

## PROGRESSIONS

- 1) What will be the sum of first  $N$  odd natural numbers?  
(a)  $N^2-1$  (b)  $N^2$  (c)  $(N+1)^2$  (d)  $(N-1)^2$
- 2) The sum of the squares of three consecutive odd numbers is 2531. Find these three odd numbers?  
(a) 21,23,25 (b) 25,27,29 (c) 27,29,31 (d) 23,25,27
- 3) The arithmetic mean of the series: 1,2,4,8, 16..... $2^n$  is?  
(a)  $(2^n-1)/n$  (b)  $(2^{n+1}-1)/n+1$  (c)  $(2^n+1)/n+1$  (d)  $(2^n-1)/n+1$
- 4) If the sum of the 6<sup>th</sup> and the 15<sup>th</sup> elements of an AP is equal to the sum of the 7<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> elements of the same progression, then which elements of the series should necessary be equal to zero?  
(a) 10<sup>th</sup> (b) 8<sup>th</sup> (c) 1<sup>st</sup> (d) None of these
- 5) Let  $S_n$  denote the sum of the first 'n' terms of an AP.  $S_{2n}=3S_n$  then the ratio  $S_{3n}/S_n = ?$   
(a) 4 (b) 6 (c) 8 (d) 10
- 6) The fifth term of the sequence for which  $t_1 = 1$ ,  $t_2 = 2$  and  $t_{n+2} = t_n + t_{n+1}$  is ?  
(a) 5 (b) 10 (c) 6 (d) 8
- 7)  $1 + (3+1)(3^2+1)(3^4+1)(3^8+1)(3^{16}+1)(3^{32}+1)$  is equal to?  
(a)  $(3^{64} - 1)/2$  (b)  $(3^{64} + 1)/2$  (c)  $(3^{64} - 1)$  (d)  $(3^{64} + 1)$
- 8) The third term of a geometric progression is 2. The product of first 5 terms is?  
(a)  $2^5$  (b)  $2^4$  (c)  $2^6$  (d)  $2^3$
- 9) The 6<sup>th</sup> term from the end of the geometric progression 8,4,2,1,1/2,1/4.....1/1024 is?  
(a) 1/4 (b) 1/16 (c) 1/32 (d) 1/64
- 10) In a GP, the sum of first and the last term is 66 and the product of the second and the last but one term is 128. Determine the first term of the series?  
(a) 64 (b) 64 or 2 (c) 2 or 32 (d) 32

**11)** Which term of the GP 2,6,18.....? Is 1458?

- (a) 6      (b) 7      (c) 8      (d) 9

**12)** In a GP series the product of first three terms is  $\frac{27}{8}$ , then middle term is?

- (a)  $\frac{9}{4}$     (b)  $\frac{3}{2}$     (c) 1      (d)  $\frac{9}{2}$

**13)** If 5, x, y, z,405 are in G.P. then the value of y is?

- (a) 45    (b) -45    (c) 135    (d) None

**14)** Find the sum of all odd integers less than 100 but divisible by 3?

- (a) 720    (b) 905    (c) 792    (d) 867

**15)** If 6<sup>th</sup> and 17<sup>th</sup> terms of an A.P. are 19 and 41 respectively, then 40<sup>th</sup> term is?

- (a) 83    (b) 87    (c) 92    (d) 99