Name: ....
Reg,No : ....

SSLC Unit Test Series 2018
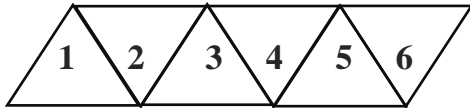**Mathematics (English)**
Chapter 01
(Maximum score : 80)

CODE

MTS C01

Time : 2.30 Hours

1. Write the sequence obtained by adding two adjacent consecutive terms in counting numbers. Write Its algebraic expression. **(2)**

2. Ammu made triangles using match sticks as shown in the figure. To make 51 such triangles how may Match sticks are needed? **(3)**

3. Consider an arithmetic sequence with common difference 6 and 7th term is 52.
   (a) Find the 15th term of arithmetic sequence. **(1)**
   (b) Is it possible to get a difference of 100 between any two terms of this sequence? **(3)**

4. Consider an arithmetic sequence whose 7th term is 34 and 15th term is 66.
   (a) Find the common difference **(2)**
   (b) Find the 20th term. **(2)**

5. Consider an arithmetic sequence, $\dfrac{17}{7}$, $\dfrac{20}{7}$, $\dfrac{23}{7}$
   (a) Write the algebraic expression of the sequence. **(1)**
   (b) write the sequence of counting numbers in the above mentioned sequence. Is this New sequence Arithmetic? **(2)**

6. x_n is the nth term of an arithmetic sequence and x_a, x_b, x_c …….. are in arithmetic sequence then prove That a,b and c are in A.P **(3)**

7. Prove that the arithmetic sequence 7,11,15…… Doesnot contain perfect squares. **(3)**

8. Find the 20th term of an arithmetic sequence if its 6th term is 14 and 14th term is 6. **(3)**

9. Let the algebraic expression of an arithmetic sequence be 5n + b and if there are no perfect square In this sequence, Find the counting numbers less than five that can be the value of b. **(4)**

10. Prove that any term of the arithmetic sequence 7,11,15…… will not be a term of the same arithmetic Sequence. **(3)**

12. Find the 112th term of the arithmetic sequence 5,12,19…… **(2)**

13. Consider two arithmetic sequence 11,19,27…. And 50,55,60…. Is there any common term foe these Two sequences at the same position? If yes, Find the position and the terms. **(4)**

14. Consider the arithmetic sequence -74, -68, -62………
    (a) How many negative numbers are there in the sequence? **(3)**
    (b) Find the first positive integer of this sequence. **(2)**

15. $2x+1$, $4x-1$, $5x+1$ …… are in arithmetic progression.
    (a) Find the value of x. **(2)**
    (b) Write the algebraic expression of the sequence. **(1)**

MTSC01

(c)Find the position of 195 in the sequence. **(2)**

16.The angles in a nine sided polygon are in arithmetic sequence.Is 100° the smallest angle of the
Polygon? Justify your answer. **(5)**

17.Prove that the sum of first n odd numbers is n^2. **(4)**

18.Find the sum of first 25 terms of the arithmetic progression 5,8,11……….. **(4)**

19.Consider an arithmetic sequence whose 6th term is 40 and 9th term is 58
(a)Find the 25th term of the sequence?
(b)Find the sum of first 25 terms.
(c)Find the sum of first n terms of the sequence. **(5)**

20.(a)Find the sum of first 20 counting numbers. **(2)**
(b)Consider an arithmetic sequence whose common difference is 7 and sum of first 20 terms is
1530. Write the algebraic expression of the sequence. **(2)**

21. Consider an arithmetic sequence whose sum of first 10 terms is 250 and sum of first 16 terms is 592.
(a)Write the algebraic expression of the sequence. **(3)**
(b)Write the algebraic expression of sum of the sequence. **(2)**

22.(a)Sum of first (n+1) terms of an arithmetic sequence is pn^2+qn+r. then show that p+r=q **(3)**
(b)Which of the following be the sum of first (n+1) term of an arithmetic sequence? **(2)**
(i) $2n^2+3n+4$ ii) $2n^2+3n+1$

****

MTSC01