Que-6: Find the value of $1 + 5\ln 3 + \frac{(5\ln 3)^2}{2!} + \cdots$

Ans: We know that $e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \cdots$

If we put $x = 5\ln 3$, then we can get the desired answer

So,

$$1 + 5\ln 3 + \frac{(5\ln 3)^2}{2!} + \cdots = e^{5\ln 3}$$
$$= e^{\ln 3^5}$$
$$= 3^5$$