Case - I When $\dfrac{n+1}{1+\left|\dfrac{a}{b}\right|}$ is an integer (say m), then

(i) $T_{r+1} > T_r$ when $r < m$ $(r = 1, 2, 3 \ldots, m-1)$
i.e. $T_2 > T_1, T_3 > T_2, \ldots\ldots, T_m > T_{m-1}$

(ii) $T_{r+1} = T_r$ when $r = m$
i.e. $T_{m+1} = T_m$

(iii) $T_{r+1} < T_r$ when $r > m$ $(r = m+1, m+2, \ldots\ldots n)$
i.e. $T_{m+2} < T_{m+1}, T_{m+3} < T_{m+2}, \ldots\ldots T_{n+1} < T_n$

Conclusion :

When $\dfrac{n+1}{1+\left|\dfrac{a}{b}\right|}$ is an integer, say m, then $\mathbf{T}_m$ and T_{m+1} will be numerically greatest terms (both terms are equal in magnitude)

Case - II

When $\dfrac{n+1}{1+\left|\dfrac{a}{b}\right|}$ is not an integer (Let its integral part be m), then

(i) $T_{r+1} > T_r$ when $r < \dfrac{n+1}{1+\left|\dfrac{a}{b}\right|}$ $(r = 1, 2, 3, \ldots\ldots, m-1, m)$

i.e. $T_2 > T_1, T_3 > T_2, \ldots\ldots, T_{m+1} > T_m$

(ii) $T_{r+1} < T_r$ when $r > \dfrac{n+1}{1+\left|\dfrac{a}{b}\right|}$ $(r = m+1, m+2, \ldots\ldots n)$

i.e. $T_{m+2} < T_{m+1}, T_{m+3} < T_{m+2}, \ldots\ldots, T_{n+1} < T_n$

Conclusion :

When $\dfrac{n+1}{1+\left|\dfrac{a}{b}\right|}$ is not an integer and its integral part is m, then T_{m+1} will be the numerically greatest term.

Note : (i) In any binomial expansion, the middle term(s) has greatest binomial coefficient.
In the expansion of $(a+b)^n$

If n	**No. of greatest binomial coefficient**	**Greatest binomial coefficient**
Even	1	${}^nC_{n/2}$
Odd	2	${}^nC_{(n-1)/2}$ and ${}^nC_{(n+1)/2}$

(Values of both these coefficients are equal)

(ii) In order to obtain the term having numerically greatest coefficient, put a = b = 1, and proceed as discussed above.