

## Binomial Theorem

## Test No. 1

1. The numerically greatest term in the expansion of  $\left(\sqrt{2} - \frac{1}{\sqrt{2}}\right)^{10}$  is  
(a) -480 (b) 840  
(c) -120 (d) none of these
2. The term independent of  $x$  in  $\left(\frac{3}{2}x^2 - \frac{1}{3x}\right)^9$  is  
(a)  $\frac{5}{27}$  (b)  $\frac{7}{18}$  (c)  $\frac{8}{27}$  (d)  $\frac{1}{24}$
3. If  $a$  and  $d$  are two complex numbers, then the sum to  $(n + 1)$  terms of the series  $aC_0 - (a + d)C_1 + (a + 2d)C_2 - (a + 3d)C_3 + \dots$  is  
(a)  $a/2^n$  (b)  $na$   
(c) 0 (d) none of these
4. If  ${}^nC_{r-1} = 36$ ,  ${}^nC_r = 84$  and  ${}^nC_{r+1} = 126$ , then  $r$  is equal to  
(a) 1 (b) 2  
(c) 3 (d) none of these
5. The middle term in the expansion of  $\left(1 - \frac{1}{x}\right)^n (1 - x)^n$  is  
(a)  ${}^{2n}C_n$  (b)  $-{}^{2n}C_n$   
(c)  $-{}^{2n}C_{n-1}$  (d) none of these
6. The number of ways in which 12 distinct books can be put in 3 shelves, 4 on each, is  
(a)  $\frac{12!}{(4!)^3}$  (b)  $\frac{12!}{(3!)(4!)^3}$  (c)  $\frac{12!}{(3!)^3 4!}$  (d) none of these
7. If 5 parallel straight lines are intersected by 4 parallel straight lines, then the number of parallelograms thus formed, is:  
(a) 20 (b) 60  
(c) 101 (d) 126
8. The number of ways in which 7 persons can be seated at a round table if two particular persons are not to sit together, is:  
(a) 120 (b) 480  
(c) 600 (d) 720
9. Six identical coins are arranged in a row. The total number of ways in which the number of heads is equal to the number of tails, is  
(a) 9 (b) 20  
(c) 40 (d) 120
10. Number of ways of choosing 4 letters from the word DRESEE is  
(a) 7 (b)  $\frac{{}^6C_4}{3!}$  (c) 52 (d) none of these