Chapter 5

ASSIGNMENT

OBJECTIVE EXCERCISE - 5.1

1. p^{th} term of the series $\left(3-\frac{1}{n}\right)+\left(3+\frac{2}{n}\right)+\left(3-\frac{3}{n}\right)+$ ..... will be

(A) $3+\frac{p}{n}$ (B) $3-\frac{p}{n}$ (C) $3+\frac{n}{p}$ (D) $3-\frac{n}{p}$

2. 8^{th} term of the series $2\sqrt{2}+\sqrt{2}+0+$ ..... will be

(A) $-5\sqrt{2}$ (B) $5\sqrt{2}$ (C) $10\sqrt{2}$ (D) $-10\sqrt{2}$

3. If 9^{th} term of an A.P. be zero then the ratio of its 29^{th} and 19^{th} term is

(A) 1 : 2 (B) 2 : 1 (C) 1 : 3 (D) 3 : 1

4. Which term of the sequence 3,8,13,18,..... is 498

(A) 95^{th} (B) 100^{th} (C) 102^{th} (D) 101^{th}

5. Which of the following sequence is an A.P.

(A) f(n) = ab + b $n \in N$ (B) $f(n) = kr^n, n \in N$

(C) $f(n) = (an + b)kr^n, n \in N$ (D) $f(n)=\frac{1}{a\left(n+\frac{b}{n}\right)}, n \in N$

6. If the n^{th} term of an A.P. be (2n - 1) then the sum of its firs n terms will be

(A) $n^2 - 1$ (B) $(2n - 1)^2$ (C) n^2 (D) $n^2 + 1$

7. The interior angles of polygon are in A.P. if the smallest angles be 120^0 and the common difference be 5, then the number of sides is

(A) 8 (B) 10 (C) 9 (D) 6

8. In the first, second and last terms of an A.P. be a,b, 2a respectively, then its sum will

(A) $\frac{ab}{-a+b}$ (B) $\frac{ab}{2(b-a)}$ (C) $\frac{3ab}{2(b-a)}$ (D) $\frac{3ab}{4(b-a)}$

SUBJECTIVE EXCERCISE - 5.2

1. Is 51 a term of the A.P. 5, 8, 11, 14, ... ?

2. Find the common difference of an A.P. whose first term is 100 and the sum of whose first six terms is five times the sum of the next six terms.

3. Find three number in A.P. whose sum is 21 and their product is 336.

4. A student purchased a pen for Rs. 100. At the end of 8 years, it was valued at Rs. 20. Assuming the yearly depreciation is constant amount, find the annual depreciation./

5. The fourth term of an A.P. is equal to three times the first term and the seventh term exceeds twice the third by one. Find the first term and the common difference.

6. Which term of the sequence $17, 16\frac{1}{5}, 15\frac{2}{5}, 14\frac{3}{5}$..... is the first negative term.

7. If $S_n = n^2p$ and $S_m = m^2p$ $(m \neq n)$ in an A.P. Prove that $S_p = p^3$.

8. Find the sum of all the three digit numbers which leave remainder 2 when divided by 5.

9. Find the sum of all two digit odd positive numbers

10. Find the 10^{th} term from end of the A.P. 4,9,14,....., 254.

11. 200 logs are stacked in the following manner: 20 logs in the bottom row, 19 in the next row, 18 in the row next to it and so on. In how many rows the 200 logs are placed and how many logs are in the top row ?

12. The sum of the first n term of an A.P. is given by $S_n = 3n^2 - 4n$. Determine the A.P. and its 12^{th} term.

[CBSE - 2004]

13. Find the sum of the first 25 terms of an A.P. whose n^{th} term is given by $t_n = 2 - 3n$

[CBSE - 2004]

14. Find the number of terms of A.P. 54, 54, 48..... so that their sum is 513.

[CBSE - 2005]

15. In an A.P., the sum of first n terms is $\frac{3n^2}{2} + \frac{5n}{2}$ Find its 25^{th} term.

[CBSE - 2006]

16. Which term of the arithmetic progression 8, 14 20, 26, ... will be 72 more than its 41^{st} term ?

[CBSE - 2006]

17. The first term, common difference and last term of an A.P. are 12, 6 and 252 respectively. Find the sum of all terms of this A.P.

[CBSE - 2007]

18. Write the next term of the $\sqrt{8}, \sqrt{18}, \sqrt{32}$, ...

[CBSE - 2008]

19. The sum of the 4^{th} and 8^{th} terms of an A.P. is 24 and the sum of the 6^{th} and 10^{th} terms is 44. Find the first three terms of the A.P.

[CBSE - 2008]