Chapter-6
Sequence and Series (AP GP)

1. Three numbers are in AP and their sum is 21. If 1, 5, 15 are added to them respectively, they form a G.P. The numbers are
    (a) 5, 7, 9   (b) 9, 5, 7   (c) 7, 5, 9   (d) none of these.

2. The sum of three numbers in G.P. is 70. If the two extremes by multiplied each by 4 and the mean by 5, the products are in AP. The numbers are
    (a) 12, 18, 40   (b) 10, 20, 40   (c) 40, 20, 15   (d) none of these

3. The first and the last term of an AP are −4 and 146. The sum of the terms is 7171. The number of terms is
    (a) 101   (b) 100   (c) 99   (d) none of these

4. The first term of an A.P. is 100 and the sum of whose first 6 terms is 5 times the sum of the next 6 terms, then the c.d. is −
    (a) −10   (b) 10   (c) 5   (d) None of these

5. The sum of n terms of an A.P. is $3n^2 + n$; then its pth term is
    (a) 6P+2   (b) 6P−2   (c) 6P−1   (d) None of these

6. if three AM's between 3 and 11, they are
    (a) 4, 6, 8   (b) 3, 5, 7   (c) 5, 7, 9   (d) 11/2, 15/2, 19/2

7. The value of K, for which the terms 7K +3, 4K-5, 2K+10 are in A.P., is
    (a) 13   (b) - 23   (c) 13   (d) 23

8. Find the three numbers in G.P, whose sum is 19 and product is 216.
    (a) 9,6,4 or 4,6,9   (b) 9,6,3 or 3,6,9
    (c) 9,3,1 or 1,3,9   (d) 9,3, -1 or -1,3,9

9. The nth term of the sequence -1, 2, -4, 8,.is
    (a) $(-1)^n 2^{n-1}$ (b) 2^{n-1} (c) 2^n (d) none of these

10. The sum of the first two terms of a GP is 5/3 and the sum of infinity of the series is 3. The common ratio is
    (a) 1/3   (b) 2/3   (c) -1/3   (d) none of these

11. The sum of the infinite series 1+2/3+4/9+.........is
    (a) 1/3   (b) 3   (c) 2/3   (d) none of these

12. Which term of the AP 64,60,56,52....is Zero

(a) 16   (b) 17   (c) 15   (d) 14

13. If a, b, c are in AP and x, y, z are in GP , then the value of $x^{(b-c)} \cdot y^{(c-a)} \cdot z^{(a-b)}$ is

(a) 1   (b) 0   (c) b (c-a)   (d) none

14. The sum of the first two terms of an infinite geometric series is 15 and each term is equal to the sum of all the terms following it; then the sum of the series is

(a) 20   (b) 15   (c) 25   (d) None

15. Find the sum to n terms of the series : 7+77+777+............. to n terms:

(a) $\frac{7}{9}(10^{n+1} - 10) - \frac{7n}{9}$ (b) $\frac{7}{9}(10^{n+1} - 10) + \frac{7n}{9}$

(c) $\frac{7}{81}(10^{n+1} - 10) - \frac{7n}{9}$ (d) $\frac{7}{81}(10^{n+1} - 10) + \frac{7n}{9}$

16. If the sum of n terms of an A.P. is $(3n^2 - n)$ and its common difference is 6, then its third term is:

(a) 10   (b) 12   (c) 14   (d) 16

17. Insert 4 A.M.'s between 3 and 18 :

(a) 12,15,9,6   (b) 6,9,12,15   (c) 9,6,12,15   (d) 15,12,9,6

18. $\sum n^2$ defines:

(a) $\frac{n(n+1)(2n+1)}{6}$ (b) $\frac{n(n+1)}{2}$ (c) $\left[\frac{n(n+1)}{2}\right]^2$ (d) None of these

19. If x, y and z are the terms in G.P , then the term x^2+y^2 , xy + yz , y^2+z^2 are in

(a) AP   (b) GP   (c) HP

(d) none of the above

20. In a GP .if fourth term is 3 then the product of first seven terms is

(a) 3^5 (b) 3^7 (c) 3^6 (d) 3^8

21. In a G.P. If the third term of a GP is $\frac{2}{3}$ and 6th term is $\frac{2}{81}$,then the first term is

(a) 6   (b) 1/3   (c) 9   (d) 2

22. Sum upto infinity series $\frac{1}{2}+\frac{1}{3^2}+\frac{1}{2^3}+\frac{1}{3^4}+\frac{1}{2^5}+$ ....

(a) 19/24   (b) 24/19   (c) 5/24   (d) none of these

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23. The second term of a G P is 24 and the fifth term is 81. The series is

    (a) 16, 36, 24, 54.....   (b) 24, 36, 53... ...   (c) 16, 24, 36, 54,......   (d) none

24. The sum of progression (a+b), a, (a−b)........n term is

    (a) $\frac{n}{2}$ [2a+(n−1)b]   (b) $\frac{n}{2}$ [2a+(3−n)b]   (c) $\frac{n}{2}$ [2a+(3−n)]   (d) $\frac{n}{2}$ [2a+ (n−1)]

25. The series 1 to $10^{-1} + 10^{-2} + 10^{-3}$ .... to ∞ is

    (a) 9/10   (b) 1/10   (c) 10/9   (d) none

26. Find the sum of first twenty-five terms of A.P. series whose nth term is $\left(\frac{n}{5}+2\right)$

    (a) 105   (b) 115   (c) 125   (d) 135

27. The sum of the first 3 terms in an AP is 18 and that of the last 3 is 28. If the AP has 13 terms, what is the sum of the middle three terms?

    (a) 23   (b) 18   (c) 19   (d) None

28. The ratio of sum of first n natural numbers to that of sum of cubes of first n natural numbers is

    (a) 3:16   (b) n(n+1) / 2   (c) 2 / n(n+1)   (d) None

29. If the sum of 'terms of an Arithmetic Progression is $2n^2$, the fifth term is.

    (a) 20   (b) 50   (c) 18   (d) 25

30. Sum lying from 100 to 300 which is divisible by 4 and 5 is

    (a) 2000   (b) 2100   (c) 2200   (d) 2300

31. Sum of x terms of two AP's are in the ratio (3x + 5) : (5x + 3) then ratio of their 10th term is

    (a) 31:49   (b) 30:49   (c) 28:49   (d) None of these

31. If 5th term of G.P. is 32 and 3rd term of G.P. is 8 then 6th term of G.P. is

    (a) 4   (b) 16   (c) 32   (d) 64

32. Which term of The sequence 2, 4, 8, 16 .... is 2048 ?

    (a) 9   (b) 10   (c) 11   (d) None of these

33. The sum of an AP, whose first is -4 and last term is 146 is 7171. Find the value of n

    (a) 99   (b) 100   (c) 101   (d) 102

34. In a geometric progression , the second term is 12 and sixth term is 192. Find 11th term.

    (a) 3,072   (b) 1,536   (c) 12,288   (d) 6,144

35. The first and last terms of an arithmetic progression are 5 and 905. Sum of the terms is 45,955. The number of terms is

    (a) 99   (b) 100   (c) 101   (d) 102

36. The sum of first eight terms of geometric progression is five times the sum of the first four terms. The common ratio is

(a) $\sqrt{3}$ (b) $\sqrt{2}$ (c) 4   (d) 2

37. If the sum of n terms of an AP is $(3n^2-n)$ and its common difference is 6, then its term is

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

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38. The first and fifth term of an A.P. of 40 terms are -29 and -15 respectively. Find the sum of all positive terms of this A.P.

(a) 1605   (b) 1705   (c) 1805   (d) None of these

39. If the common difference of an AP equals to the first term, then the ratio of its mth term and nth term is:

(a) n:m   (b) m: n   (c) $m^2:n^2$ (d) None of these

40. Find the value of $1 + 2 + 3 + ———————— + 105$

(a) 5000   (b) 5560   (c) 5565   (d) None of these

41. In a G. P sixth term is 729 and the common ratio is 3, then the first term of G.P is

(a) 2   (b) 3   (c) 4   (d) 7

ANSWER KEYS

1	(a)	2	(b)	3	(a)	4	(a)
5	(b)	6	(c)	7	(b)	8	(a)
9	(a)	10	(b)	11	(b)	12	(b)
13	(a)	14	(a)	15	(c)	16	(c)
17	(b)	18	(a)	19	(b)	20	(b)
21	(a)	22	(a)	23	(c)	24	(b)
25	(c)	26	(b)	27	(a)	28	(c)
29	(c)	30	(c)	31	(d)	32	(c)
33	(c)	34	(d)	35	(c)	36	(b)
37	(b)	38	(b)	39	(b)	40	(c)
41	(b)						

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