

When 80% AM is transmitted total power is 10 kW. If carrier and one side band are suppressed. What will be the power saved ?

(a) 8.28 kW

(b) 8.08 kW

(c) 7.88 kW

(d) 8.78 kW

Solution (d) $P_{\text{tot}} = P_{\text{carrier}} \left[1 + \frac{m_a^2}{2} \right]$

$$P_{\text{carrier}} = \frac{10}{1 + \frac{0.64}{2}} = 7.58 \text{ kW}$$

$$\text{Power saved} = P_{\text{carrier}} \left[1 + \frac{m_a^2}{4} \right]$$

$$= 7.58 [1 + .16] = 8.78 \text{ kW}$$