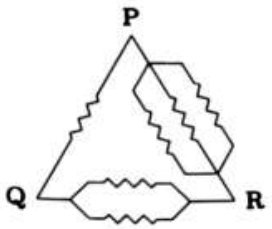
Q 10

Six equal resistances are connected between points P, Q and R as shown in the figure. Then, the net resistance will be maximum between (2004)



(A) P and Q (B) Q and R
(C) P and R (D) any two points

Sol. The equivalent resistances between P and Q, between Q and R, and between P and R are given by

$$R_{PQ} = R \parallel (R/2 + R/3) = R \parallel 5R/6$$

$$= \frac{R(5R/6)}{R + 5R/6} = \frac{5}{11}R,$$

$$R_{QR} = (R/2) \parallel (R + R/3) = \frac{4}{11}R,$$

$$R_{PR} = (R/3) \parallel (R + R/2) = \frac{3}{11}R.$$

Ans. A ⊡