# PADRÃO DE RESPOSTAS

(VALOR POR QUESTÃO: 2,00 PONTOS)

| Questão | Resposta |
|---|---|
| 1 | $64{,}8 \div 3{,}6 = 18$ m/s<br>$a_c = \frac{v^2}{R} = \frac{18^2}{6} = 54$ m/s$^2$ |
| 2 | $R_{eq1} = 10 + 10 = 20\ \Omega$<br>$R_{eq2} = \frac{10}{2} = 5\ \Omega$<br>$R_{eqT} = \frac{20 \times 5}{20 + 5} = 4\ \Omega$ ; $I = \frac{U}{R_{eqT}} = \frac{12}{4} = 3$ A |
| 3 | $Q_E = m_E \times v_E = 4860 \times 40{,}0 = 194400$ kg × km/h<br>$Q_L = m_L \times v_L = 200 \times 81 = 16200$ kg × km/h<br>$\frac{Q_E}{Q_L} = \frac{194400}{16200} = 12$ |
| 4 | $t_1 = \frac{d}{v_1}$ ; $t_2 = \frac{d}{v_2}$<br>$t_1 = \frac{1200}{8} = 150$ s<br>$t_2 = \frac{1200}{5} = 240$ s<br>$\Delta t = t_2 - t_1 = 240 - 150 = 90$ s |
| 5 | $P' = f$<br>$\frac{i}{o} = \frac{f}{P} \rightarrow i = \frac{20 \times 20}{100} = 4{,}0$ cm |
| 6 | $P = m \times g \rightarrow P = 100 \times 10 = 1000$ N<br>$T_{BC}$ sen $30° = 1000$ ; $T_{BC} = 2000$ N<br>$T_{BC} \cos 30° = T_{AB} = 2000 \times \frac{\sqrt{3}}{2} = 1000\sqrt{3}$ N |
| 7 | $\lambda = 8{,}0$ cm $= 0{,}08$ m<br>$f = \frac{v}{\lambda} = \frac{0{,}48}{0{,}08} = 6{,}0$ Hz |
| 8 | $4000$ W $= \frac{4000\ J}{s} = 1000$ cal/s<br>$P = \frac{Q}{\Delta t} = \frac{m \times c \times \Delta\theta}{\Delta t}$<br>$1000 = \frac{m \times 1 \times (60 - 20)}{\Delta t} \rightarrow \frac{m}{\Delta t} = \frac{1000}{40} = 25$ g/s $= 1500$ g/min $= 1{,}5$ L/min |
| 9 | $a = 200$ cm/s$^2 = 2{,}0$ m/s$^2$ ; $m = 16$ ton $= 16000$ kg<br>$T = m \times a \rightarrow T = 16 \times 10^3 \times 2 = 3{,}2 \times 10^4$ N |
| 10 | $50$ cm $= 0{,}5$ m; $300$ mA $= 0{,}3$ A<br>$F = B \times i \times L \rightarrow F = 2{,}0 \times 10^{-3} \times 0{,}3 \times 0{,}5 = 3{,}0 \times 10^{-4}$ N |