

حل مسائل الفصل الثالث/ الثاني عشر العلمي2011/2010التيار الكهربائي والمقاومة

12
83

$$\Delta t = \frac{Q}{I} = \frac{10}{5} = (2) S$$

13
83

$$أ) \Delta t = \frac{Q}{I} = \frac{1.9 \times 10^3}{9.1} = (208.8) S$$

$$ب) n_e = \frac{q}{q_e} = \frac{1.9 \times 10^3}{1.6 \times 10^{-19}} = 1.19 \times 10^{22} \text{ إلكترون} = 1.2 \times 10^{22} \text{ إلكترون}$$

14
83

$$10A \text{ بالاتجاه المعاكس}$$

22
84

$$I = \frac{\Delta V}{R} = \frac{3}{15} = 0.2 A$$

24
84

$$أ) I = \frac{\Delta V}{R} = \frac{9}{5} = 1.8 A$$

$$ب) I = \frac{\Delta V}{R} = \frac{9}{2} = 4.5 A$$

$$ج) I = \frac{\Delta V}{R} = \frac{9}{20} = 0.45 A$$

30
84

$$Kw.h = 1000 w . (3600 S)$$

$$= 3600000 w.s = 3600000 \frac{J}{s} . s$$

$$= 3600000 J = 3.6 \times 10^6 J$$

32
84

$$p_1 = 60 \text{ W} \quad p_2 = 75 \text{ W}$$

$$\Delta v = 220 \quad p = I \Delta v$$

$$p \propto i \quad \Delta v \text{ ثابت}$$

$$p_1 < p_2 \rightarrow I_1 > I_2$$

34
84

$$E = p \times t = \left(\frac{2.5}{1000} \right) (365 \times 24) 10^6 = 21.9 \times 10^6 \text{ kW.h}$$

$$\text{التكاليف} = E \times \text{السعر} = 21.9 \times 10^6 \times 20 = 4.2 \times 10^8 \text{ فلس}$$

36
84

$$P = \frac{\Delta V^2}{R}$$

37
84

$$P = I \Delta V$$

$$75 = I(220)$$

38
84

$$E = p \times t =$$

$$E = (2)^2(2)$$

39
84

$$1) I = \frac{\Delta Q}{\Delta T} = \frac{45 \times 10^{-3}}{15} = 3 \times 10^{-3} \text{ A}$$

$$2) Q = I \Delta t = 3 \times 10^{-3} \times 1 \times 60 = 18 \times 10^{-2} \text{ C}$$

$$n_e = \frac{q}{q_e} = \frac{18 \times 10^{-2}}{1.6 \times 10^{-19}} = 1.125 \times 10^{18} \text{ إلكترون}$$

40
85

$$1) \Delta V = IR = 80 \times 10^{-6} \times 4 \times 10^5 = 32 \text{ volt}$$

$$2) \Delta V = IR = 80 \times 10^{-6} \times 2 \times 10^3 = 16 \times 10^{-2} \text{ volt}$$

41
85

$$P = I \Delta V =$$

42
85

$$E = p \times \Delta t$$

$$= 0.09 \times 3.6 \times 10^6 = 3.2 \times 10^5 J$$

43
85

$$p = 80 w , Q = 90 Ah$$

$$\Delta t = \frac{Q}{I} =$$

$$= \frac{90 \times 36}{\frac{p}{\Delta t}}$$

$$= 6.75 h$$

44
85

$$Q = I \times \Delta t$$

$$أ) Q = \text{المساحة تحت المنحنى} = \left(2 \times 5 + \frac{1}{2} \times 1 \times 4 + 1 \times 4 + \frac{1}{2} \times 1 \times 4 \right)$$

$$ب) I = \frac{\Delta Q}{\Delta t} = \frac{18}{5} = 3.6 A$$

2
86

$$p = \frac{\Delta v^2}{R} =$$

6
86

$$\text{التكاليف} = E$$

$$180 = E \times$$

$$E = 900 kw.h$$

7
86

$$E = P \times \Delta t$$

$$900 = 30 \times 1.5 t$$

$$t = \frac{900}{45} = 20h$$

9
86

$$R \propto \frac{1}{A}$$

$$R_B > R_A$$

$$A_B < A_A$$

10
87

$$R_B = \text{الميل} :$$

$$Q = I \times \Delta t = \frac{\Delta V}{R} \times \Delta t = \frac{8}{0.9} \times 25 = 222 C$$

12
87

$$i) \Delta Q = I \cdot \Delta t = 2 \times 12 = 24 C$$

$$b) E = (I \Delta V) \Delta t = 2 \times 12 \times 60 = 1440 J$$