

# 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  $3n^2 + 2n$  . 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<sup>th</sup> term of this sequence ?

4) 4<sup>th</sup> term of an arithmetic sequence is 17 and its 12<sup>th</sup> term is 49 .

a) What is its common difference ?

b) What is its 8<sup>th</sup> term ?

5. The sum of the first and the 20<sup>th</sup> terms of an arithmetic sequence is 65 .

a) What is the sum of its second and the 19<sup>th</sup> 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<sup>th</sup> term ?
- c) What is its common difference ?

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

- a) What is its common difference ?
- b) What is the sum of the first  $n$  terms of this sequence ?

For questions from 9 to 11 carries four score each

9. Compute the following sums .

- a)  $1 + 2 + 3 + 4 + 5 + \dots + 20$
- b)  $2 + 4 + 6 + 8 + 10 + \dots + 40$
- c)  $5 + 7 + 9 + 11 + 13 + \dots + 43$
- d)  $8 + 13 + 18 + 23 + 28 + \dots + 103$

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  $9, 12, 15, \dots$  ?
- b) What is the common difference of the arithmetic sequence  $7, 10, 13, \dots$  ?
- c) Calculate the difference between the sums of the first 20 terms of the above sequences .

**Question 12 carries five score**

12. Look at the number pattern given below.

1  
2 3  
4 5 6  
7 8 9 10  
.....  
.....

- 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 ?

**Question 13 carries six score**

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		