salary of $800 in the first month. She has joined in the scale of 800-40-1600. After how many years will her savings be $64800 ?
    a. 8 years
    b. 7 years
    c. 6 years
    d. Can not be determined
14. Kushal Drew a rectangular grid of 529 cells arranged in 23 rows and 23 columns and filled each cell with the number. The numbers with which he filled each cell was such that the numbers of each Row taken from left to right formed an arithmetic series and the numbers of each column taken from top to bottom also formed an arithmetic series. The 7th and 17th numbers of the fifth row were 47 and 63 respectively. The 7th and the 17th terms of the 15th row were 53 and 77 respectively. What is the sum of all the numbers in the Grid ?
    a. 32798
    b. 65596
    c. 52900
    d. None of these
15. An arithmetic progression P consists of n terms. From the progression 3 different progressions P1 P2 and P3 are created such that P1 is obtained by 1st 4th 7^{th} ….. Terms, P2 has the 2nd 5th 8^{th}… terms of P and P3 has the 3rd 6th 9^{th}…. terms of P. it is found that of P1 P2 and P3, two progressions have the property that there average is itself a term of the original progression P which of the following can be a possible value of n
    a. 20
    b. 26
    c. 36
    d. Both a & b
16. Jatin is agreed to work at the rate of one rupee on the first day, two rupees on the second, four rupees on the third day & so on. How much will he get if he starts his work on 1^{st} Feb & finishes on the 20^{th} of Feb ?
    a. 2^{20}
    b. $2^{19} - 1$
    c. $2^{20} - 1$
    d. 2^{19}
17. If the 5^{th} term of a GP is 81 and first term is 16. What will be the 4^{th} term of GP ?
    a. 36
    b. 54
    c. 24
    d. 18
18. How many terms are there in the GP 5,20,80,320…. 20480 ?
    a. 5
    b. 6
    c. 7
    d. 8
19. The sum of the first & third terms of a GP is 20 & the sum of first 3 terms is 26. Find the progression.
    a. 2,6,18….
    b. 18,6,2….
    c. Both
    d. None

20. How many terms of the series 1 + 3 + 5 + …. Amount to 123454321 ?
- **a. 11101**
- **b. 11100**
- **c. 11111**
- **d. 10101**

21. An equilateral triangle is drawn by joining the midpoints of the side of another equilateral triangle. A third equilateral triangle is drawn inside the second one joining the midpoints of the sides of the second equilateral triangle and the process continuous infinitely. find the sum of the perimeters of all the equilateral triangle if the side of the largest equilateral triangle is 24 unit.
- **a. 288**
- **b. 36**
- **c. 72**
- **d. 144**

22. The sum of the first two terms of an infinite geometric series is 18. Also each term of the series is 7 times the sum of all the terms of that follow. Find the first term and the common ratio of the series respectively
- a. **16, 1/8**
- b. **15, 1/5**
- c. **12, 1/2**
- d. **8, 1/16**

23. A GP consists of 500 terms. Sum of the terms occupying the odd places is P1 and the sum of the terms occupying the even places is P2. Find the common ratio.
- a. **P2/P1**
- b. **P1/P2**
- c. **P2 + P1/P2**
- d. **P2 + P2/P1**

24. The sum of the first 10 terms of the geometric progression is S1 and the sum of the next 10 terms is S2 (11^{th} to 20^{th}). Find the common ratio
- a. $(S1/S2)^{1/10}$
- b. $-(S1/S2)^{1/10}$
- c. $\pm(S2/S1)^{1/10}$
- d. $(S1/S2)^{1/5}$

25. A Square has a side of 40 cm. Another square is formed by joining the midpoints of the sides of the given square and this process is repeated infinitely. find the perimeter of all the squares thus formed
- **a. $160(1+\sqrt{2})$**
- **b. $160(1-\sqrt{2})$**
- **c. $160(2+\sqrt{2})$**
- **d. $160(2-\sqrt{2})$**