

**H.** When the trapezium rule is used to estimate the integral

$$\int_0^1 2^x dx$$

by dividing the interval  $0 \leq x \leq 1$  into  $N$  subintervals the answer achieved is

- (a)  $\frac{1}{2N} \left\{ 1 + \frac{1}{2^{1/N} + 1} \right\}$ ,      (b)  $\frac{1}{2N} \left\{ 1 + \frac{2}{2^{1/N} - 1} \right\}$ ,
- (c)  $\frac{1}{N} \left\{ 1 - \frac{1}{(2^{1/N} - 1)} \right\}$ ,      (d)  $\frac{1}{2N} \left\{ \frac{5}{2^{1/N} + 1} - 1 \right\}$ .