2) If the number of terms in the expansion of $\left(1-\frac{2}{x}+\frac{4}{x^2}\right)^n$, $x \neq 0$, is 28, then the sum of the coefficients of all the terms in this expansion is :

(a) 243 (b) 729 (c) 64 (d) 2187 [Main 2016]

Solution: (b)

Total number of terms $= {}^{n+2}C_2 = 28$

$(n+2)(n+1) = 56$; $n = 6$

$\therefore$ Put $x = 1$ in expansion $\left(1-\frac{2}{x}+\frac{4}{x^2}\right)^6$

we get sum of coefficient $= (1-2+4)^6 = 3^6$

$= \boxed{729}$