## WANDOOR GANITHAM - CLASS X - UNIT TEST 2021 - 22

**101AE**          **ARITHMETIC SEQUENCES**          Total Score : 40
                                                      Time : 90minutes

**For questions from 1 to 2 carries one score each** **( Choose the correct answer from the bracket )**

1. Fifth term of an arithmetic sequence is 11 . What is the sum of first 9 terms of this sequence ?

$$(  55 , 99 , 110 , 200   )$$

2. The sum of the first $n$ terms of an arithmetic sequence is $3 n^2 + 2n$ . What is its first term ?

$$(  2 , 3 , 4 , 5  )$$

**For questions from 3 to 5 carries two score each**

3.
   a) Write an arithmetic sequence with first term 9 and common difference 8 .

   b) What is the 16$^{th}$ term of this sequence ?

4) 4$^{th}$ term of an arithmetic sequence is 17 and its 12$^{th}$ term is 49 .

   a) What is its common difference ?

   b) What is its 8$^{th}$ term ?

5. The sum of the first and the 20$^{th}$ terms of an arithmetic sequence is 65 .

   a) What is the sum of its second and the 19$^{th}$ terms ?

   b) What is the sum of the first 20 terms of this sequence ?

**For questions from 6 to 9 carries three score each**

6) Consider the arithmetic sequence 9 , 16 , 23 , . . .

   a ) What is its common difference ?

   b) Write the algebraic form of the sequence .

   c) What is the remainder when each term of this sequence is divided by the common difference ?

**7.** The sum of the first 3 terms of an arithmetic sequence is 15  and the sum of the first 7

   terms is  63

   a ) What is its second term  ?

   b) What is its $4^{th}$ term ?

   c) What is its common difference    ?

**8.** Algebraic form of an arithmetic sequence is   $6 n + 2$   .

   a ) What is its common difference    ?

   b)   What is the sum of the first $n$ terms of this sequence  ?

**9.** Compute the following sums .

   a)  1  +  2  +  3  +  4  +  5  + . . . + 20

   b)  2  + 4   + 6   +  8  + 10 + . . . + 40

   c)  5  + 7  +  9  +  11 + 13 + . . .  +  43

   d)  8  +  13 + 18 + 23 + 28  + . . . + 103

**10)** Consider the sequence of two digit natural numbers which leave remainder 1 on division

   by  5 .

   a) What is its common difference    ?

   b) What is the smallest number in this sequence  ?

   c)   What is the largest number in this sequence  ?

   d) How many numbers are there in this sequence  ?

**11.**
   a) What is the common difference of the arithmetic sequence   9 , 12 , 15 , . . .   ?

   b) What is the common difference of the arithmetic sequence    7 ,  10 ,  13 , . . .   ?

   c)  Calculate the difference between the sums of the first 20 terms of the above sequences .

**12. Look at the number pattern given below.**

1

2   3

4   5   6

7   8   9   10

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a) Write down the next two more lines of this pattern ?

b) What is the last number in the 14<sup>th</sup> line ?

c) What is the first number in the 15<sup>th</sup> line ?

d) How many numbers are there in the 15<sup>th</sup> line ?

e) What is the last number in the 15<sup>th</sup> line ?

**13. Fill up the empty cells of the given square such that the numbers in each row , the**

   **column and both diagonals form arithmetic sequences .**

| 5 | | 25 |
|---|---|---|
| | | |
| 13 | | |