CHEMISTRY

BOOKS - VGS BRILLIANT CHEMISTRY (TELUGU ENGLISH)

ELECTRIC CURRENTT

Exercise

1. The net charge on a current carrying conductor is

A. Zero

B. Constant

C. varying

D. Negative

Answer:

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2. A steady current is passing through a conductor of non-uniform cross-section . The

net quantity of charge crossing any cross-section per second is

A. Independent of area of cross-section

B. Directly proportional to the length of conductor

C. Directly proportional to the area of cross – section

D. Inversely proportional to the length of conductor

Answer:

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3. If a current of 300 mA is following in a conductor, then the no.of electrons passed through the conductor in 4 min is (charge on an electron $= 1.6 \times 10^{-19} C$

A. 4.5×10^{20}

B. 9.0×10^{20}

C. 4.5×10^{18}

D. 9.0×10^{18}

Answer:

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4. At room temperature, copper has free electron density of $8.4 \times 10^{28} m^{-3}$. The electron drift velocity in a copper conductor of cross-sectional area of $10^{-6} m^2$ and carrying a current of 5.4 A , will be

A. 4m-s^{-1}

B. 0.4m-s^{-1}

C. 4 cm-s^{-1}

D. 0.4 mm-s^{-1}

Answer:

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5. The resistance of an incandescent lamp is

A. Greater when switched ON

B. Smaller when switched ON

C. Greater when switched OFF

D. same whether it is switched OFF or ON

Answer:

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6. Three copper wires have lengths and cross-sectional areas of (l and A) ,(2land A / 2) and (l/2 and 2A) . Resistance will be minimum in

A. Wire of cross – sectional area A

B. Wire of cross – sectional area $A/2$

C. Wire of cross – sectional area 2A

D. same in all three cases

Answer:

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7. If the length of a conductor is halved,then its conductanc will be

A. halved

B. Doubled

C. Quadrupled

D. unchanged

Answer:

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8. What length of the wire (specific resistance $48 \times 10^{-8} \Omega - m$) is needed to make a resistance of 4.2Ω ?

A. $1 \cdot 1\text{m}$

B. $2 \cdot 1\text{m}$

C. $3 \cdot 1$ m

D. $4 \cdot 1\text{m}$

Answer:

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9. A wire of length l is drawn such that its diameter is reduced to half of its original diameter. If the initial resistance of the wire were 10Ω , its new resistance would be

A. 40Ω

B. 80Ω

C. 120Ω

D. 160Ω

Answer:

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10. A uniform wire of resistance R is uniformly compressed along its length, unitl its radius

becomes n times the original radius. Now resistance of the wire becomes.

A. $\frac{R}{n^4}$

B. $\frac{R}{n^2}$

C. $\frac{R}{n}$

D. nR

Answer:

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11. A series combination of two resistors 1 Ω each is connected to a 12 V battery of internal resistance 0.4Ω The current flowing through it is

A. 10A

B. 7.5 A

C. 5A

D. 2.5 A

Answer:

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12. An electric current is passed through a circuit containing two wires of the same material, connected in parallel. If lengths and radii of the wires are in the ratio of 4 : 3 and 2 : 3 , then ratio of the currents passing through the wires will be

A. 0.12569444444444

B. 0.084027777777778

C. 0.04375

D. 0.043055555555556

Answer:

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13. What will be the resistance between P and Q in the following circuit ?

A. 2Ω

B. 3Ω

C. 4Ω

D. 5Ω

Answer:

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14. A_3 volt battery with negligible internal resistance is connected in a circuit as shown in the figure. The current (1) in circuit will be

A. $\frac{1}{3}A$

B. 1A

C. $1 \cdot 5$A

D. 2A

Answer:

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15. A current of 2A flows in a system as shown in the figure. The potential difference between A and B $(V_A - V_B)$ will be

A. 1v

B. 2v

C. 3V

D. 4V

Answer:

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16. The current flowing through a lamp , marked as 60 W and 240 V is

A. $0 \cdot 25$A

B. 1A

C. $2 \cdot 5$A

D. 5A

Answer:

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17. The power of an electric bulb marked as 40 W and 200 V used in a circuit of supply voltage 100 V will be

A. 100 W

B. 40 W

C. 20 W

D. 10W

Answer:

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18. In India, electricity is supplied for domestic use at 220V. It is supplied at 110 V in USA. If the resistance of a 60 W bulb for use in India is R ,

then resistance of a 60 W bulb for use in USA will be

A. R

B. 2R

C. $\frac{R}{2}$

D. $\frac{R}{4}$

Answer:

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19. The net charge on a current carrying conductor is

A. Zero

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20. A steady current is passing through a conductor of non-uniform cross-section . The net quantity of charge crossing any cross-section per second is

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