INDIAN SCHOOL NIZWA - WORKSHEET

Ch. 5 Sequence and series

Name: **Class : XI** **Sec: B**

Multiple choice questions

1. If the numbers a, b, c, d, e form an A.P., then the value of a – 4b + 6c – 4d + e is:
   A. 1 B. 2 C. 0 D. none of these

2. If a_n be the n^{th} term of an A.P. and if $a_7 = 15$, then the value of the common difference that would make the product $a_2\ a_7\ a_{12}$ greatest is:
   A. 9 B. 9/4 C. 0 D. 18

3. The number of integers from 100 to 500 that are divisible by 5 are:
   A. 80 B. 81 C. 75 D. none of these

4. An antiques present worth is ₹ 9000. If its value appreciates at the rate of 10% per year. Its worth 3 years from now is:
   A. ₹ 6561 B. ₹ 10,890 C. ₹ 11,979 D. ₹ 12,000

5. Venessa invests ₹ 5000 in a bond that pays 6% interest compounded semi-annually. The value of the bond in rupees after 5 years is:
   A. 5000 $(1.06)^5$ B. 5000 $(1.03)^5$ C. 5000 $(1.06)^{10}$
   D. 5000 $(1.03)^{10}$

6. Which of the following terms is not the term of the A.P. –3, –7, –11, –15, ... –403, ..., –799.
   A. -500 B. -399 C. -503 D. -51

7. The sum of an infinite G.P. is 3 and the sum of the squares of its terms is also 3, than its first term and common ratio are
   A. 1, 1/2 B. 1/2, 3/2 C. 3/2, 1/2 D. 1, 1/4

8. If for a sequence $S_n = 2n - 3$, then the common difference is;
   A. -1 B. -2 C. 2 D. 3

9. The number of two digit numbers divisible by 6 are:
   A. 24 B. 15 C. 14 D. 20

10. If the fourth term of an A.P. is 4, then the sum of its 7 terms is:
    A. 28 B. 26 C. 32 D. none of these

11. Insert 6 numbers between 3 and 24 such that the resulting sequence is an A.P.

12. If $\frac{a^n+b^n}{a^{n-1}+b^{n-1}}$ is the A.M. between 'a' and 'b', then find the value of 'n'

13.	How many terms of the G.P. 32, 16, 8, are needed to give the sum $63\frac{3}{4}$
14.	The sum of three consecutive terms of a G.P. is 26 and their product is 216. Find the common ratio and the terms.
15.	Find the 10th term from the end of the sequence 7, 10, 13, ..., 130
16.	Find the number of identical terms in the two sequences: 1, 5, 9, 13, 17, ..., 197 and 1, 4, 7, 10, 13, ... 196
17.	If p times the p^{th} term of an A.P. is q times then q^{th} term, the show that its $(p + q)^{th}$ term is zero.
18.	Find the sum of first 100 even natural number.
19.	Find the sum of the sequence 4, 44, 444, ... to n terms
20.	The sum of n terms of two APs are in the ratio (3n + 8) : (7n + 15). Find the ratio of their 12th terms.
21.	The sum of three numbers in A.P. is 24 and their product is 440. Find the numbers.
22.	How many terms of the A.P. 17, 15, 13, are need to give the sum 72. Explain the double answer.
23.	Solve for x: 1 + 4 + 7 + 10 + ... + x = 590
24.	If the first, second and last terms of an A.P. are a, b & c respectively, then show that the sum of terms in A.P. is $\frac{(a+c)(b+c-2a)}{2(b-a)}$
25.	The population of a country is 114 million at present. If the population is growing at the rate of 10% per year. What will be the population of the country in 5 years?
26.	A manufacturer reckons that the value of a machine, which costs him ₹ 56200, will depreciate each year by 20%. Find the estimated value at the end of 3 years.
27.	A man saves ₹ 500 in the first month and in successive months he saves twice as much as in the previous month. This process continued for 6 months. From the seventh month and onwards he is able to save ₹ 500 less than previous month. Find his total savings for the year.
28.	Insert 3 numbers between 1and 256 so that the resulting sequence is a G.P.
29.	If AM and GM of two positive numbers x and y are 13 and 12 respectively, find the numbers.
30.	If $x \in R$, find the minimum value of $3^x + 3^{(1-x).}$