$$(1+x+x^2\cdots)(x^2+x^4+\cdots)(1+x^3+x^5)$$

$$\Rightarrow 1\left(x^0\cdot x^{80}+x^2\cdot x^{78}+x^4\cdot x^{76}+\cdots\quad x^{78}x^2\right)$$

$$+x^3\left(x\cdot x^{76}+x^3\cdot x^{74}+x^5\cdot x^{72}+\cdots\quad x^{75}\cdot x^2\right)$$

$$+x^5\left(x\cdot x^{74}+x^3\cdot x^{72}+x^5\cdot x^{70}+\cdots\quad x^{73}\cdot x^2\right)\quad -\star$$

$\Rightarrow$ Now to find no. of elements in

$x^0x^{80}+x^2\cdot x^{78}+\cdots\quad x^{78}\cdot x^2$

first term $a=0$

Common difference $d=2$ [see, power of x is increasing by 2.]

by A.P

$78 = 0+(n-1)2$

$39 = n-1 \Rightarrow \boxed{n=40}$ — (1)

$\Rightarrow$ Now to find no. element in

$x\cdot x^{76}+x^3\cdot x^{74}+\cdots\quad x^{75}\cdot x^2$

$a=1 \quad d=2$: last term $=75$

$75 = 1+(n-1)2 \Rightarrow \boxed{n=38}$

$\Rightarrow$ Now to find no. of element in

$x\cdot x^{74}+x^3\cdot x^{72}+\cdots\quad x^{73}\cdot x^2$

$a=1 \quad d=2$ last term $=73$

$73 = 1+(n-1)2 \Rightarrow \boxed{n=37}$

Thus no. of elements in $\star$ $= 40+38+37 = \boxed{115}$

Thus coefficient of $x^{80} = \boxed{115}$ Ans.