

Example 19 The coefficient of x^p and x^q (p and q are positive integers) in the expansion of $(1+x)^{p+q}$ are

- (A) equal (B) equal with opposite signs
(C) reciprocal of each other (D) none of these

Solution A is the correct choice. Coefficient of x^p and x^q in the expansion of $(1+x)^{p+q}$ are ${}^{p+q}C_p$ and ${}^{p+q}C_q$

and
$${}^{p+q}C_p = {}^{p+q}C_q = \frac{|p+q|}{|p||q|}$$

Hence (a) is the correct answer.