

## Sequence &amp; Series

## Test No. 1

1. The third term of a GP is 4. The product of first five terms is equal to  
(a)  $4^3$  (b)  $4^5$   
(c)  $4^4$  (d) None of these
2. If the sum of  $n$  terms of a series is  $an^2 + bn$ , then the series is ( $a, b$  are constants).  
(a) an AP (b) a GP  
(c) a HP (d) None of these
3. If  $\left(\frac{a^n + b^n}{a^{n-1} + b^{n-1}}\right)$  is the A.M. between  $a$  and  $b$ , then the value of  $n$  is equal to  
(a)  $-1$  (b)  $0$   
(c)  $1/2$  (d)  $1$
4. The value of  $2^{1/4} \cdot 4^{1/8} \cdot 8^{1/16} \cdot 16^{1/32} \dots$ , is equal to  
(a)  $1$  (b)  $2$   
(c)  $3/2$  (d)  $5/2$
5. If  $a, b, c, d$  are in G.P. and  $a^x = b^y = c^z = d^u$ , then  $x, y, z, u$  are in  
(a) AP (b) GP  
(c) HP (d) None of these
6. If  $a_1, a_2, \dots, a_n$  are positive real numbers whose product is a fixed number  $c$ , then the minimum value of  $a_1 + a_2 + \dots + a_{n-1} + 2a_n$  is  
(a)  $n(2c)^{1/n}$  (b)  $(n+1)c^{1/n}$   
(c)  $2nc^{1/n}$  (d)  $(n+1)(2c)^{1/n}$
7. The quadratic equation in  $x$  such that the arithmetic mean of its roots is  $A$  and geometric mean is  $G$  is  
(a)  $x^2 - Ax + G^2 = 0$  (b)  $x^2 - Ax + G = 0$   
(c)  $x^2 - 2Ax + G = 0$  (d)  $x^2 - 2Ax + G^2 = 0$
8. Suppose  $a, b, c$  are in A.P. and  $a^2, b^2, c^2$  are in G.P. If  $a < b < c$  and  $a + b + c = \frac{3}{2}$ , then the value of  $a$  is  
(a)  $\frac{1}{2\sqrt{2}}$  (b)  $\frac{1}{2\sqrt{3}}$  (c)  $\frac{1}{2} - \frac{1}{\sqrt{3}}$  (d)  $\frac{1}{2} - \frac{1}{\sqrt{2}}$
9. If  $a, b, c$  are in A.P., then  $\frac{a}{bc}, \frac{1}{c}, \frac{2}{b}$  are in  
(a) AP (b) GP  
(c) HP (d) none of these
10. Let geometric mean of 8th and 9th terms of a G.P.  
(Number of terms is 16) is  $\sqrt{2}$ , then the product of terms is  
(a)  $2^8$  (b)  $2^4$   
(c)  $2^{16}$  (d) none of these