

- What is the sum of the coefficient of all the terms in the expansion of  $(45x - 49)^4$ ?  
(A) -256 (B) -100  
(C) 100 (D) 256
- What is the approximate value of  $(1.02)^{87}$ ?  
(A) 1.171 (B) 1.175  
(C) 1.177 (D) 1.179
- What is the coefficient of  $x^3y^4$  in  $(2x + 3y^2)^5$ ?  
(A) 240 (B) 360  
(C) 720 (D) 1080
- What is the middle term in the expansion of  $\left(\frac{x\sqrt{y}}{3} - \frac{3}{y\sqrt{x}}\right)^{12}$ ?  
(A)  $C(12, 7)x^3y^{-3}$  (B)  $C(12, 6)x^{-3}y^3$   
(C)  $C(12, 7)x^{-3}y^3$  (D)  $C(12, 6)x^3y^{-3}$
- What is the value of  ${}^8C_0 - {}^8C_1 + {}^8C_2 - {}^8C_3 + {}^8C_4 - {}^8C_5 + {}^8C_6 - {}^8C_7 + {}^8C_8$ ?  
(A) 0 (B) 1  
(C) 2 (D)  $2^8$
- The middle term of  $\left(2x - \frac{1}{3x}\right)^{10}$  is  
(A)  ${}^{10}C_4 \frac{2^4}{3^4}$  (B)  $- {}^{10}C_5 \frac{2^5}{3^5}$   
(C)  $- {}^{10}C_4 \frac{2^4}{3^5}$  (D)  ${}^{10}C_5 \frac{2^5}{3^5}$
- The coefficient of the middle term in the expansion of  $(2 + 3x)^4$  is  
(A) 6 (B) 5!  
(C) 8! (D) 216
- The coefficients of  $x^m$  and  $x^n$ , where  $m$  and  $n$  are positive integers, in the expansion of  $(1 + x)^{m+n}$  are  
(A) equal  
(B) equal in magnitude but opposite in sign  
(C) reciprocal to each other  
(D) in the ratio  $m : n$
- What are the values of  $k$ , if the term independent of  $x$  in the expansion of  $\left(\sqrt{x} + \frac{k}{x^2}\right)^{10}$  is 405?  
(A)  $\pm 3$  (B)  $\pm 6$   
(C)  $\pm 5$  (D)  $\pm 4$
- What is the sum of the coefficients in the expansion of  $(5x - 4y)^{100}$ ?  
(A) 1 (B) -1  
(C)  $5^{100}$  (D)  $-2^{100}$
- How many terms are there in the expansion of  $(4x + 7y)^{10} + (4x - 7y)^{10}$ ?  
(A) 5 (B) 6  
(C) 11 (D) 22
- Which one of the following statements is correct? The natural number  $6^{10} - 51$  is  
(A) a prime number (B) an even number  
(C) divisible by 5 (D) a power of 3
- 6th term in expansion of  $\left(2x^2 - \frac{1}{3x^2}\right)^{10}$  is  
(A)  $\frac{4580}{17}$  (B)  $-\frac{896}{27}$   
(C)  $\frac{5580}{17}$  (D) None of these
- If  $n$  is even, then the middle term in the expansion of  $\left(x^2 + \frac{1}{x}\right)^n$  is  $924x^6$ , then  $n$  is equal to  
(A) 10 (B) 12  
(C) 14 (D) None of these
- If the 4th term in expansion of  $\left(\frac{2}{3}x - \frac{3}{2x}\right)^n$  is independent of  $x$ , then  $n$  is equal to  
(A) 5 (B) 6  
(C) 9 (D) None of these

16. If the coefficient of 7th and 13th term in the expansion of  $(1 + x)^n$  are equal, then  $n$  is equal to  
 (A) 10 (B) 15  
 (C) 18 (D) 20
17. The value of  $(0.99)^{15}$  is  
 (A) 0.8432 (B) 0.8601  
 (C) 0.8502 (D) None of these
18. If in the expansion of  $(1 + x)^n$ , the coefficient of  $r$ th and  $(r + 2)$ th term be equal, then  $r$  is equal to  
 (A)  $2n$  (B)  $\frac{2n + 1}{2}$   
 (C)  $\frac{n}{2}$  (D)  $\frac{2n - 1}{2}$
19. If the ratio of the coefficient of third and fourth term in the expansion of  $\left(x - \frac{1}{2x}\right)^n$  is  $1 : 2$ , then the value of  $n$  will be  
 (A) 18 (B) 16  
 (C) 12 (D)  $-10$
20. In the expansion of  $\left(x^3 + \frac{1}{x^2}\right)^8$ , then the term containing  $x^4$  is  
 (A)  $70x^4$  (B)  $60x^4$   
 (C)  $56x^4$  (D) None of these
21. The total number of terms in the expansion of  $(x + a)^{100} + (x - a)^{100}$  after simplification will be  
 (A) 202 (B) 51  
 (C) 50 (D) None of these