CLASS 11   **MATHEMATICS**

BINOMIAL THEOREM

1) Expand : $\left(\sqrt{\dfrac{x}{a}} + \sqrt{\dfrac{a}{x}}\right)^6$

2) Find the coefficient of y^9 in the expansion of $(5 - 2y)^{11}$

3) Write the middle term(s) in the expansion of $(1 - y)^{50}$

4) Find the 10th term in the expansion of $\left(2x^2 - \dfrac{1}{x}\right)^{12}$

5) Find the values of a and b if the 4th term in the expansion of $\left(ax + \dfrac{1}{x}\right)^n$ is 5/2

6) What is the number of terms in the expansion of

   a) $(1 + 2x + x^2)^{20}$

7) Find the term independent of x in the expansion of

   a) $\left(\dfrac{\sqrt{x}}{\sqrt{3}} + \dfrac{3}{2x^2}\right)^{10}$

8) The first three terms in the expansion of $(x + y)^n$ are 1,56 and 1372 respectively . Find the values of x and y

9) Find k , such that 405 is the independent term, in the expansion of $\left(\sqrt{x} + \dfrac{k}{x^2}\right)^{10}$

10) If the coefficients of the $(r - 1)^{th}, r^{th}, (r + 1)^{th}$ terms in the expansion of $(1 + x)^n$ are in the ratio 1:7:42. Find n and r