



Higher Electrical Circuits Answers

- 1.** a) 4Ω , 6Ω and 10Ω in series.
b) 4Ω and 12Ω in parallel.
c) 4Ω and 6Ω in series with a 10Ω placed in parallel across them.

- 2.** a) $DE = 2986\Omega$.
b) $EF = 836\Omega$.
c) $DF = 3142\Omega$.

- 3.** $R_{CD} = 55.3\Omega$.

- 4.** $R = 7.5\Omega$.

- 5.** ii and iii.

- 6.** 4Ω .

- 7.** 8Ω .

- 8.** 5Ω .

- 9.** a) $5V$.
b) $2.5V$.

- 10.** a) $60V$.
b) $72V$.

11. 12W.

12. 48V.

13. 2V.

14. 10Ω.

15. 4V.

16. 12V.

17. 10Ω.

18. a) $R_s = 48\Omega$.

b) $I = 0.25A$.

c) $V_1 = 2.5V$, $V_2 = 5V$ and $V_3 = 4.5V$.

d) $V_1 + V_2 + V_3 = V_s$

19. a) $R_p = 11.4\Omega$.

b) A_4 and $A_5 = 1.40A$

c) $A_1 = 0.80A$, $A_2 = 0.40A$ and $A_3 = 0.20A$.

d) A_4 or $A_5 = A_1 + A_2 + A_3$.

20. a) $R_s = 170\Omega$.

b) $R_p = 444\Omega$.

c) $R_T = 214.4\Omega$.

d) $I = 0.028A$.

e) $V = 1.24V$

21. $V_1 = 2.04\text{V}$.

22. a) 0.088W

b) 0.081W

23. a) Ammeter = $3.79 \times 10^{-3}\text{A}$.

b) $V_1 = 5.2\text{V}$ and $V_2 = 6.8\text{V}$.

c) $2.58 \times 10^{-2}\text{W}$

24. a) $I = 0.06\text{A}$.

b) $V_2 = 6\text{V}$.

c) $R_2 = 100\Omega$.

25. a) $1.6 \times 10^{-3}\text{A}$.

b) 2.4V .

c) $2 \times 10^{-3}\text{A}$.

d) 3V .

26. a) 90Ω .

b) 850Ω .

27. a) 48Ω .

b) 0.25A .

c) 9.7V .

d) $A_1 = 115\text{mA}$, $A_2 = 77\text{mA}$ and $A_3 = 57.5\text{mA}$.

28. a) $R_2 = 18\text{k}\Omega$.

b) 3.75V .

29. 200Ω .

30. 1V .