

## **ST. LAWRENCE HIGH SCHOOL** A JESUIT CHRISTIAN MINORITY INSTITUTION



## Worksheet-4

## **SUBJECT – MATHEMATICS**

1<sup>st</sup> term

**Chapter: Sequence & Series** 

**Topic: Arithmetic Progression (AP)** 

Choose the correct option

1. The  $6^{th}$  term of the sequence {1, 4, 9, 16, ... } is –

- a) 25
- b) 36
- c) 32
- d) 64

2. The 5<sup>th</sup> term of the sequence  $\{3, 1, \frac{1}{3}, \frac{1}{9}, \ldots\}$  is –

a)  $\frac{1}{27}$ b)  $\frac{1}{15}$ c)  $\frac{1}{81}$ d)  $\frac{1}{12}$ 

3. The  $8^{th}$  term of the sequence {-8, -6, -4, -2, ...} is –

- a) 2
- **b)** 4
- c) 6
- d) 8

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(1 X 15= 15)

- 4. The n<sup>th</sup> term of the sequence  $\{1, \frac{1}{8}, \frac{1}{27}, \frac{1}{64}, ...\}$  is a)  $\frac{1}{n}$  b)  $\frac{1}{n^2}$  c)  $\frac{1}{n^3}$  d)  $\frac{1}{n^{3}-1}$
- 5. The 11<sup>th</sup> term of the sequence  $\left\{\frac{1}{2}, \frac{1}{3}, \frac{1}{5}, \frac{1}{8}, \frac{1}{12}, \ldots\right\}$  is
  - a)  $\frac{1}{18}$ b)  $\frac{1}{16}$ c)  $\frac{1}{57}$ d)  $\frac{1}{59}$
- 6. For the sequence  $\{u_n\}$  if  $u_1 = -2$  and  $u_{r+1} = u_r + r + 2$ , for all natural numbers r , the 10<sup>th</sup> term of the sequence is
  - a) 36
  - b) 63
  - c) 62
  - d) 39
- 7. The least value of n , for which the  $n^{th}$  term  $a_n$  of the sequence given by  $a_n$  =  $n^3$  -n^2-5n-3 is non-negative
  - a) 1
  - **b**) 2
  - c) 3
  - d) 4
- 8. Three numbers are in A.P. and their sum is 21, then the middle number is
  - a) 5
  - **b**) 6
  - c) 6.5
  - d) 7

9. Five numbers are in A.P. and their sum is 50, then its 3<sup>rd</sup> number will be

- a) 2
- b) 5
- c) 10
- d) 15

10. The base of a right angled triangle is 12cm. The three sides are in A.P. Then the length of the hypotenuse –

- a) Only 15cm
- b) Only 20cm
- c) Either a) or b) is true.
- d) Only 13cm.

11. The sums of  $p^{th}$  terms of two A.P.'s are in the ratio (2p+1): (2p-1). Then the ratio of their  $8^{th}$  terms –

- a) 31 : 29
- b) 29 : 32
- c) 29:31
- d) 32 : 29

12. The 5<sup>th</sup> term of an A.P. is 30 and its 12<sup>th</sup> term is 65. Then the sum of its first 20 terms –

- a) 1510
- b) 1501
- c) 1150
- d) 1015

13. The A.M. of two numbers is 10 ; if one number is 7 then the other number will be –

- a) 11
- b) 12
- c) 13
- d) 14

- 14. If the sum of 1<sup>st</sup> 2n terms of the A.P. 2, 5, 8, ... is equal to the sum of 1<sup>st</sup> n terms of the A.P. 57, 59, 61, ... then n = ?
  - a) 11
  - b) 12
  - c) 13
  - d) 14

15. The angles of a polygon are in A.P. having common difference 5°. If the least angle be 120° then the number of sides of the polygon – a) 9

- b) 16
- c) 15
- d) Either a) or b) is true.

Prepared by :-

SUKUMAR MANDAL (SkM).