The antenna current is 8A when only carrier is transmitted and 9.6A when AM wave is transmitted. If carrier power is 10 kW, find modulating power.

(a) 14.4 kW
(b) 1.2 kW
(c) 2.0 kW
(d) 4.4 kW

(d) $$\frac{P_{\text{Total}}}{P_{\text{Carrier}}} = \left(\frac{I_{\text{Total}}}{I_{\text{Carrier}}}\right)^2$$

$$\therefore\ P_{\text{tot}} = 10\left(\frac{9.6}{8}\right)^2 = 14.4\ \text{kW}$$

Modulating power $P_{\text{mod}} = 14.4 - 10 = 4.4\ \text{kW}$.