Q4. $7\log\left(\dfrac{16}{15}\right)+5\log\left(\dfrac{25}{24}\right)+3\log\left(\dfrac{81}{80}\right)$ is equal to

(a) 0

(b) 1

(c) log 2

(d) log 3

Ans 4

$$7\log\left(\frac{16}{15}\right)+5\log\left(\frac{25}{24}\right)+3\log\left(\frac{81}{80}\right)$$

$$=7\log\left(\frac{2^4}{5\times3}\right)+5\log\left(\frac{5^2}{2^3\times3}\right)+3\log\left(\frac{3^4}{2^4\times5}\right)$$

$$=7\{4\log2-\log5-\log3\}+5\{2\log5-3\log2-\log3\}+3\{4\log3-4\log2-\log5\}$$

$$=\log2$$

Hence, the correct option is (c).