الملف اختبار في الكهربائية الوحدتين الخامسة والسادسة مع الحل

روابط مواقع التواصل الاجتماعي بحسب الصف الثاني عشر المتقدم




روابط مواد الصف الثاني عشر المتقدم على تلغرام

التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات

المزيد من الملفات بحسب الصف الثاني عشر المتقدم والمادة رياضيات في الفصل الثاني

1	كل مايخص الاختبار التكويني لمادة الرياضيات للصف الثاني عشر يوم الأحد 9/2/2020
2	تدريبات متنوعة مع الشرح على الوحدة الرابعة(النهايات والاتصال)
3	تدريبات متنوعة على تطبيقات الاشتقاق
4	قوانين هندسية
5	الاختبار القياسي في الرياضيات

اختبار في الكهربائية الوحدتين 5و6 مع سلسلة أينشتاين الخليج

1. A light bulb is rated at 30 W when operated at 120 V. How much charge enters (and leaves) the light bulb in 1.0 min?

a. 17 C
b. 15 C
c. 14 C
d. 13 C
e. 60 C

2. What maximum power can be generated from an 18-V *emf* using any combination of a 6.0 Ω resistor and a 9.0 Ω resistor?

a. 54 W
b. 71 W
c. 90 W
d. 80 W
e. 22 W

3. If 5.0×10^{21} electrons pass through a 20 Ω resistor in 10 min, what is the potential difference across the resistor?

a. 21 V
b. 32 V
c. 27 V
d. 37 V
e. 54 V

4. A wire (length = 2.0 m, diameter = 1.0 mm) has a resistance of 0.45 Ω. What is the resistivity (in Ω.m) of the material used to make the wire?

a. 5.6×10^{-7}
b. 1.2×10^{-7}
c. 1.8×10^{-7}
d. 2.3×10^{-7}
e. 7.1×10^{-7}

5. Most telephone cables are made of copper wire of either 24 or 26 gauge. If the resistance of 24-gauge wire is 137 Ω /mile and the resistance of 26-gauge wire is 220 Ω /mile, what is the ratio of the diameter of 24-gauge wire to that of 26-gauge wire?

a. 1.6
b. 1.3
c. 0.62
d. 0.79
e. 0.88

6. A conductor of radius r, length l and resistivity ρ has resistance R. What is the new resistance if it is stretched to 4 times its original length?

a. $\frac{1}{16}R$
b. $\frac{1}{4}R$
c. R
d. $4R$
e. $16R$

7. A small bulb is rated at 7.5 W when operated at 125 V. Its resistance (in ohms) is

a. 0.45.
b. 7.5.
c. 17.
d. 940.
e. 2100.

8. A small bulb is rated at 7.5 W when operated at 125 V. The tungsten filament has a temperature coefficient of resistivity $\alpha = 4.5 \times 10^{-3}$ °C. When the filament is hot and glowing, its temperature is seven times its cold temperature (20 °C). What is the resistance of the filament (in ohms) at room temperature?

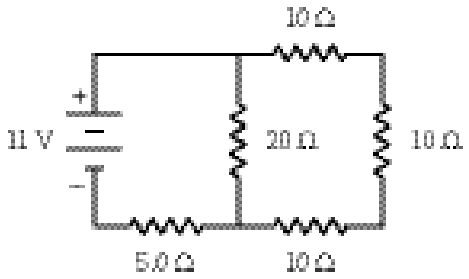
a. 1280.
b. 1350.
c. 1911.
d. 45[illegible].
e. 9630.

9. The electron density in copper is 8.49×10^{28} electrons/m^3. The electron charge is e = 1.6×10^{-19} C. When a 1.00 A current is present in a copper wire with a 0.40 cm^2 cross-section, the electron drift velocity (in m/s), with direction as defined relative to the current density, is

a. -1.84×10^{-6}.
b. $+1.84\times10^{-6}$.
c. -1.8
d. -5.43×10^{5}.
e. $+5.43\times10^{5}$.

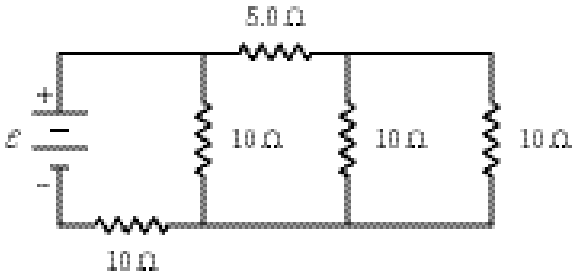
10. What is the magnitude of the potential difference across the 20 Ω resistor?

a. 3.2 V
b. 7.8 V
c. 11 V
d. 5.0 V
e. 8.6 V



11. At what rate is thermal energy generated in the 5 Ω resistor when ε = 24 V?

a. 13 W
b. 3.2 W
c. 23 W
d. 39 W
e. 51 W



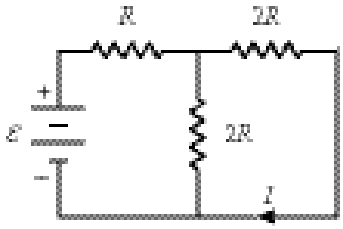
12. When a 20-V *emf* is placed across two resistors in series, a current of 2.0 A is present in each of the resistors. When the same emf is placed across the same two resistors in parallel, the current through the *emf* is 10 A. What is the magnitude of the greater of the two resistances?

a. 7.2 Ω
b. 7.6 Ω
c. 6.9 Ω
d. 8.0 Ω
e. 2.8 Ω

13. A resistor of unknown resistance and a 15 Ω resistor are connected across a 20-V *emf* in such a way that a 2.0 A current is observed in the emf. What is the value of the unknown resistance?

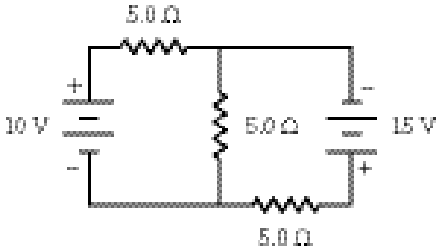
a. 75 Ω
b. 12 Ω
c. 7.5 Ω
d. 30 Ω
e. 5.0 Ω

14. Determine ε when $I = 0.50$ A and $R = 12$ Ω .



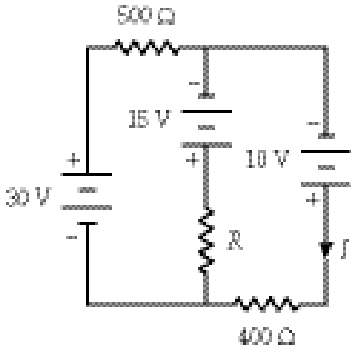
a. 12 V
b. 24 V
c. 30 V
d. 15 V
e. 6.0 V

15. Determine the current in the 10-V *emf*.



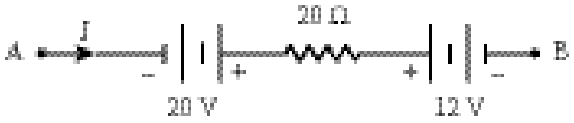
a. 2.3 A
b. 2.7 A
c. 1.3 A
d. 0.30 A
e. 2.5 A

16. Determine the magnitude and sense (direction) of the current in the 500 Ω resistor when $I = 30$ mA.



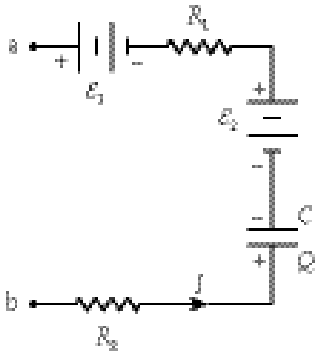
a. 56 mA left to right
b. 56 mA right to left
c. 48 mA left to right
d. 48 mA right to left
e. 26 mA left to right

17. What is the potential difference $V_B - V_A$ when the I= 1.5 A in the circuit segment below?



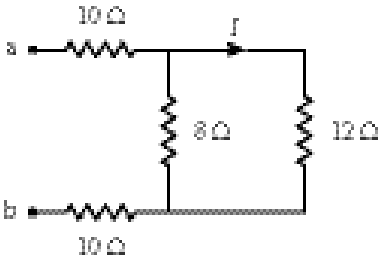
a. +22 V
b. –22 V
c. –38 V
d. +38 V
e. +2.0 V

18. If $\varepsilon_1 = 4.0$ V, $\varepsilon_2 = 12.0$ V, $R1 = 4\ \Omega$, $R2 = 12\ \Omega$, $C = 3\ \mu$F, $Q = 18\ \mu$C, and $I = 2.5$ A, what is the potential difference $V_a - V_b$?



a. –30 V
b. 30 V
c. 5.0 V
d. –5.0 V
e. –1.0 V

19. If $I = 0.40$ A in the circuit segment shown below, what is the potential difference $V_a - V_b$?



a. 31 V
b. 28 V
c. 25 V
d. 34 V
e. 10 V

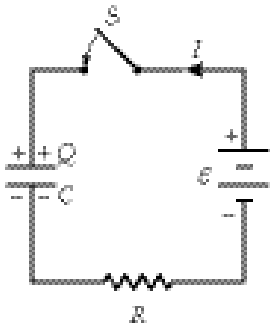
20. In an *RC* circuit, how many time constants must elapse if an initially uncharged capacitor is to reach 80% of its final potential difference?

a. 2.2
b. 1.9
c. 1.6
d. 3.0
e. 5.0

21. How many time constants must elapse if an initially charged capacitor is to discharge 55% of its stored energy through a resistor?

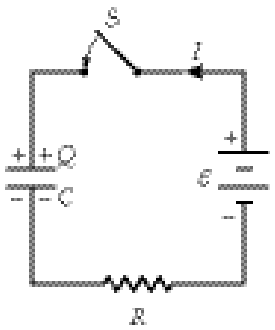
a. 0.60
b. 0.46
c. 0.52
d. 0.40
e. 1.1

22. At $t = 0$ the switch S is closed with the capacitor uncharged. If $C = 30\ \mu$F, $\varepsilon = 30$ V, and $R = 5.0$ k Ω , at what rate is energy being stored in the capacitor when $I = 2.0$ mA?



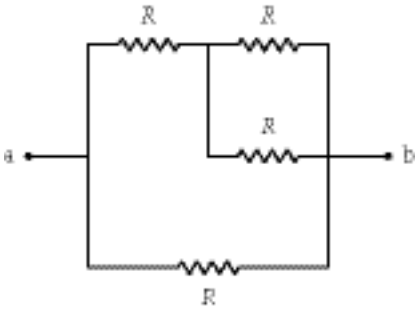
a. 32 mW
b. 40 mW
c. 44 mW
d. 36 mW
e. 80 mW

23. At $t = 0$ the switch S is closed with the capacitor uncharged. If $C = 40\ \mu$F, $\varepsilon = 50$ V, and $R = 5.0$ k Ω, how much energy is stored by the capacitor when $I = 2.0$ mA?



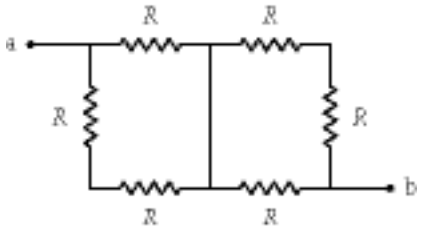
a. 20 mJ
b. 28 mJ
c. 32 mJ
d. 36 mJ
e. 40 mJ

24. What is the equivalent resistance between points a and b when $R = 30$ Ω?



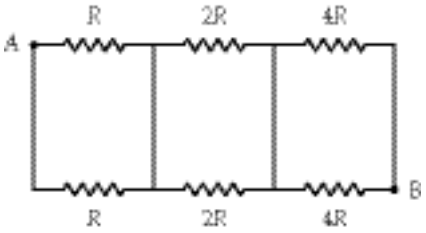
a. 27 Ω
b. 21 Ω
c. 24 Ω
d. 18 Ω
e. 7.5 Ω

25. What is the equivalent resistance between points a and b when $R = 12$ Ω?



a. 20 Ω
b. 16 Ω
c. 24 Ω
d. 28 Ω
e. 6.0 Ω

26. What is the equivalent resistance between points A and B in the figure when $R = 20$ Ω?

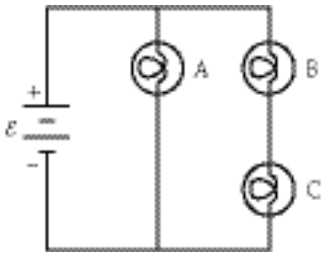


a. 77 Ω
b. 63 Ω
c. 70 Ω
d. 84 Ω
e. 140 Ω

27. In a loop in a closed circuit, the sum of the currents entering a junction equals the sum of the currents leaving a junction because

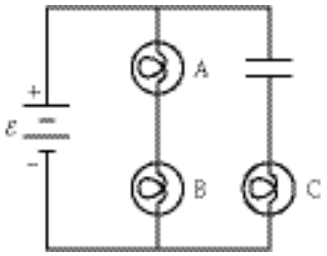
a. the potential of the nearest battery is the potential at the junction.
b. there are no transformations of energy from one type to another in a circuit loop.
c. capacitors tend to maintain current through them at a constant value.
d. current is used up after it leaves a junction.
e. charge is neither created nor destroyed at a junction.

28. The circuit below contains three 100W light bulbs. The *emf* ε = 110 V. Which light bulb(s) is(are) brightest?



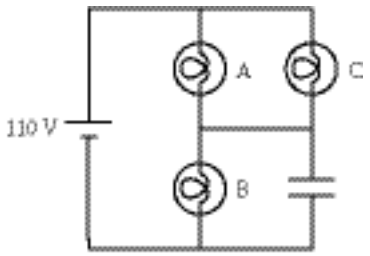
a. A
b. B
c. C
d. B and C
e. All three are equally bright.

29. The circuit below contains three light bulbs and a capacitor. The *emf* ε = 110V. The capacitor is fully charged. Which light bulb(s) is (are) dimmest?



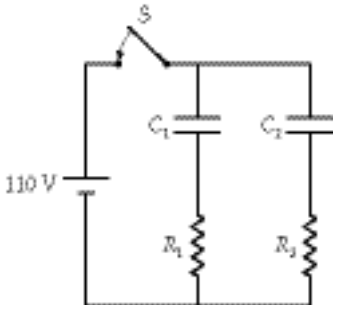
a. A
b. B
c. C
d. A and B
e. All three are equally bright (or dim).

30. The circuit below contains three light bulbs and a capacitor. The emf is 110 V and the capacitor is fully charged. Which light bulb(s) is (are) brightest?



a. A
b. B
c. C
d. A and B
e. A and C

31. The capacitors are completely discharged in the circuit shown below.



The two resistors have the same resistance *R* and the two capacitors have the same capacitance *C*. After the switch is closed, the current

a. is greatest in C_1.
b. is greatest in C_2.
c. is greatest in R_1.
d. is greatest in R_2.
e. is the same in C_1, C_2, R_1 and R_2.