GATE ECE and EE Coaching by IITians GATE CLASSES
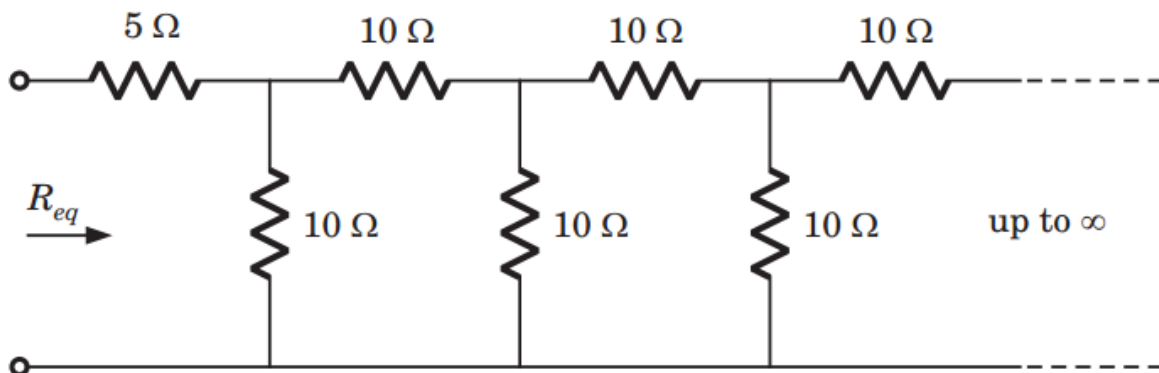## Networks and Circuits
CHAPTER 1 – BASIC ELECTRONICS

Q.1. Consider the circuit graph shown in fig. Each branch of circuit graph represent a circuit element. The value of voltage v_1 is
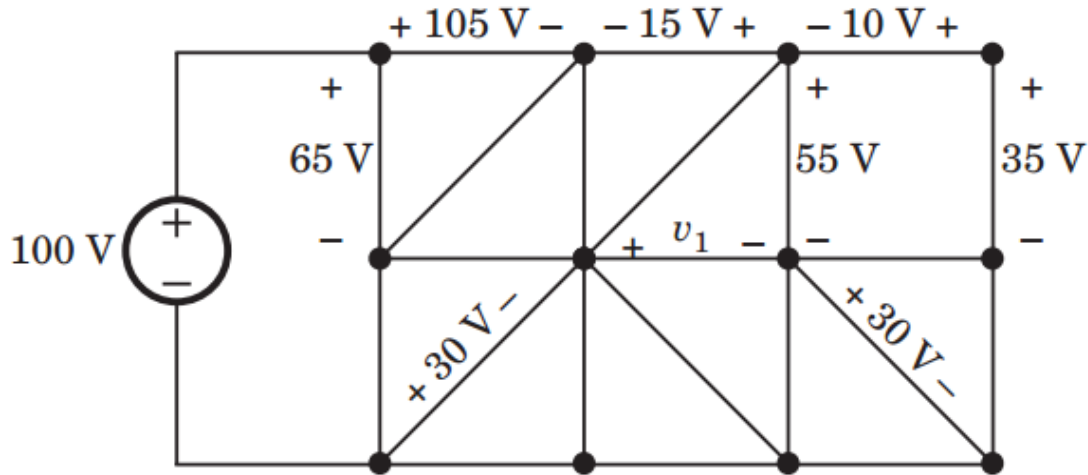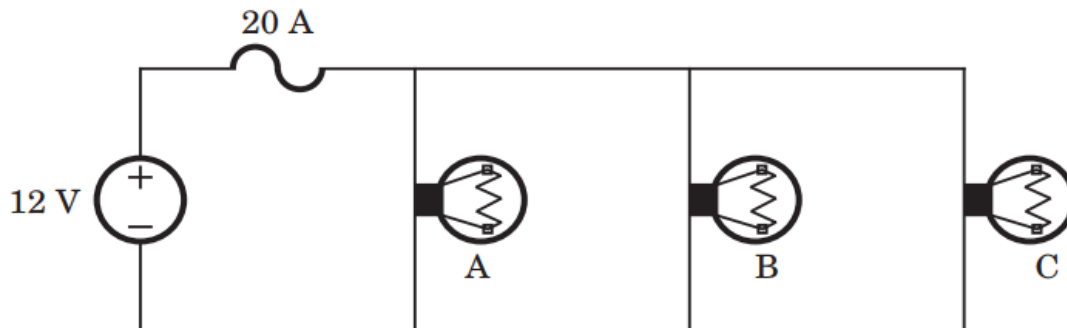

(A) 30 V	(B) 25 V
(C) 20 V	(D) 15 V

ANS (D)

Q.2. R_{eq} ?

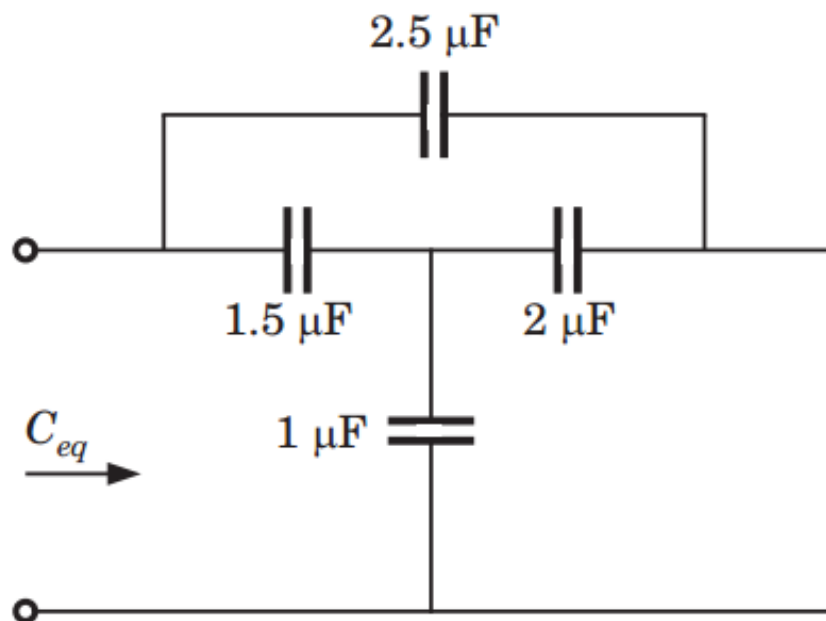| (A) 11.86Ω	(B) 10 Ω
(C) 25 Ω	(D) 11.18 Ω

ANS (D)

Q.3. In the circuit of fig. bulb A uses 36 W when lit, bulb B uses 24 W when lit, and bulb C uses 14.4 W when lit. The additional A bulbs in parallel to this circuit, that would be required to blow the fuse is

(A) 4   (B) 5
(C) 6   (D) 7

ANS (B)

Q.4. C_{eq} ?

| (A) 3.5 F | (B) 1.2 F |

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| (C) 2.4 F | (D) 2.6 F |

ANS (A)

Q.5. In the circuit of fig. power is delivered by
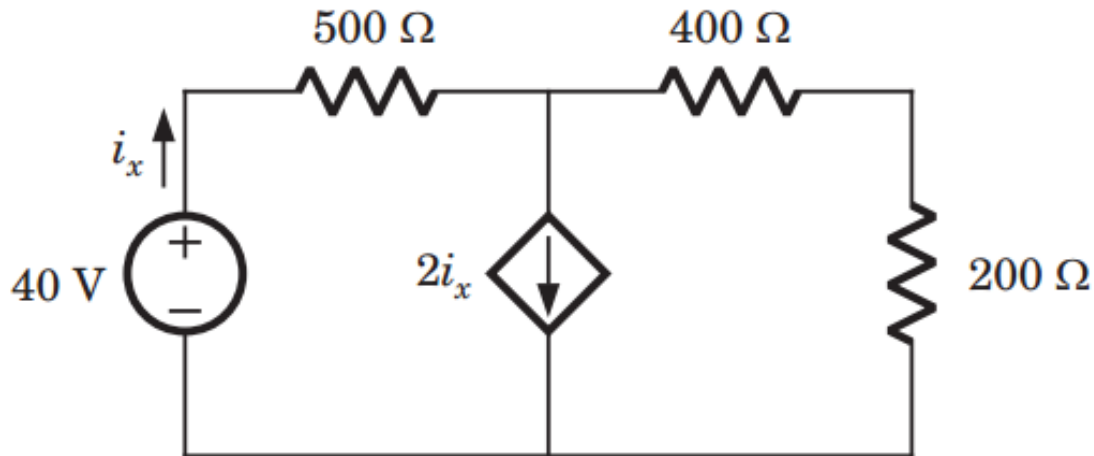
(A) dependent source of 192 W
(B) dependent source of 368 W
(C) independent source of 16 W
(D) independent source of 40 W

ANS (A)

Q.6. The waveform for the current in a 200 F capacitor is shown in fig. The waveform for the capacitor voltage is
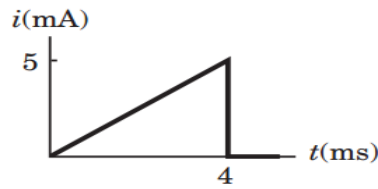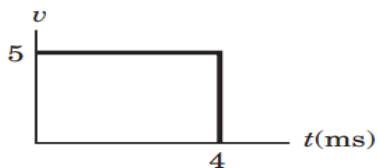
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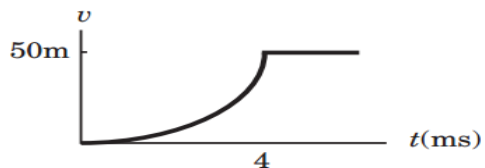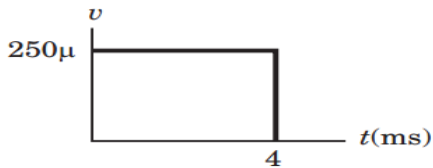
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Fig. P. 1.1.36

(A)

(B)

(C)
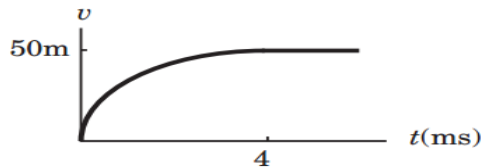
(D)

ANS (B)

Q.7.The value of the current measured by the ammeter in Fig is

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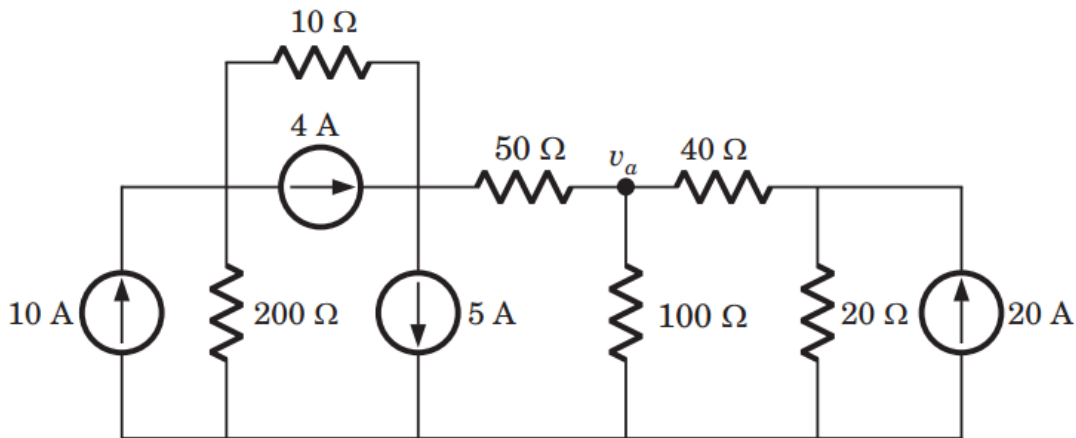EXCLUSIVE GATE COACHING BY IIT/IISc GRADUATES
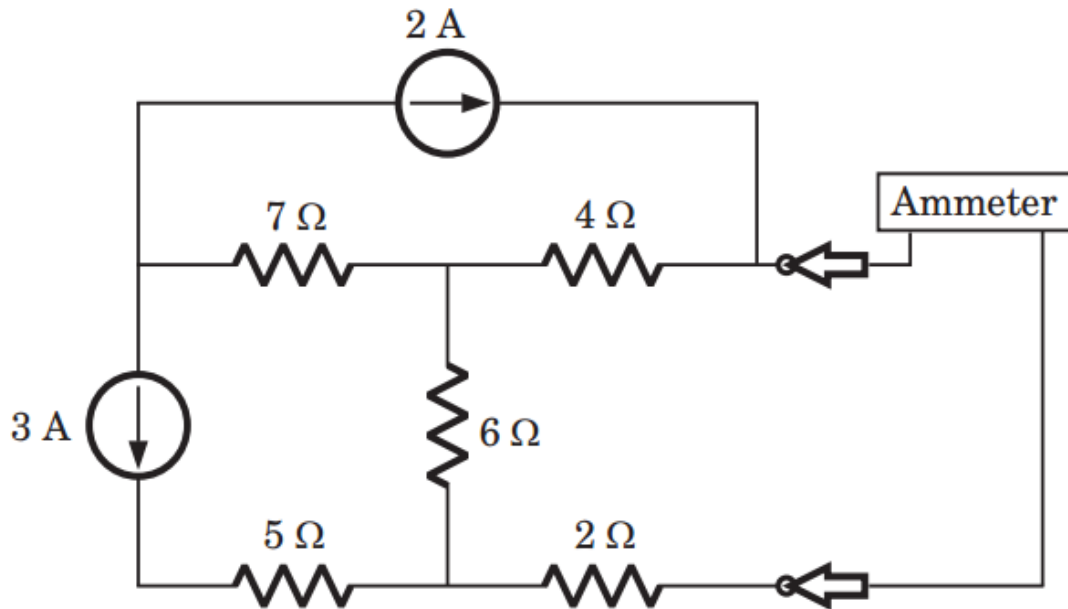
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(A) $\dfrac{2}{3}$ A　　　　　　　　(B) $\dfrac{5}{3}$ A

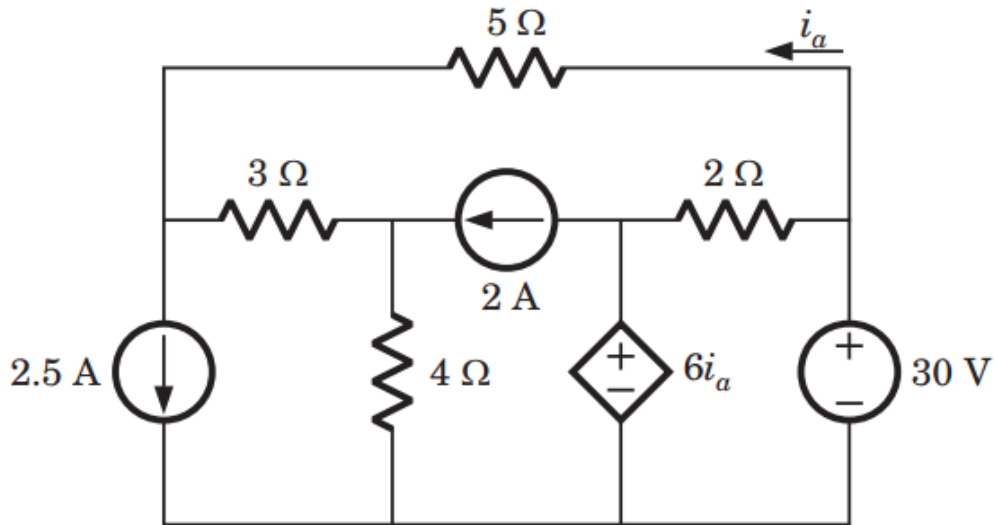(C) $-\dfrac{5}{6}$ A　　　　　　(D) $\dfrac{2}{9}$ A

ANS (C)

Q.8. Va ?

(A) 342 V　　　　　　(B) 171 V
(C) 198 V　　　　　　(D) 396 V

ANS (A)

Q.9. The power being dissipated in the 2Ω resistor in the circuit of Fig. is

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(A) 76.4 W   (B) 305.6 W
(C) 52.5 W   (D) 210.0 W
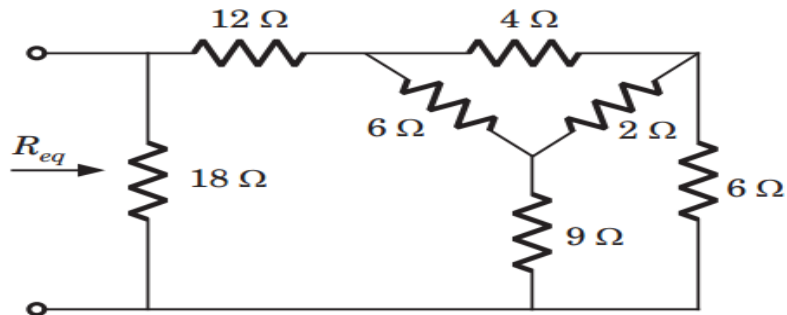
ANS (A)

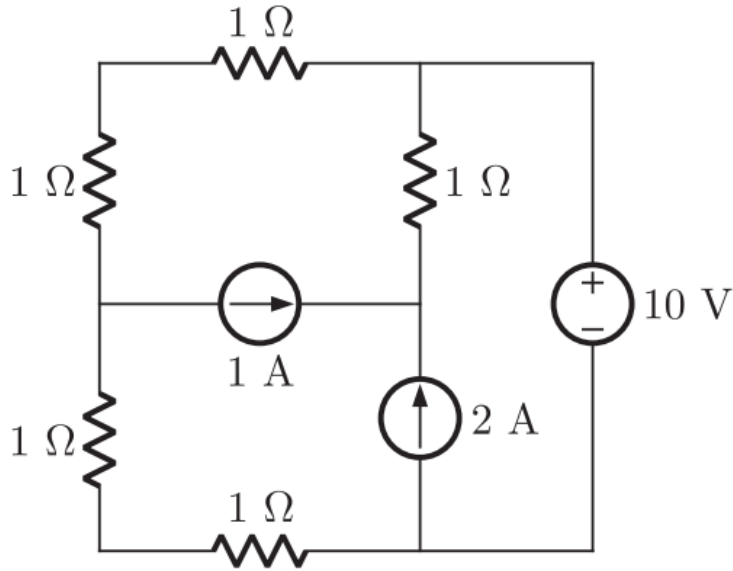Q.10 R_{eq} ?

Fig. P.1.4.30

(A) $18 \ \Omega$

(B) $\dfrac{72}{13} \ \Omega$

(C) $\dfrac{36}{13} \ \Omega$

(D) $9 \ \Omega$

ANS (D)

Q. 11. In the circuit shown, the power supplied by the voltage source is

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(A) 0 W   (B) 5 W

(C) 10 W   (D) 100 W

ANS (A)

Q.12. In the interconnection of ideal sources shown in the figure, it is known that the 60 V source is absorbing power.
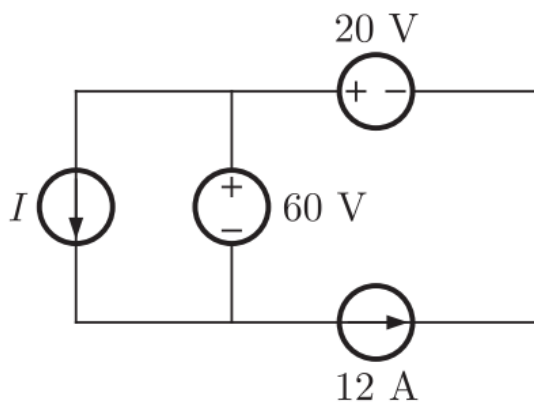
Which of the following can be the value of the current source I ?

(A) 10 A	(B) 13 A
(C) 15 A	(D) 18 A

ANS (A)

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Q. 13. A fully charged mobile phone with a 12 V battery is good for a 10 minute talk-time. Assume that, during the talk-time the battery delivers a constant current of 2 A and its voltage drops linearly from 12 V to 10 V as shown in the figure. How much energy does the
battery deliver during this talk-time?
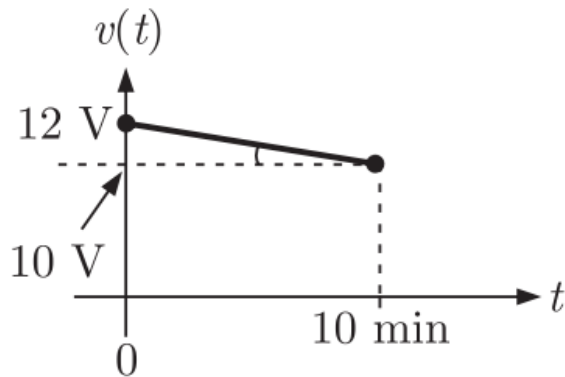
(A) 220 J   (B) 12 kJ
(C) 13.2 kJ   (D) 14.4 J
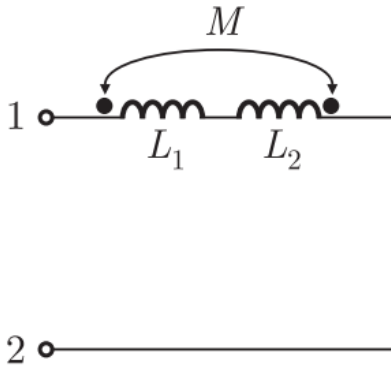
ANS (C)

Q. 14.Impedance Z as shown in the given figure is

(A) j29Ω	(B) j9Ω
(C) j19Ω	(D) j39Ω
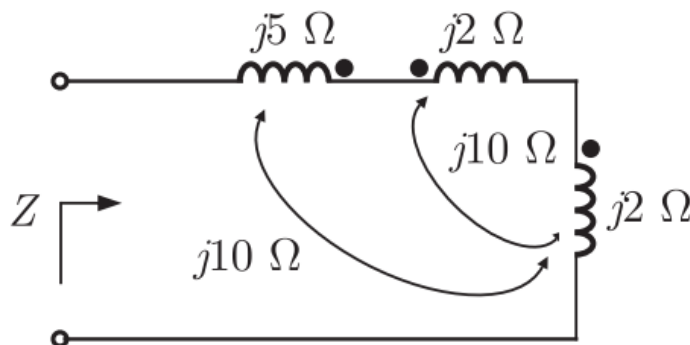
ANS (B)

Q.15 The equivalent inductance measured between the terminals 1 and 2 for the circuit shown in the figure is

(A) $L_1 + L_2 + M$

(B) $L_1 + L_2 - M$

(C) $L_1 + L_2 + 2M$

(D) $L_1 + L_2 - 2M$

ANS (D)

Q.16 If each branch of Delta circuit has impedance $\sqrt{3}\,Z$, then each branch of the equivalent Wye circuit has impedance

(A) $Z/\sqrt{3}$ (B) $3Z$

(C) $3\sqrt{3}\,Z$ (D) $Z/3$

ANS (A)